

**THE COMPETENCIES OF MIDWIVES DURING THE PROVISION OF IMMEDIATE  
POSTNATAL CARE IN SWAZILAND**

by

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### DECLARATION

I declare that **THE COMPETENCIES OF MIDWIVES DURING THE PROVISION OF IMMEDIATE POSTNATAL CARE IN SWAZILAND** 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.



24 February 2016

.....

**SIGNATURE**

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## **ABSTRACT**

The aim of the study was to describe the competencies of midwives during the provision of immediate postnatal care (PNC) with the intention of adapting and linking international best practice guidelines as well as a conceptual framework for the implementation of PNC in Swaziland. A quantitative cross-sectional design study was conducted to investigate the competencies of midwives during the provision of immediate postnatal care services to mothers and their infants. A systematic random sampling technique was used to select eighty-eight (88) midwives and six (6) senior midwives to participate in the study. Data collection was done using structured questionnaires. Quantitative data was complemented by data that was generated from open-ended questions at the end of the questionnaires. Data analysis was conducted using IBM SPSS Statistics version 22.0 software. The study highlighted that all the midwives who participated in this study had the relevant qualification. Of the respondents, 70.5% were state-certified midwives with a second registered certificate, 27.3% had bachelor's degrees, while 2.3% had an advanced midwifery certificate. The study found no difference between the type of qualification of midwives and the knowledge of PNC interventions to be offered to mothers immediately post-delivery across different qualifications held by the midwives (Kruskal-Wallis test:  $\chi^2=5.498$ ,  $df=2$ ,  $p=0.064$ ). Gaps were identified in their knowledge and practices. There were discrepancies in the level of knowledge and practices regarding maternal vital sign assessment immediately after delivery (within 30 minutes). It was noted that these vital signs, i.e. blood pressure (12.5%), temperature (50.0%), pulse (54.5%), respiration (63.6%) were not taken after delivery. It was also noted that 15.0%, 58.0%, 64.8% of the respondents were not aware of the importance of assessing newborns for APGAR, skin-to-skin contact and drying the neonate. The study found that there were no postnatal care guidelines in Swaziland. The findings of the study led to the adaptation and linkage of the latest international evidence-based guidelines and a conceptual

framework for the implementation of immediate PNC to mothers and their infants in Swaziland.

### **Key concepts**

Conceptual framework; HIV-exposed infants; HIV-positive; immediate postnatal care; midwives; newborns; postnatal mothers; senior midwives; guidelines.

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## *Dedication*

*To my dear and loving soul mate (Wendy Patience Gule), family,  
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## LIST OF ABBREVIATIONS/ACRONYMS

AHWO	Africa Health Workforce Observatory
AIDS	Acquired Immune Deficiency Syndrome
APGAR	Appearance, Pulse, Grimace, Activity and Respiration
AAP	American Academy of Pediatrics
ART	Antiretroviral Therapy
ARV	Antiretroviral
BCG	Bacille Calmette-Guérin
BP	Blood Pressure
CRNNS	College of Registered Nurses of Nova Scotia
CSO	Central Statistics Office
DBS	Dried Blood Spot
EGPAF	Elizabeth Glaser Paediatric AIDS Foundation
EmOC	Emergency Obstetric Care
GDG	Guidelines Development Group
HIV	Human Immunodeficiency Virus
ICM	International Confederation of Midwives
IPPF	International Planned Parenthood Federation
KoS	Kingdom of Swaziland
KoS, MoH	Kingdom of Swaziland, Ministry of Health
MCH	Maternal and Child Health
MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
MNCH	Maternal, Newborn and Child Health
MoH	Ministry of Health
MPS	Making Pregnancy Safer
MTCT	Mother-to-Child Transmission
NICE	National Institute for Health and Care Excellence
NGOs	Non-governmental Organizations
NVP	Nevirapine
OIs	Opportunistic Infections
PMTCT	Prevention of Mother-to-Child Transmission of HIV
PNC	Postnatal Care
RCM	Royal College of Midwives
RHO	Rank Correlation Coefficient
RNAO	Registered Nurses' Association of Ontario
SOPS	Standard Operating Procedures



SRH	Sexual Reproductive Health
SRHU	Sexual Reproductive Health Unit
STI	Sexual Transmitted Infections
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
Unisa	University of South Africa
WB	World Bank
WHO	World Health Organization

# CHAPTER 1

## ORIENTATION TO THE STUDY

### 1.1 INTRODUCTION

According to the Swaziland Confidential Enquiry into Maternal Deaths Triennial Report 2008–2010, of all the deaths that were reported during the period 2008–2010, 54% occurred during the postnatal period (Kingdom of Swaziland Ministry of Health [KoS, MoH] 2011a:8). Hypovolemic shock was reported as the leading cause of maternal deaths during the postnatal period, followed by cardiac arrest, septic shock and respiratory failure (KoS, MoH 2011a:8). This suggests that if these women had been provided with appropriate and quality immediate postnatal care, they would have survived or at least experienced reduced mortality. This formed the basis of this study. To enhance readers' understanding of this study, the thesis is divided into chapters that are further sub-divided into a number of subsections.

Chapter 1 of the thesis deals with the orientation to the study, including discussions relating to the research problem and background to the study. It also includes the aim and objectives of the study.

Chapter 2 reports on the continuum of care from pregnancy to motherhood, content of postnatal care, postnatal care coverage and trends, essential competencies of midwives for immediate postnatal care, the latest international evidence-based guidelines in postnatal care, current developments in postnatal care, and factors affecting quality postnatal care.

Chapter 3 includes a discussion of the methodology used in the study. This includes a description of the study design and methods of data collection. Added to this are discussions relating to ethical issues addressed in the study.

Chapter 4 presents discussions on data management and data analysis, which in essence include the use of inferential and descriptive statistics. The findings of the study are also presented in this chapter.

Chapter 5 presents a discussion of the findings of the study. Discussions of the findings are made using the extant literature discussed in chapter 2.

Chapter 6 presents the implications of the study for postnatal care in Swaziland. Within this chapter, the limitations of the study are presented, including recommendations for practice, training and education. The chapter also includes a section on conceptual framework and guideline adaptation. The chapter ends with a summary, which serves as a conclusion of the study.

## **1.2 BACKGROUND OF THE RESEARCH PROBLEM: ITS SOURCE**

A research problem is the axis, around which the whole research study revolves, as it includes reasons for undertaking the research study (Lutwama 2011:4). This in essence relates to the issues that motivate researchers to engage in research. Examples of these may include discrepancies in postnatal care (PNC) practices, attitudes of midwives toward PNC, and changes in government policies. The discussions below outline the research problem from global, regional and national perspectives.

### **1.2.1 The global case of postnatal care**

The death of women from pregnancy, childbirth and post-delivery complications is a global problem, and this is particularly the case in the developing world. According to the World Health Organization (WHO), United Nations Children Emergency Fund (UNICEF), United Nations Population Fund (UNFPA), World Bank (WB), and the United Population Division (UNPD) (2014:21), about 289 000 women died during childbirth in 2013. The majority (99% or 286 000) of these deaths occurred in developing countries (WHO, UNICEF, UNFPA, WB & UNPD 2014:22). The women died of known and preventable causes, such as postpartum bleeding and hypertension (Say, Chou, Gemmill, Tunçalp, Moller, Daniels, Gülmezoglu, Temmerman & Alkema 2014:e327). Postpartum deaths accounted for 60% of all maternal deaths, compared to 15.5% and 23.9% for intrapartum and antepartum respectively (Aryal, Dariang & Cullen 2013:1). The major contributing factors to maternal deaths are delays in making the decision to go to the health facility and delay in being offered quality and appropriate care (Jacobson 2011:4). Although women may sometimes seek help from health facilities on time, the quality of the services offered in these facilities in the developing world are

substandard (Say et al 2014:e328). This is reflected in the high (99%) maternal mortality ratio (MMR) in developing countries.

The neonatal mortality ratio is also a problem or concern in developing countries, as it accounts for three million deaths within the first week of life (WHO & UNICEF 2014:1). The causes of these deaths could be attributed to low birth weight, asphyxia and sepsis, a view echoed in WHO and UNICEF (2014:2). Human immunodeficiency virus (HIV)-exposed babies are more likely to be at risk of childhood infections due to low immunity and AIDS-related complications, like tuberculosis, than babies who are not exposed to HIV. If the global aim is to reduce maternal and neonatal deaths, the first step is to revisit the focus on immediate postnatal care, where most of these deaths occur.

It is important to state that capacity building programmes for healthcare workers, including midwives, on the prevention of mother-to-child transmission (PMTCT) of HIV, resulted in a reduction of HIV infection among infants (Sugandhi, Rodrigues, Kim, Ahmed, Amzel, Tolle, Dziuban, Kellerman & Rivadeneira 2013:S188). It is primarily for this reason that the UNFPA, International Confederation of Midwives (ICM) and WHO (2014:1–3) recommended for skilled health professionals, including midwives and gynaecologists, to attend to all childbirths. Adopting this approach would prevent or at least reduce maternal and infant mortality (Sugandhi et al 2013:S188). Despite the recommendation, it is noted in the literature sources that only 66% of childbirths in developing countries are attended to by skilled professionals (UNFPA, ICM & WHO 2014:1–3). Even though there is progress in skilled birth attendance rate, more needs to be done to improve the quality of care during the immediate postnatal care period (Say et al 2014:e328). An adherence to this stance will result in the prevention or at least a reduction in maternal and neonatal deaths.

### **1.2.2 The case of postnatal care in sub-Saharan Africa**

The majority (62%, 179 000) of all maternal deaths worldwide occur in sub-Saharan Africa, followed by Southern Asia (69 000), where the quality of maternal, newborn and child health is compromised (WHO, UNICEF, UNFPA, WB & UNPD 2014:21). Sub-Saharan Africa remains the only developing region in the world with a very high maternal mortality ratio (MMR) (510) relative to other regions like, Latin America and Caribbean (MMR:85), Western Asia (MMR:74), Northern Africa (MMR:69), Eastern Asia (MMR:33),

and Caucasus and Central Asia (MMR:39). Other regions in the world have moderate MMR, and examples of these include South-Eastern Asia (MMR:140), Southern Asia (MMR:190), and Oceania (MMR:190) (WHO, UNICEF, UNFPA, WB & UNPD 2014:21). These statistics clearly portray Africa as the most dangerous or unsafe place for childbirth, particularly the sub-Saharan Africa region (Say et al 2014:e327). This is confirmed by the high adult lifetime risk of maternal mortality (1 in 38) of women in sub-Saharan Africa, which is in sharp contrast with adult lifetime risk of maternal mortality (1 in 3 700) of women in developed countries (WHO, UNICEF, UNFPA, WB & UNPD 2014:21).

The sub-Saharan region is faced with a number of challenges relating to the quality of maternal and newborn child health services. Examples of these challenges include a lack of skilled birth attendants, a high burden of HIV, poverty, high infant and maternal mortality, and lack of resources (Dlamini 2013:88). Culture is also reported to be one of the challenges these services are facing in this region, and it is believed to have a huge influence on people's health-seeking behaviour. People in the sub-Saharan Africa region, including pregnant women, usually seek healthcare advice and care from traditional practitioners (Ademiluyi & Aluko-Arowolo 2015:153). However, people would seek help from healthcare professionals when there is a perceived seriousness or threat of a disease.

Home births are common in the sub-Saharan Africa region because of women's belief or trust in traditional practitioners to offer quality postnatal care (Ademiluyi & Aluko-Arowolo 2015:153). Although this is the case, hospital-based delivery rates are reported to be on the increase though at a slow pace (UNFPA, ICM & WHO 2014:10). Irrespective of its pace, the increase in hospital-based delivery rate is considered a positive and significant step towards the reduction of maternal and infant mortality rates. The slow pace of utilisation of healthcare professional services, which in this case relates to hospital-based delivery, is a function of reported or lived experience of poor quality care. Aryal et al (2013:1) agree with this, and state that the quality of care provided to mothers and their infants during the postnatal period is sub-standard. In sub-Saharan Africa, women continue to receive sub-standard immediate PNC, poor physical examination following normal birth, inconsistent measurement of vital signs, such as blood pressure, temperature, pulse and respiration (Dlamini 2013:78–80; Shongwe 2009:83; Ugboaja, Berthrand, Igwegbe & Obi-Nwosu 2013:45–47). Midwives

are the healthcare professionals who attend to or offer most of the childbirth services or care to women and their infants in sub-Saharan Africa. Thus, the maternal and infant mortality ratios in this region could be dramatically reduced if midwives provide quality and immediate PNC (Aryal et al 2013:1).

### **1.2.3 The case of postnatal care in Swaziland**

It is reported in the literature sources that Swaziland has a high MMR of about 593 per 100 000 live births, and a high infant mortality rate of about 79 per 1 000 live births (Kingdom of Swaziland Central Statistics Office (KoS CSO) 2015b:13). It is also noted by the Swaziland's Ministry of Health that Swaziland had 88% hospital deliveries in 2014, and over 57% of these were attended to or facilitated by midwives (KoS CSO 2008:120–122). It is worth noting that about 60% of maternal and newborn deaths often occur during the first 48 hours of puerperium in health facilities (Ziyane & Thwala 2010:16). This shows that the majority of maternal deaths occur under the care of skilled healthcare workers in health facilities. While this is the case, it is important to mention that most of the causes of maternal and neonatal deaths are preventable (KoS, MoH 2011a:9). Examples of these causes include haemorrhage, sepsis, pre-eclampsia or eclampsia and other indirect causes, such as anaemia, HIV, and acquired immune deficiency syndrome (AIDS) (KoS, MoH 2011a:9). According to the Swaziland Confidential Enquiry into Maternal Deaths Triennial Report 2008–2010 (KoS, MoH 2011a:1), HIV and AIDS remain the major indirect cause of maternal mortality in Swaziland, and account for 25% of maternal deaths (KoS, MoH 2011a:1). This is not surprising, given the high HIV prevalence (41.1%) among pregnant women in Swaziland (KoS, MoH 2010a:15). The Swaziland national statistics on maternal deaths in 2008 and 2010 supports this. It states that 46% of the women who died during this period were HIV-positive (KoS, MoH 2011a: 1). The question now arises, what has contributed to these maternal deaths?

According to the Second National Health Sector Strategic Plan for 2014 to 2018, Swaziland has a limited nurse and midwife ratio of about 1.9 per 10, 000 people (KoS, MoH 2015:1). The limited number of midwives available to provide quality postnatal care is often reported to contribute to the high maternal and infant mortalities in Swaziland. Another contributory factor to the high maternal and infant mortalities in Swaziland relates to vital signs. Shongwe (2009:83) notes in her study that midwives

are generally not consistent in measuring maternal vital signs, like blood pressure, temperature, pulse and respirations during the postnatal period. Leifer (2008:231) claims that if changes in maternal vital signs are identified or detected early, postnatal complications can be managed before they become life threatening. Changes in maternal vital signs are sometimes not identified by midwives in Swaziland during the postnatal period (Dlamini 2013:78–80). Such lapses in clinical practice are reported to result in maternal deaths from complications, such as postpartum bleeding, particularly among HIV-positive mothers (Aryal et al 2013:1). It is therefore important to enhance the quality of postnatal care offered to mothers and their infants in Swaziland, especially those living with HIV. One approach that will help to achieve this goal is to improve midwives' skills and knowledge of postnatal care. Yet, limited studies have been conducted on the competencies of midwives during the provision of immediate postnatal care to mothers and their infants in Swaziland.

### **1.3 THE RESEARCH PROBLEM: ITS SCALE**

The provision of PNC in the sub-Saharan Africa region is reported by UNFPA, ICM and WHO (2014:10) as unsatisfactory. This is reflected in the high maternal and infant mortality ratios reported in the countries of this region, including Swaziland. While maternal and newborn deaths could be a function of a multitude of factors, such as a lack of knowledge and negative attitudes toward PNC practices, the exact nature of these factors and their effect on quality PNC practices in Swaziland are presently unknown. The identification of these factors and understanding their effect on PNC may influence the quality of services offered during this period. The development of such an understanding may enable healthcare professionals to reduce infant and maternal mortality ratios (Dlamini 2013:78–80).

For example, it is often noted in the literature sources that an accurate assessments of vital signs, is crucial for early diagnosis of maternal and neonatal problems during the PNC period (Leifer 2008:231). Added to this, timely identification of abnormal changes in vital signs can prevent or avert the development of life-threatening situations, like postpartum haemorrhage and sepsis (Leifer 2008:231). However, this assertion is often ignored in clinical practice (Simbar, Ghafari, Zahrani, Majd 2009:267–268). Taking for example the outcome of a quantitative descriptive cross-sectional study on 372 mothers during a 6-week PNC visit in Swaziland, only 44.9% of respondents (n=167) had their

temperature measured, 26.6% (n=99) had their pulse rate measured and about half 53.2% (n=198) were physically assessed following childbirth (Dlamini 2013:78–80). This outcome is worrying, and it serves as the impetus that prompted the researcher to inquire about the competencies of midwives during the provision of immediate postnatal care.

## **1.4 AIM OF THE STUDY**

The aim of the study was two-fold. First, the study aimed to determine the competencies of midwives during the provision of immediate postnatal care. Second, the study aimed to adapt international evidence-based best practice guidelines and conceptual framework for the implementation of immediate PNC in Swaziland to mothers and their infants.

### **1.4.1 Research objectives**

The research objectives are specific information that a study has to yield in order to address its aims (Joubert & Ehrlich 2010:62). Added to this, research objectives are often stated in clear and unambiguous operational terms, and are specific to individual studies. In other words, research objectives are the individual or specific components of a study that a researcher intends to achieve (Joubert & Ehrlich 2010:62). The objectives of this study were to

- describe and evaluate the competencies of midwives during the provision of immediate PNC to mothers and their infants
- identify gaps in the knowledge and practices of midwives during the provision of immediate postnatal care to mothers and infants
- adapt international evidence-based best practice guidelines and conceptual framework for the implementation of PNC to mothers and their infants in Swaziland

### **1.4.2 Hypotheses**

According to Jackson (2012:183), a hypothesis is a prediction of relationships between variables of a study. There are two types of hypothesis, null and alternative. A null



hypothesis assumes that there is no difference in the outcome of interest between study groups (Jackson 2012:183). In contrast, an alternative hypothesis assumes that there is a difference in the outcome of interest between study groups (Johnson & Christensen 2012:490). The present study employed a quantitative methodology to investigate the relationships between a large number of variables relating to the competencies of midwives during the provision of immediate PNC to mothers and their infants. The study utilised a large number of null hypotheses to predict the relationships between the competencies of midwives and provision of immediate PNC. The hypotheses utilised are as follows:

- H01 There is no difference between the age of midwives and their knowledge of PNC required to be provided to mothers immediately after childbirth.
- H02 There is no difference between the type of qualification of midwives and the knowledge of PNC required to be provided to mothers immediately after childbirth.
- H03 There is no difference between the years of experience of midwives and the knowledge of PNC required to be provided to mothers immediately after childbirth.
- H04 There is no difference between the years of experience of midwives and the knowledge of PNC required to be provided to infants immediately after childbirth.
- H05 There is no difference between the institution of training of midwives and the knowledge of PNC required to be provided to infants immediately after childbirth.
- H06 There is no difference between the place of work of midwives across health facilities and the knowledge of PNC required to be provided to mothers immediately after childbirth.

## **1.5 SIGNIFICANCE OF STUDY**

The Kingdom of Swaziland has a number of global commitments, including that which relates to its effort to achieve the MDGs. The Kingdom of Swaziland is therefore

required to provide a detailed report on its role in the effort to achieve the MDGs. This study assisted the Kingdom of Swaziland to compile its report.

### **1.5.1 Evidence generation for the Ministry of Health on the quality of postnatal care**

The results of this study informed the National Sexual and Reproductive Health Unit (SRHU) of Swaziland on the competencies of midwives on the provision of immediate postnatal care to mothers and their infants. The Sexual Reproductive Health Unit is an initiative commissioned by the Kingdom of Swaziland Ministry of Health (KoS, MoH) to offer safe maternal, newborn and child health services, and enforce and monitor the provision of quality immediate postnatal care services. The evidence generated by this study helped to enhance the functions of this initiative, the National SRHU.

### **1.5.2 Adaptation and linkages of international evidence-based best practice guidelines and conceptual framework**

The evaluation of the competencies of midwives during the provision of immediate PNC resulted in the adaptation and linkage of international best practice guidelines and conceptual framework for midwives in Swaziland. The guidelines will offer guidance to midwives on the implementation of quality immediate postnatal care. The Kingdom of Swaziland did not have any guiding document related to PNC at the time of the study. The provision of quality immediate PNC will reduce maternal and infant morbidity and mortality. Added to this, the framework will inform both the Ministry of Health (MoH) and stakeholders of their roles relating to PNC and reduction of maternal and infant mortality and morbidity.

## **1.6 DIFFERENTIAL DEFINITIONS: KEY CONCEPTS AND OPERATIONALISATION**

Researchers, public health specialists and academics advise that key concepts embedded in titles, problem statements, objectives and/or hypotheses of research studies must be clearly defined in context of the specific studies conducted (University of South Africa [Unisa] 2014:67). The provision of clear and operational definitions that can be measured would enable readers and researchers not only to enhance their

understanding of findings and discussions of research studies, but they would also enhance understanding and applicability or utility of recommendations by the same. Below are the operational definitions of the key concepts used in the study.

### 1.6.1 Competency

Competencies are abilities or attributes, described in terms of behaviour, key to effective performance within a particular job. In this study, competencies relate to the application of skills, knowledge of science and medical technology in order to optimise the effectiveness of midwifery practice, and minimise medical-related risks (such as nosocomial infections) during the postnatal period (ICM 2011:1–11).

### 1.6.2 Quality of care

According to the WHO (2006a:9–10), the concept, “quality of care” has six dimensions: effectiveness, efficiency, accessible, acceptable or patient-centred, equitable, and safe. The dimension of **effectiveness** relates to the delivery of healthcare that is informed by best available evidence. Associated with this is the view that the provision of quality healthcare can result in improved health outcomes for individuals and communities. **Efficiency** relates to the delivery of healthcare in a manner that maximises the use of resources and avoids wasting of the same. The **accessible** dimension on the other hand focusses on the delivery of healthcare that is timely and geographically reasonable in a manner that meets the health needs of the recipients of care. The **acceptable** or **patient-centred** dimension relates to the delivery of healthcare that takes into account the preferences and aspirations of individual recipients of care, and the cultures of their communities. The **equitable** dimension concerns the delivery of the same level or degree of healthcare to all individuals or persons of a community. This dimension is underpinned by the principle of equity. This means that the provision of care should not be influenced by people’s individual personal characteristics, such as gender, race, ethnicity, geographical location and socioeconomic status. Finally, the **safe** dimension relates to the delivery of healthcare to minimise risks and harm to recipients of care.

### **1.6.3 Postnatal period**

The **postnatal period** is a period of recovery from pregnancy-related effects and childbirth (WHO 2014:1). However, in this study, the postnatal period referred to the period from birth to 24 hours after delivery.

### **1.6.4 HIV-positive mother**

In this study, an **HIV-positive mother** refers to a female who has been tested for HIV during pregnancy and childbirth, and who was found to have HIV in her blood (WHO 2013a:17).

### **1.6.5 HIV-exposed infants**

This refers to an infant who has been born from an HIV-positive mother and whose HIV status has not yet been confirmed (KoS, MoH 2010a:43).

### **1.6.6 HIV prophylaxis**

In this study, **HIV prophylaxis** includes the taking of antiretroviral medication by an HIV-positive mother and HIV-exposed infant for a specified period in order to prevent MTCT of HIV (WHO 2013a:17).

### **1.6.7 Human immunodeficiency virus (HIV)**

According to Nancy, Evans and Terlonge (2010:12), HIV refers to a retrovirus that causes acquired immunodeficiency syndrome (AIDS) by infecting and destroying the helper T-cells of the immune system. The continuous loss of the T-cells may result in a weakened immune system, and subsequent development of AIDS.

### **1.6.8 Acquired immunodeficiency syndrome (AIDS)**

This is a severe immunological disorder caused by the HIV, resulting in a defect in cell-mediated immune responses that are manifested by increased susceptibility to opportunistic infections (Nancy et al 2010:12).

### **1.6.9 Antiretroviral drugs (ARVs)**

These are drugs that suppress HIV replication in HIV-positive people. It may also help protect healthy people who are exposed to HIV from contracting this virus (WHO 2013a:15).

### **1.6.10 Postnatal care**

In this study, **postnatal care** refers to care given to meet the needs of the mother and the baby from birth to 24 hours after delivery (KoS, MoH 2010a:44).

### **1.6.11 Midwife**

In this study, a **midwife** is a person who has successfully completed a prescribed programme of study in midwifery, and who has acquired the requisite qualification to be registered and legally licensed to practice midwifery (ICM 2011:1).

### **1.6.12 Senior midwives**

In this study, a **senior midwife** is a person who has successfully completed a prescribed programme of study in midwifery, and who has acquired the requisite qualification to be registered and legally licensed to practice midwifery, and who has been promoted by the chief nursing officer to the rank of a **senior midwife or nurse manager** (ICM 2011:1; KoS, MoH 2011c:8).

### **1.6.13 Puerperium or postpartum**

In this study, **puerperium** or **postpartum** refers to the period from birth to 24 hours following delivery (Mazumdar 2011:1).

## **1.7 FRAMEWORK: CONCEPTS AND RELAVANCE TO THE STUDY**

According to Sinclair (2007:39), conceptual frameworks are important structures that provide guidance to researchers in the development of research studies. They are in the

main made up of interrelated concepts. There are a number of conceptual frameworks noted in the literature that can be used by researchers to guide midwifery related studies. Examples of these include the framework for evaluation of quality of care in maternity services (University of Aberdeen 2010:2), human rights framework for midwifery care (Thompson 2004:175–181), and the framework for quality of obstetric care (Morestin et al 2009:1–11). After a careful examination of the available conceptual frameworks, this study opted for the framework for Quality of Obstetric Care (Morestin et al 2009) because its components and their interrelatedness are closely related or aligned to the objectives and aims of this study.

### **1.7.1 Definition of concepts of the theoretical framework**

The framework by Morestin et al (2009) for quality of obstetric care was adopted in this study. This framework enables researchers to evaluate the provision of quality of care at all points along the obstetric care continuum. It has three components (structure, process and outcome) for evaluating the quality of reproductive healthcare services, including PNC. The framework presents a synthesised representation of its main elements, derived from scientific literature sources. The visual representation of the relationships among the components or elements of the framework reminds researchers that evaluation of obstetric care involves multiple factors (Morestin et al 2009:12). Austin et al (2014:S1) assert that the three components of the framework are not independent of each other, but are linked or interrelated.

#### **1.7.1.1 Structure**

This is the first component of Morestin et al (2009) framework. It is made up of a number of sub-components: human, material, and organisational resources. These resources (discussed below) are required for the provision of quality PNC care.

##### *1.7.1.1.1 Human resources*

The term **human resources** refers to the professionals responsible for obstetric care. According to Manzi, Schellenberg, Hutton, Wyss, Mbuya, Shirima, Mshinda, Tanner and Schellenberg (2012:1–2), human resources can have a huge influence on the quality of services provided to clients. This is particularly the case in healthcare services because

of the need for care co-ordination to offer the best available care to clients. It is therefore important that skilled healthcare professionals are involved in the provision of PNC. Midwives are responsible for immediate postnatal care, and it is therefore reasonable that they are equipped with relevant and appropriate knowledge and skills to render quality care competently (ICM 2011:2). Acknowledging this, ensuring that midwives with the right skills and knowledge are available is a fundamental requirement for the provision of quality PNC (UNFPA, ICM & WHO 2014:10–12)

#### *1.7.1.1.2 Material resources*

The term **material resources** refers to medication, consumables, diagnostic equipment, infrastructure and transport. Any shortfall in these resources could result in poor outcomes (such as maternal and or neonatal morbidity or mortality) for mothers and newborns. Non-availability of ARV drugs could result in MTCT of HIV, particularly among HIV-infected pregnant and lactating mothers. Additional resources are required for providing immediate PNC services, especially for HIV-positive mothers and their HIV-exposed infants to reduce the rate of MTCT of HIV. Examples of the additional resources required include ARV drug prophylaxis (zidovudine, lamivudine and nevirapine), co-trimoxazole prophylaxis, isoniazid prophylaxis, nevirapine syringes and clips. These resources must be available to enhance quality PNC services.

Therapeutic and diagnostic equipment are also essential resources for rendering quality care (KoS, MoH 2010a:25). Examples of these include thermometers, sphygmomanometers, HIV determine tests, HIV Uni-gold tests and essential maternal and newborn drugs (Morestin et al 2009:6). Additionally, clean water, electricity and support services (sterilisation and laundry) are essential for providing PNC. The infrastructure in which obstetric care is provided influences the quality of immediate PNC (Morestin et al 2009:6). Telephones are important for communication, while ambulances and cars are essential for transporting clients to referral maternity wards. These are all essential components of quality PNC services.

#### *1.7.1.1.3 Organisational resources*

Hofmeyr, Haws, Bergstrom, Lee, Okong, Darmstadt, Mullany, Oo and Lawn (2009:S21–S22) state that organisational resources contribute to the provision of quality PNC.

Examples of these include human resource management, registers and medical records, obstetric protocols, supervision, continuing education, quality assurance measures, logistics, repair and maintenance. These resources ensure continuity of care provision.

In addition, the availability of organisational resources in maternal, newborn and child health services can enable midwives to provide quality healthcare services. In other words, the availability of organisational resources is essential for the provision of quality PNC services. This suggests that midwives may have the knowledge and skills of PNC services, but they cannot effectively offer these services without the necessary support. Therefore, it is impossible to evaluate the competencies of midwives without taking into account the environmental conditions under which midwives work. Hence, this study takes into the availability of organisational resources in the different study sites in evaluating the competencies of midwives.

#### **1.7.1.2 Process**

The process component of Morestin et al (2009) framework for quality of obstetric care consists of two sub-components: single provider-client interaction, and episode of care. These sub-components, which are discussed in detail below, relate to the competencies required of midwives to offer PNC.

##### *1.7.1.2.1 Midwives' technical expertise in offering PNC services*

This component of the framework focuses on the competencies of midwives during the provision of PNC services. Competency in midwifery consists of applying art or skill, science and medical technology in order to optimise benefits for mothers and their newborns during the immediate postnatal period without increasing medical-related risks, such as nosocomial infections (ICM 2011:1–11). Technical expertise or competencies of midwives were evaluated in this study. This involved assessing midwives' knowledge and practices during the provision of immediate PNC interventions to mothers and their newborns.

The United States Agency for International Development [USAID] (2014:5–6) reports that the provision of quality immediate PNC to HIV-infected mothers can reduce the risk



of complications, deaths, and promotes the health of mothers and their babies. The same agency adds that about 4–27% of infant mortality in sub-Saharan Africa can be averted if PNC and curative care in the postnatal period reach 90% of babies and their mothers (Warren 2015:11). This implies that quality PNC can save about 310 000 newborn lives a year in sub-Saharan Africa (Warren 2015:11). This can be achieved if the knowledge and skills of midwives in relation to PNC are enhanced (ICM 2011:1–11). Arguably, the competency of midwives during the provision of immediate PNC is therefore significant in the reduction of maternal and neonatal morbidity and mortality.

#### *1.7.1.2.2 Episode of care (quality of immediate PNC services rendered by midwives)*

Evaluating the quality of care within a broader time frame is particularly relevant for immediate PNC services (Morestin et al 2009:9). The timeliness of immediate PNC interventions during the postpartum period is crucial for ensuring that health problems are diagnosed early, and managed in time before they can become life-threatening (Hofmeyr et al 2009:S23). Given that the majority of deaths occur during PNC period, maternal deaths can be prevented or at least reduced if midwives can offer timely interventions during this period.

The data collection tool that was used in the present study assessed the timeliness of PNC services offered by midwives. The timeliness of PNC of this study was assessed using a data collection tool. The tool has a range of time frames for assessing midwives' PNC interventions. Examples of timeframes include maternal PNC services within 30 minutes after childbirth, and immediate newborn care within 30 minutes after delivery.

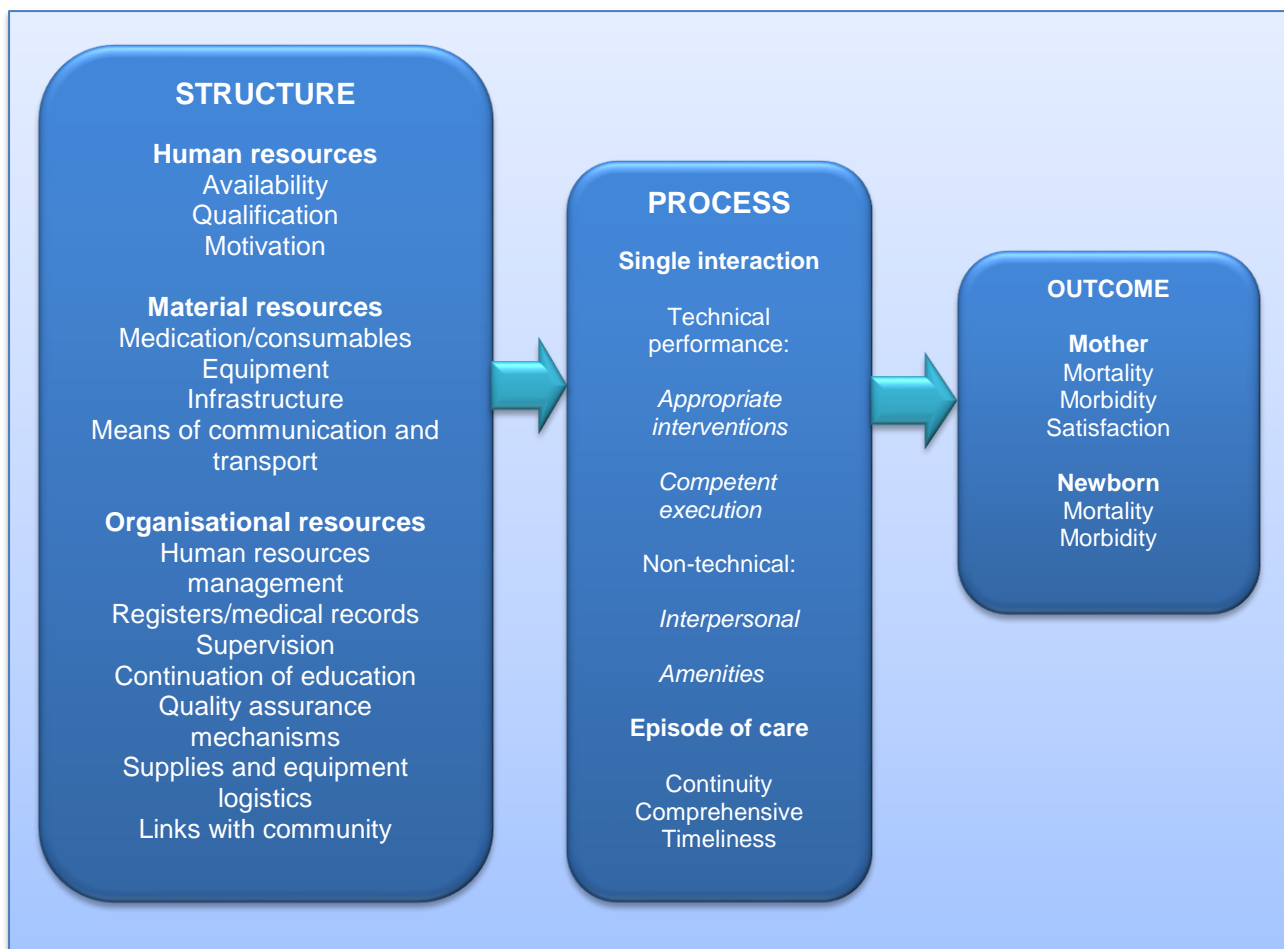
#### ***1.7.1.3 Outcome: morbidity, mortality and mothers' satisfaction with postnatal care***

This component relates to the outcome of PNC services or interventions. The outcome of PNC services can be evaluated in terms of their health consequences on maternal and infant morbidity and mortality, and clients' satisfaction with the care they are offered or provided (Morestin et al 2009:10). This component prescribes that availability of resources and competent provision of PNC could result in improved health status. In obstetric care, this could mean reduction of maternal and newborn or infant mortality and morbidity as well as clients' satisfaction. The MMR has fallen by 45% between

1990 and 2013 across the globe (WHO, UNICEF, UNFPA, WB & UNPD 2014:21). In 2013, an estimated 289 000 maternal deaths occurred in the world (WHO, UNICEF, UNFPA, WB & UNPD 2014:21). Swaziland is no exception in terms of this state of affairs as the maternal mortality ratio is as high as 593 per 100 000 live births (KoS CSO 2015b:13). Access to quality immediate PNC services would prevent 4–27% of these deaths (Warren 2015:11).

Provision of quality PNC to HIV-positive mothers and HIV-exposed newborns can contribute to the PMTCT of HIV. Provision of quality immediate PNC to HIV-positive mothers and HIV-exposed infants will promote maternal and infant health, and reduce maternal and infant mortality rates (KoS, MoH 2011a:6). In 2009 alone, an estimated 107 000 paediatric HIV infections were averted globally through PMTCT services (Elizabeth Glaser Paediatric AIDS Foundation [EGPAF] 2011:1). This indicates that MTCT of HIV among Swazis can be eliminated or at least reduced through robust timely and quality immediate PNC services. Morbidity has to do with short-term or long-term complications related to sub-standard immediate PNC services (Morestin et al 2009:10). Inadequate provision of PNC to HIV-positive mothers may result in these mothers having a low CD4 cell count, which in turn may enhance MTCT of HIV and progression to AIDS (KoS, MoH 2010a:33).

The progression to AIDS among HIV-infected mothers may not only increase the risk of HIV infection among infants, but it may also increase their morbidity and mortality ratios. The HIV-positive mothers are vulnerable to sepsis, which is the second global cause of maternal deaths (WHO & UNICEF 2010:11). The provision of timely and adequate PNC services to HIV-positive mothers and HIV-exposed infants will prevent puerperal complications, such as sepsis. On the other hand, mothers' satisfaction with the PNC services can be achieved through provision of quality and individualised immediate PNC. HIV-positive mothers' perceptions on the quality of PNC provided at health facilities are important in the utilisation of PNC services. In other words, mothers' perception of PNC services is a determining factor in decisions to attend PNC services at healthcare facilities (Morestin et al 2009:11). Figure 1.1 presents a diagrammatical representation of the framework for quality of obstetric care.



**Figure 1.1: Framework for the quality of obstetric care**

(Adapted from Morestin et al 2009:12)

### 1.7.2 Relevance of the framework to the study

In order to evaluate the quality of immediate PNC and to support informed decision-making, a comprehensive and systematic approach is to be followed. The components of the framework for quality of obstetric care are not new and have been discussed widely (Austin et al 2014:S1–S5). The framework is able to present in a synthesised, visual and accessible way the essential main elements for the provision of quality of obstetric care from the scientific literature. The visual representation of the relationships among the components of the framework (structure, process and outcome) is a constant reminder that evaluation of obstetric care is a result of multiple factors (Morestin et al 2009:12). This is especially important because the researcher had to adapt evidenced-based guidelines and conceptual framework; hence, the effectiveness

of the framework in guiding the current study with clear syntheses tailored for the evaluation of obstetric care.

This framework captures most of the essential elements that are inevitable for the evaluation of the quality of obstetric care when accessing health facility-based services. This framework might be useful in understanding the health outcomes such as high maternal mortality despite much investment to improve the quality of obstetric care, particularly in Swaziland, where maternal mortality has increased from 589 in 2007 to 593 per 100 000 live births in 2012 (KoS CSO 2015b:13). The latter is despite the high (97%) antenatal care coverage, 88% skilled birth attendance at delivery and 88% hospital deliveries (KoS CSO 2015a:11).

The framework outlines the interconnected inputs required for the delivery of quality PNC, which could result in improved health outcomes (reduced maternal and infant morbidity and mortality). The first component of the framework outlines the resources (human, material and organisational) essential for the provision of quality care. The second component refers to the technical provision of obstetric care, including appropriateness of interventions and the competencies of midwives during the provision of PNC as outlined by the ICM, the International Federation of Gynecology and Obstetrics (FIGO) and the WHO (ICM 2011:1–19). The third component, which is the outcome of health services, prescribes that availability of resources and competent provision of PNC could result in improved health status. In obstetric care, this could mean reduction of maternal and newborn or infant mortality and morbidity as well as clients' satisfaction. Austin et al (2014:S1) assert that the three components of the framework are not independent of each other, but are linked. Good structure should promote good process and good process in turn should promote good health outcomes.

The present study focused on the technical performance (competency) of immediate PNC by midwives, in order to describe, evaluate and identify gaps in the knowledge and practices of midwives during the provision of immediate PNC to mothers and their infants. The researcher developed a checklist (Annexure A) to assess the structure (human, material and organisational resources) in order to evaluate the quality of immediate PNC services by midwives (process) effectively. The quality of the PNC services rendered by midwives could provide a picture on the possible health outcomes of the postnatal clients.

## **1.8 RESEARCH METHODOLOGY AND RESEARCH DESIGN**

It is vital for a researcher to be clear about the role and purpose of research methods and designs. Gaining clarity in relation to design and methods would help to provide a clear structure to the whole research process from conceptualisation of study titles through to data collection, analysis and report writing. Quantitative research is the scientific investigation of a phenomenon to quantify or to reflect with numbers (Johnson & Christensen 2012:592). The quantitative approach was ideal for the study in order to describe and discuss the competencies of Swazi midwives when rendering immediate postnatal care services. Numerical data were manipulated through statistical procedures for the purpose of describing and discussing the competencies (technical performance) of midwives during provision of immediate PNC to HIV-positive mothers and HIV-exposed infants.

The study was based on a quantitative cross-sectional design, which investigated the competencies of midwives during the provision of immediate PNC services to mothers and infants. Data from this quantitative approach was complemented by qualitative data that was generated from open-ended questions at the end of the questionnaires.

## **1.9 ETHICAL CONSIDERATIONS**

The approval to conduct the study was sought and obtained from the Ministry of Health in Swaziland (Swaziland Ethics Committee) (Annexures C and D). Approval to conduct the study was also sought and obtained from the University of South Africa Higher Degrees Committee of the Department of Health Studies (Annexure B).

## **1.10 SCOPE OF THE STUDY**

The study was conducted in six health facilities that offer labour and delivery services in Swaziland. The target population comprised midwives and senior midwives in the six selected health facilities.

## **1.11 STUDY LIMITATIONS**

Although some qualitative data was collected, inclusion of a Q-methodological approach (Joy & Herrington 2011:24–28), in other words, the adoption of a mixed methods approach in the study could have helped in refining the guidelines that were adapted, as this approach could help in generating more insight into this area of study.

## **1.12 CONCLUSION**

This chapter presented the background information to this research study. It also presented the research problem, aims and significance of the study, definition of key terms, and the conceptual framework that underpins the study. The chapter also provided an overview of the research design and methods used in this study. In summary, this chapter has provided a succinct overview of the discussions presented in subsequent sections of chapter three of this thesis. The next chapter is a review of the literature on PNC, and related issues.

## **CHAPTER 2**

### **LITERATURE REVIEWS**

#### **2.1 INTRODUCTION**

This chapter presents a literature review that was conducted on PNC and related issues. A Literature review is a systematic process of identifying, scrutinising and summarising written information about a specific research problem (Levy & Ellis 2006:181). According to Munhall (2007:57), a literature review is not just a description of what other people have published, but also a discussion that presents insight and awareness of the different arguments, approaches and theories related to subjects explored or examined. To achieve this vision in a sound manner, a systematic approach is required to thoroughly search and explore all literature sources related to subjects under exploration (Parahoo 2006:342).

So, knowledge on the strength or quality of literature sources is implicated in this process. Ellis and Levy (2008:17) state that the work of a researcher should be built on the works of others. By so doing, the literature review helps in minimising chances of duplication. It also increases chances of coming up with new information. Here, a systematic overview of the data search strategies used within the review is clearly articulated. An account of the process undertaken is provided. The findings of all the materials reviewed are also discussed in this chapter, and emergent themes are highlighted. The decision to review specific literature sources was made following a quantitative-qualitative debate.

#### **2.2 QUANTITATIVE-QUALITATIVE DEBATE**

Healthcare research is generally carried out within two broad paradigms; positivists and naturalistic, which in essence can be referred to as quantitative and qualitative respectively. There has been an ongoing uncertainty about which methodological (qualitative or quantitative) approach is most suitable for exploring healthcare issues. Discussions in this context about which methodological approach is superior or inferior

have been ongoing for decades, but they tend to focus mainly on rigour, validity and reliability of research studies (Polit & Beck 2004:114).

Historically, researchers have perceived 'scientific methods' of research to consist of only quantitative research. This is because it is founded on a systematic and objective process, deemed to provide a sounder knowledge-base to guide healthcare practice than qualitative research (Porter, Millar & Reid 2012:31). On the other hand, advocates of qualitative research claim that this approach is more effective for enhancing people's understanding of human experiences and factors that may influence behaviour, such as the provision of PNC (Wertz 2011:79). The same author also states that qualitative research concentrates on discovery and understanding of a subject from all angles, a methodology that is key in keeping with the holistic philosophy of nursing and midwifery. According to Finlay and Gough (2003:79), qualitative approaches regard the use of a subjective approach as a necessity for understanding lived experiences and people.

Acknowledging the discussions thus far, dependence on either qualitative or quantitative research would be inappropriate in the quest to understand the competencies of midwives during the provision of PNC in Swaziland. Each paradigm has its own strengths and weaknesses. In combining the two paradigms, the researcher intends to maximise on the strengths of each paradigm and also hopes that the weaknesses of one will be made up for by the strengths of the other. Hence, articles on data quality and IPMS from both paradigms, qualitative and quantitative, were employed or used in this study. Added to this, a focus question was developed to enable the researcher to refine the literature search strategy.

### **2.3 FOCUS QUESTION**

Burns and Grove (2013:53) refer to a focus question as a statement that offers the precise query a researcher wants to answer with the view of tackling a research problem. It is therefore important to have a clearly defined focus question at the outset of any research study or a project of this nature. It is believed that doing so would allow researchers to make important decisions and to attain best outcomes (Caldwell, Henshaw & Taylor 2005:17). A number of researchers have acknowledged the view that formulating a focus question is not a simple task (Booth 2004). Thus, people new to research, would require assistance in developing focus questions. One framework that



is commonly used to assist in such circumstances is the Patient Population Problem, Intervention, Comparison and Outcome, postulated by Schardt, Adams, Owens, Keitz and Fontelo (2007:16). Although this model has been noted to be useful in some subject areas, it is considered ineffective in generating the focus question of the literature of this study, which focuses on investigating competencies of midwives in Swaziland. Consequently, an alternative structure, such as the framework by Kumar (2005), was examined to identify its suitability in formulating the focus question of the literature of this research study.

The framework by Kumar (2005) was considered appropriate and effective for eliciting the focus questions for the literature of a project of this nature. This assertion is a function of the view that it is easily adaptable and easy to use. It is stressed in this framework that questions should be formulated using the four Ps; People, Problem, Program and Phenomenon. Using this structure together with questions that starts with the five Ws, why, what, when, who and where, postulated by Brink and Wood (1994:57) and those which starts with How, resulted in the formulation of the focus question of this literature review. It reads: What competencies do midwives require to provide quality PNC globally? This question will ensure the development of a comprehensive insight into this subject area. The formulated research question guided the search strategy

## **2.4 SEARCH STRATEGY**

To ensure that this literature review explored the subject in a sound, inclusive and a reproducible manner, a systematic approach was undertaken to thoroughly search and explore all the sources of literature. Initially, the University of South Africa library was used to search for books and journals that have information on PNC. The electronic databases, like the Cochrane database, OVID, Medical Literature Analysis and Retrieval System Online and HINARI were also used to offer a wider range of literature sources. A number of words and phrases were used as search terms. Examples of these include postnatal care in Swaziland, HIV-exposed infants, HIV-positive, immediate postnatal care, midwives, newborns, postnatal mothers, and senior midwives. Each of the search terms were initially used individually, and then combined using Boolean operators AND and OR. Specific Internet websites were searched, and examples of these include the Joint United Nations Programme on HIV/AIDS (UNAIDS),

the WHO, UNFPA, ICM, UNICEF and EGPAF. Identified literature sources were analysed.

### 2.5 APPRAISAL OF IDENTIFIED STUDIES

All the papers or literature sources identified and selected were examined. The process of reviewing each study was based on established and validated models of appraisal, such as those offered by Depoy and Gitlin (1994:220), Polit and Beck (2004:342) and Lincoln (1994:132). The decision to use a combination of frameworks is in keeping with guidance from Silverman (2004:234). He stipulated that a mixture of appraisal frameworks must be used for appraising qualitative and quantitative research sources, as these literature sources are inherently different in terms of the quality of evidence they offer. In essence, the review of individual studies was weighted on the knowledge contribution made to current understanding of PNC. To be more specific, the studies were evaluated in terms of their rigour, validity, reliability, and trustworthiness to the practice context (Polit & Beck 2008:232). Further attention was given to the handling of data within each of the reviewed sources, including how well researchers addressed potential limitations of their studies. The analytical stages of the papers from reading to theme formation are illustrated in figure 2.1.

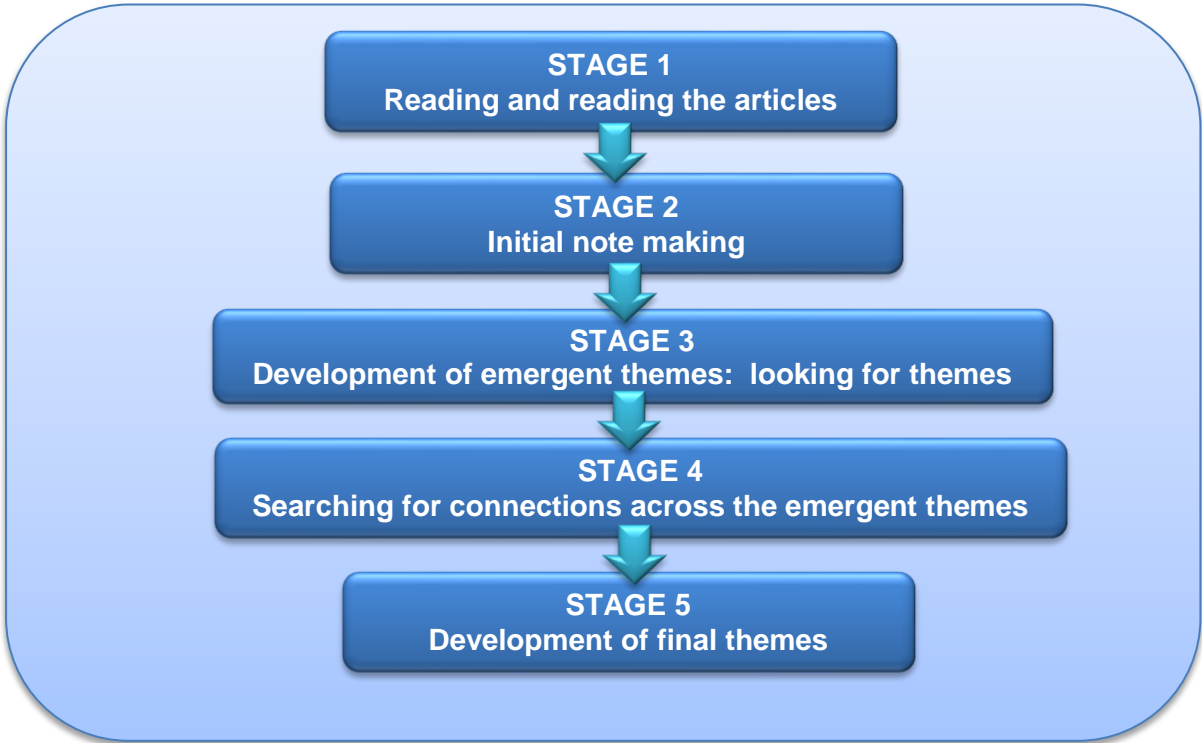


Figure 2.1: Analytical steps of articles from reading to theme formation

## **2.6 EMERGENT THEMES**

An analysis of the literature retrieved from the varied sources resulted in the development of the following themes and sub-themes. They are discussed in the order presented.

- continuum of care from pregnancy to motherhood
- content of PNC
- postnatal coverage and trends
- essential midwives' competencies for immediate PNC
- latest international evidence-based guidelines in PNC
- current developments in PNC
- factors affecting quality PNC, namely:
  - human resources
  - material resources
  - organisational resources
  - socio-cultural issues related to HIV

## **2.7 CONTINUUM OF CARE FROM PREGNANCY TO MOTHERHOOD**

Pregnant women go through different phases when receiving healthcare. These phases range from antenatal period through the intra-partum (labour and delivery) to the postnatal period. According to Warren (2015:13), the phases enable midwives to address problems (such as pregnancy induced hypertension) that might arise during pregnancy, labour, delivery, and after childbirth. According to Warren (2015:13), the midwives in Swaziland tend to focus on intra-partum period, and such a stance obscures the need for immediate PNC. The risks of maternal and neonatal morbidity and mortality are very high during the PNC period (Warren 2015:14). This is supported by Aryal et al (2013:1) who stated that most of the maternal deaths (60%) occur during the postnatal period. It is for this reason that the WHO (2014:5) stipulates for PNC to be an integral part of the maternal-child health continuum of care.

The maternal–child health continuum of care requires midwives to offer care to clients from pregnancy through labour to childbirth (Warren 2015:14, WHO 2014:5). The

intention here is to ensure that clients (mothers) and their infants are offered consistent care and support, particularly during the high-risk immediate PNC period (WHO 2014:5). Apparently, this is not the case, as midwives tend to focus their efforts of care provision on the antenatal and intra-partum periods (Warren 2015:13–16, WHO 2014:5–6). This suggests that the majority of mothers and newborns do not receive optimal care during the immediate PNC period (WHO 2014:1). This is evident in developing countries, where 99% of maternal and neonatal deaths occur during the immediate PNC period (WHO, UNICEF, UNFPA, WB & UNPD 2014:21).

The immediate PNC period poses a substantial risk to the health of mothers and their infants. Thus, mothers need adequate information and counselling on a wide range of health issues, such as danger signs, infant feeding and family planning to enable them to make appropriate health-seeking behaviour decisions (WHO 2014:7). It is therefore necessary for the provision of such information and counselling to be informed by comprehensive assessments to ensure that health-seeking behaviour decisions during the immediate PNC period are tailor-made to fit individual clients' needs.

According to the WHO (2014:10–19), individualising care during the PNC period would ensure that mothers and infants are adequately cared for that in turn might result in reduced maternal and infant morbidity and mortality. Thus, it is vital for immediate PNC to include a detailed and holistic approach to assessment, including physical examinations; as such an approach may help alleviate maternal and newborn complications. Hence, as part of the continuum of care, WHO (2014:1–15) requires care provision during immediate PNC period to include breast examination (for signs of mastitis), assessment of extent of bleeding, maternal and infant vital signs assessment, education on umbilical cord care, and provision of information on maternal and newborn dangers signs and personal hygiene. The WHO (2014:1–4). adds that counselling is required during the immediate PNC period to address or covers areas, such as family planning, breastfeeding and nutrition.

Brody, Bellows, Campbell and Potts (2013:371) state that clear guidelines are needed to ensure consistency in the provision of quality PNC. In 2013, the WHO developed guidelines for PNC (WHO 2014:1–15). These guidelines include the basic care that midwives are required to offer to mothers and newborns. For example mothers and neonates are to be assessed and monitored immediately after birth (within the first 30

minutes), 1 hour after delivery, and then 6-hourly until discharged from the postnatal ward. Mothers and newborns are also required to stay in hospital for at least the first 24 hours after delivery, as this is a high-risk period for maternal and neonatal deaths.

Postnatal visits are to be systematically scheduled. The first visits are to be made within 3–7 days after birth, then at 6 weeks, and 10 weeks. This is to ensure that mothers and neonates are adequately cared, and prevent maternal and neonatal complications. Globally, implementation of the PNC guidelines has prevented millions of maternal and infant deaths (WHO, UNICEF, UNFPA, WB & UNPD 2014:21). This is because they offer guidance to midwives and other healthcare professionals on how to improve the health of mothers and infants. The Ministry of Health of the Kingdom of Swaziland suggested additional interventions to improve the well-being of mothers and infants during the postpartum period. Examples of these interventions include physical examination, provision of ARV drugs, infant feeding counselling, family planning, and prophylactic treatments (KoS, MoH 2010a:39).

## **2.8 POSTNATAL CARE COVERAGE AND TRENDS**

Every day, approximately 800 women die from preventable causes related to pregnancy and childbirth in the world (WHO 2013b). The majority (99%) of these deaths occur in developing countries (WHO, UNICEF, UNFPA, WB & UNPD 2014:21). The sub-Saharan Africa region alone accounts for 62% of maternal deaths (WHO, UNICEF, UNFPA, WB & UNPD, 2014:21). The majority (60%) of these deaths occur during the postpartum period (Aryal et al 2013:1, Ziyane & Thwala 2010:16). This means that the postnatal period poses substantial health risks for mothers and infants. Yet, literature reveals that the postnatal period has received less attention from midwives than pregnancy and childbirth (WHO 2014:1). Added to this, some countries, such as Swaziland and Lesotho, do not have strategies, guidelines and policies that focus on postnatal care (WHO 2010b:7). Hence, it is not surprising to note in these countries high infant and maternal morbidity and mortality ratios.

Sub-Saharan Africa bears the brunt of the HIV and AIDS burden of the world (UNAIDS 2014:26). This region, which makes 9% of the world population, but it carries 71% of the total HIV burden of the world (UNAIDS 2014:26). Women of childbearing age are the most affected, and they account for 40% of people living with HIV globally (UNAIDS

2014:26). HIV is the major contributing factor for maternal deaths in developing countries (WHO 2013b). Hence, there is an urgent need to prioritise all interventions targeting HIV and AIDS during pregnancy, childbirth and postpartum in these countries. Added to this, all HIV programmes targeting infants and mothers should no longer be stand-alone activities, but they should be integrated with maternal, newborn, child and adolescent health services (UNFPA, WHO & IPPF 2012). Doing so would not only enable clients to receive healthcare services in one setting or programme, but would also ensure consistency and quality care provisions (UNFPA, WHO, IPPF 2012).

There is growing evidence that the integration of PMTCT and maternal, newborn, child and adolescent health programmes tends to focus on HIV with little attention given to the immediate postnatal period (Mazia, Narayan, Warren, Mahdi, Chibuye, Walligo, Mabuza, Shongwe & Hainsworth 2009:254). This is a concern as such limited attention to immediate PNC could contribute to the high maternal and infant mortality ratios. Table 2.2 compares the maternal death burden across the United Nations (UN) MDGs regions. This table confirms that sub-Saharan Africa is not a safe place for pregnant women.

**Table 2.1: Estimates of MMR, number of maternal deaths, and maternal deaths attributed to HIV by the UN MDG region**

Region	MMR	Number of maternal deaths	HIV-attributed MMR	Number of AIDS-related indirect maternal deaths attributed to HIV	% AIDS-related indirect maternal deaths
World	210	289 000	5	7500	2.6
Developed regions	16	2300	0	65	2.8
Developing regions	230	286 000	6	7400	2.6
Northern Africa	69	2700	0	9	0.3
Sub-Saharan Africa	510	179 000	19	6800	3.8
Eastern Asia	33	6400	0	44	0.7
Eastern Asia excluding China	54	480	0	1	0.2
Southern Asia	190	69 000	1	340	0.5

Region	MMR	Number of maternal deaths	HIV-attributed MMR	Number of AIDS-related indirect maternal deaths attributed to HIV	% AIDS-related indirect maternal deaths
Southern Asia excluding India	170	19 000	0	20	0.1
South-eastern Asia	140	16 000	1	110	0.7
Western Asia	74	3600	0	3	0.1
Caucasus and Central Asia	39	690	0	7	0.9
Latin America and the Caribbean	85	9300	1	130	1.4
Latin America	77	7900	1	92	1.2
Caribbean	190	1400	5	39	2.8
Oceania	190	510	2	5	0.9

(WHO, UNICEF, UNFPA, WB & UNPD 2014:11)

In Ethiopia, maternal and neonatal deaths are as high as 45–50% during the first 24 hours after birth (Federal Democratic Republic of Ethiopia MoH 2010:2). Surprisingly, there are no clear guidelines and strategies to address this problem in Ethiopia (Federal Democratic Republic of Ethiopia MoH 2010:2). This is the case for a number of developing countries, such as Swaziland. As such, mothers and their infants continue to die from known, preventable, and medically manageable causes, such as hypertension and sepsis (WHO 2013b:7). The major global causes of maternal deaths during the immediate PNC period include postpartum haemorrhage (27.1%), sepsis (10.7%), hypertension disorders (pre-eclampsia and eclampsia) (14%), abortion (7.9%) and embolism (3.2%) (Say et al 2014:e327). In contrast, the major causes of neonatal deaths include sepsis or pneumonia (28%), preterm birth complications (35%), intrapartum-related complications (28%) (Wardlaw, You, Hug, Amouzou & Newby 2014: 2).

Early detection of these clinical conditions and medical management could prevent or avert millions of maternal and neonatal deaths (WHO & UNICEF 2010:11). It is therefore essential to identify these conditions as early as possible to save maternal and neonatal lives. One approach that could help to address this concern is the implementation of evidence-based guidelines and frameworks for delivering quality immediate PNC services (WHO 2014:3). Doing this might not only help in improving the

monitoring and evaluation of the quality of immediate PNC, but it could also ensure provision in the sub-Saharan African region of quality PNC services that are evidence-based (WHO 2014:2-3). The provision of quality PNC services will help in the effort to reduce maternal and infant mortality rates in this region. Providing quality PNC during the first 24 hours after delivery could improve maternal and infant survival (WHO 2014:7). This is because quality care provision during the first 24 hours after delivery would enable mothers to establish and maintain contact with a number of healthcare professionals needed during this vital period.

Quality immediate PNC depends on the quality of the midwives providing the service (UNFPA, ICM & WHO 2014:2-3). The ICM (2013:1) states that midwives are trained professionals commissioned to provide comprehensive and quality immediate PNC for mothers and their infants. It is therefore essential for midwives to render quality immediate PNC services to all mothers and their infants. Taking this into account, the postnatal situation in Swaziland deserves some degree of discussion.

Swaziland has about 88% institutional deliveries and skilled birth attendance of about 88% (KoS, CSO 2015a:11); however the MMR is still high at 593 per 100 000 live births (KoS, CSO 2015b:13). This situation is a cause for concern. This might indicate poor quality of PNC, as about 60% of maternal deaths occur during the postpartum period (Ziyane & Thwala 2010:16). Comparing the Swaziland statistics with other regional countries like Namibia, a country with 74% skilled birth attendance and 80% institutional deliveries (UNICEF 2012), but with a low MMR (130 per 100 000 live births) (WHO, UNICEF, UNFPA, WB & UNPD 2014:21) indicates a challenge for the manner and the provision of quality of obstetric care in Swaziland. Table 2.2 shows the country estimates of MMR (maternal deaths per 100 000 live births), number of maternal deaths, lifetime risk and percentage of AIDS-related indirect maternal deaths in 2013.



**Table 2.2: Country estimates of MMR (maternal deaths per 100 000 live births), number of maternal deaths, lifetime risk and percentage of AIDS-related indirect maternal deaths in 2013 (WHO, UNICEF, UNFPA, WB & UNPD 2014:13)**

Region	MMR	Range of MMR uncertainty		Number of deaths	Lifetime risk of maternal deaths, 1 in:	% of AIDS related indirect maternal deaths
		Lower estimate	Upper estimate			
Lesotho	490	300	770	280	64	14.8
Botswana	170	110	280	83	200	23.5
Namibia	130	84	220	81	230	13.9
South Africa	140	85	210	1 500	300	41.4
Zambia	280	170	460	1 800	59	15.4
Swaziland	310	170	560	120	94	18.6

Considering the high hospital delivery rate and skilled birth attendants in Swaziland, one does not expect such a high MMR in Swaziland. This is an indication that midwives are not offering quality PNC services to mothers and infants (KoS, MoH 2011a:9). In a quantitative descriptive, cross-sectional study conducted in Swaziland in 2013 involving 372 mothers during a 6-week PNC visit, only 44.9% (n=167) of mothers had their temperature measured, 26.6% (n=99) had their pulse rate measured, and about half 53.2% (n=198) were physically assessed following childbirth by midwives (Dlamini 2013:78–80). These findings indicate poor PNC services offered to postnatal mothers in Swaziland. The poor PNC revealed could be a reflection of PNC services in other countries in the sub-Saharan Africa region (WHO 2014:1). This provoked the present research to question the competency of midwives during the provision of PNC in Swaziland.

Infant mortality is another global tragedy. UNICEF (2013:4) reports that 6.6 million under-five deaths occurred in the world in 2013, 44% of these deaths in children under 5 occurred during the neonatal period. Most of the neonatal deaths occur in sub-Saharan Africa, where the quality of immediate PNC is poor (Warren, Daly, Toure &

Mongi 2006:77). It is worrying to note that the postnatal period is the most neglected area of reproductive health in Africa despite the high infant and maternal mortality ratio during this period (WHO 2014:1). According to Warren et al (2006:79), about 125 000 women and 870 000 newborn babies die during the first week after birth in sub-Saharan Africa every year. The contributing factors for these maternal and neonatal deaths include poor PNC, cultural beliefs and regular care-seeking from traditional practitioners (Ojua, Ishor & Ndom 2013:177–180). Frequent visits to traditional practitioners for advice and care deter mothers from seeking professional healthcare during the postnatal period (Ziyane & Thwala 2010:16). This is a concern as mothers and infants tend to die during the postnatal period (Kos, MoH 2011a:1–3, WHO 2014:1–3). What is therefore needed is to promote effective utilisation of PNC services through the development of guidelines and policies in consultation with communities. Doing so would ensure consistent and correct implementation of PNC, which in turn would reduce infant and MMRs. However, most countries in sub-Saharan Africa do not have indicators for monitoring and evaluating the effectiveness of PNC services (Warren et al 2006:86).

Progress in reducing newborn deaths has been much slower as compared to the reduction of maternal deaths (UNICEF 2013:2–3). The majority of neonatal deaths can and must be prevented by increasing coverage of known, affordable and effective immediate newborn care services (WHO & UNICEF 2014:1–5). According to the WHO and UNICEF (2010:11), about 29% of all child deaths in Africa occur in the neonatal period; and more than 49% of deaths after the neonatal period are due to pneumonia, diarrhoea or malaria. This indicates that provision of quality immediate PNC interventions could save millions of infants in developing countries. On the other hand, globally, haemorrhage (27.1%), sepsis (10.7%), hypertension disorders (14%) and abortion (7.9%) account for more than half of maternal deaths, whilst indirect causes (malaria, HIV/AIDS and cardiac diseases) account for about one fifth of maternal deaths (Say et al 2014:e327). The majority of maternal deaths occur in sub-Saharan Africa and South Asia (WHO, UNICEF, UNFPA, WB & UNPD 2014:13). The same is true for Swaziland regarding maternal deaths, where haemorrhage and hypertension are the leading causes for maternal deaths (KoS, MoH 2011a:11). Of note is that 60% of maternal deaths occur during the immediate postnatal period and provision of quality care during this period could avert millions of deaths (Kinney, Kerber, Black, Cohen, Nkrumah, Coovadia, Nampala & Lawn 2010:e1000294).

The discussion thus far indicates there is knowledge, understanding and adequate medical resources to prevent or at least reduce maternal and infant mortalities. Repositioning immediate PNC has the potential of reducing maternal and neonatal mortality. The presence and availability of PNC guidelines that could outline the content and timing of postpartum and or postnatal contacts and care for the woman and her baby; as well as best healthcare practices and information and competencies for assessment of postpartum mothers and their infants and management of postnatal problems in the women and their infants, may lead to a reduction in maternal and infant deaths.

## **2.9 ESSENTIAL MIDWIVES' COMPETENCIES FOR IMMEDIATE POSTNATAL CARE**

According to ICM (2011:1), “a midwife is a person who has successfully completed a midwifery education programme that is duly recognized in the country where it is located and that is based on the ICM Essential Competencies for Basic Midwifery Practice and the framework of the ICM Global Standards for Midwifery Education. A midwife is a person who has acquired the requisite qualifications to be registered and /or legally licensed to practice midwifery and use the title ‘midwife’; and demonstrates competency in the practice of midwifery.”

Skilled birth attendance during pregnancy, intrapartum and postpartum – is a promising strategy to reduce maternal and infant mortality ratios (UNFPA, ICM & WHO 2014:1–5). Increasing the number of skilled birth attendants is an investment that governments need to undertake to reduce maternal and infant mortalities, and many governments (such as Ethiopia, Nepal and Malawi) are now making attempts to improve the staff level of midwives in health facilities. The provision of quality midwifery care is an important component of maternal and infant death reduction strategies. Hence, midwives are required to have the necessary competencies for the management of pregnancy, labour and birth, including the postnatal period (ICM 2011:1–19, UNFPA, ICM & WHO 2014:1–3). Obtaining the right competencies will enable this professional group to competently handle any obstetric complications that may arise during the phases pregnant women go through (ICM 2011:1–11). The right competencies can be acquired through competence-based curricula (ICM 2011:1). As a result, it is important

that midwifery training programmes are delivered using competence-based curricula to promote critical thinking and acquisition of adequate clinical skills, knowledge and attitudes (KoS, MOH 2011b:37). This is apparently the case in Swaziland, and the government of this state also ensure that midwives regularly keep their skills updated to offer quality and safe obstetric care (KoS, MoH 2011b:34).

The ICM (2013:1–19) has clearly defined the essential competencies for midwifery. These are the knowledge and skills that midwives are required to have in order to provide quality care to women during every phase of the reproductive cycle. These competencies set the standards, scope and practices of midwives (ICM 2011:1–19). Midwives are trained to offer effective care based on the most up-to-date evidence (ICM 2011:2). Midwifery practice combines both science and art (ICM 2011:1). As such, didactic learning alone cannot generate clinical expertise in midwives. According to Narchi (2011:24), these professionals should base their practices on scientific knowledge and latest evidence. Considering the focus of the study – PNC during the immediate postnatal period, only those ICM competencies that are related to the immediate postnatal period are outlined here.

The ICM (2013:2–18) states that midwives are required to have the requisite knowledge and skills of obstetrics, neonatology, the social sciences, public health and ethics that form the basis of quality, culturally relevant, and appropriate care for women and newborns. Midwives are also required to provide quality, culturally sensitive health education and services to all in the community in order to promote a healthy family life, planned pregnancies and positive parenting. These professionals provide comprehensive, high-quality, culturally sensitive postpartum care for women as well as high-quality and comprehensive care for newborns from birth to at least two months of age (ICM 2011:11). Examples of skills midwives require to achieve this include principles of newborn adaptation to extra-uterine life (e.g. physiological changes that occur in pulmonary and cardiac systems) as well as the basic needs of newborns (established breathing, warmth, nutrition).

Midwives should have the necessary knowledge and skills to provide quality care services during the postnatal period, including to HIV-positive mothers and HIV-exposed infants. Given that most (60%) maternal and infant mortalities occur during the postnatal period (Say et al 2014:e327), clinicians, academics and researchers are repeatedly

making requests for the provision of quality care during the postpartum period (WHO & UNICEF 2014:10–11). The basis of quality PNC is enshrined in the competencies for midwives (ICM 2011:1–19). These competencies include knowledge of community and social determinants of health; direct and indirect causes of maternal and neonatal mortality and morbidity in communities and strategies for reducing them; indicators of quality healthcare services and national and local health services; infrastructures supporting the continuum of care (organisation and referral systems); and ways to access needed resources for midwifery care (ICM 2011:11–14).

The knowledge that midwives acquire during their training equips them to handle and manage mothers and infants well during the immediate PNC period (KoS, MoH 2011b:33–32). Hence, midwives are required to have knowledge and understanding of the physiological changes and needs of mothers and infants during the PNC period (ICM 2011:11). These may include the process of involution, lactation, the importance of early breastfeeding, signs and symptoms of life-threatening conditions that may arise during the postpartum period (e.g. persistent vaginal bleeding, postpartum pre-eclampsia and eclampsia and sepsis) (Say et al 2014:e327). Midwives are required to be well versed with assessment of newborns using, for example, the APGAR scoring system (ICM 2013:16–17).

They are also required to possess specific abilities (essential competencies) to provide comprehensive PNC to mothers and their babies. Examples of these include the ability to

- engage in health education discussions with women and their families
- use appropriate communication and listening skills across all domains of competency
- take selective history
- perform physical examinations of mothers and the babies
- provide immediate care to the newborn, including drying, warming, ensuring that breathing is established, and counselling mothers about maternal and newborn danger signs (ICM 2013:1–19)

The question now arises, how best midwives adhere to the outlined competencies? Narchi (2011:23–29) studied the implementation of essential competencies for

midwifery care by midwives. The results showed the participants (midwives) who provided care to women during pregnancy, labour, childbirth and postnatal period did not put the essential competencies of midwifery care into practice. This was attributed to institutional barriers and personal resistance and lack of best practice evidence-based protocols. The study by Narchi (2011:23–29) influenced the present researcher to include assessment of human, material and organisational resources the study to investigate the competencies of midwives during the provision of immediate PNC in Swaziland.

## **2.10 EVIDENCE-BASED GUIDELINES IN POSTNATAL CARE**

The WHO (2014:1–67) published guidelines or recommendations for postpartum care of mothers and newborns in 2013. The published guidelines are improved versions of those published in 1998 (WHO 2014:1–2). The new recommendations are based on the best available evidence and the consensus of experts in the field of midwifery (WHO 2014:1–2). The publication of the 2013 recommendations was necessitated by the weaknesses of the 1998 guidelines. According to the WHO (2014:1–3), the 1998 guidelines were weak in a number of areas; for example, they contained little information on HIV infection (WHO 2014:1–3). This was because more evidence and public health challenges related to HIV arose after the development of the 1998 PNC guidance (WHO 2014:2). The public health challenges called for the guidelines to be updated to reflect current practices (WHO 2014:1–67). The first update was in 2003, and then in 2013. The 2013 guidelines are the most recent and they were developed by a diverse technical working group convened by the WHO (WHO 2014:1). The Guidelines Development Group, in collaboration with other international best practice guidelines developers (such as NICE and RAO,) for postnatal care, reviewed best practices, supporting evidence, and literature sources pertaining to PNC. The outcomes of the review were 12 recommendations as outlined by the WHO (2014:3–5):

### *Recommendation 1: Timing of discharge from a health facility after birth*

Mothers with normal vaginal deliveries with no obstetric complications that take place in health facilities are to be encouraged to stay in the health facilities for at least 24 hours after delivery. This is not only to ensure that mothers and newborns receive quality

immediate postnatal care, but also to ensure early identification and management of postpartum complications if indicated (WHO 2014:3–5).

*Recommendation 2: Number and timing of postnatal contacts*

Mothers and newborns are to be cared for during the postnatal period in health facilities by skilled attendants for at least 24 hours after childbirth. However, in instances where deliveries occur at the mothers' homes, the first postnatal contacts or visits by skilled attendants are to be made within 24 hours after delivery. Three additional visits to mothers and newborns by skilled attendants are recommended. The first additional visits are to be made within 2–3 days after birth, then on the 7th day, and 14th day. These visits will ensure effective monitoring of mothers and newborns, and they may promote utilisation of postnatal care services and prevent the development of maternal and neonatal complications (WHO 2014:3–5).

*Recommendation 3: Home visits for postnatal care*

Home visits by skilled attendants (midwives), particularly during the first week after childbirth are to be encouraged. Home visits will not only help in monitoring the mother and infant's well-being; it will also provide an opportunity for providing other key interventions (like personal hygiene, identification of signs and symptoms of life-threatening conditions, and promotion of adherence to treatment and counselling on dangers) (WHO 2014:3–5).

*Recommendation 4: Assessment of the baby*

Skilled attendants (like midwives) are to promote survival and adaptation of neonates to the extra-uterine life. Midwives are required to offer timely interventions to newborns, such as assessment of vital signs, immunisation and provision of prophylaxis. The intention of this approach is to prevent or at least minimise neonatal morbidity and mortality (WHO 2014:3–5).

### *Recommendation 5: Exclusive breastfeeding*

Babies are to be exclusively breastfed from birth to at least 6 months of age. Midwives are required to support exclusive breastfeeding as a nutritional intervention at each postnatal contact, especially among HIV-infected mothers as a strategy to minimise mother-to-child transmission of HIV. Midwives are therefore required to counsel women on these practices regardless of the mothers' HIV status (ICM 2013:16–18; KoS, MoH 2010a:34–35).

### *Recommendation 6: Cord care*

Midwives are to care for cord stumps. Caring for the cord stump could help in the early identification of bleeding stumps, and prevention of infections, which might result in undesired consequences, including death. Therefore, daily application of chlorhexidine (7.1% chlorhexidine digluconate aqueous solution or gel, delivering 4% chlorhexidine) to the umbilical cord is recommended for new born babies. The use of chlorhexidine is highly recommended to replace application of harmful traditional substances, such as cow dung, to the cord stump (WHO 2014:3–5).

### *Recommendation 7: Other postnatal care for the newborn*

Bathing of newborns is to be delayed by at least six hours after childbirth, and the newborns are to be kept warm to maintain the ambient temperature using appropriate clothing. It is also recommended that the mother and baby may not be separated; they are to be kept in the same room. During this period, midwives and other skilled birth attendants are required to offer counselling services to mothers on key postnatal health issues, such as immunisations, ARV prophylaxis and treatment (WHO 2014:3–5).

### *Recommendation 8: Assessment of the mother*

It was recommended that skilled attendants conduct comprehensive assessments of the mother, which may include uterine contraction, signs for vaginal bleeding, fundal height, including signs and symptoms of domestic abuse at each postnatal contact. Referral for support is to be made if domestic violence is indicated. This is because the immediate postnatal period is a period for recuperation, adaptation to the environment and bonding



mothers and babies (London, Ladewig, Ball & Bindler 2007:473). It is therefore important to render quality care to both mothers and babies.

#### *Recommendation 9: Counselling*

It was recommended that mothers be counselled on each of the postnatal visits, and such counselling is to focus on infant feeding, danger signs and personal hygiene. In addition, postnatal mothers are to be educated on nutrition as well as family planning. This is because quality postnatal care is dependent upon the provision of relevant health information to the mother, in a way that she would understand the health messages communicated to her (ICM 2013:13–18). Arguably, health education is an integral part of postnatal care. Thus, the provision of comprehensive information on the physiological process to mothers during the postnatal period is necessary (NICE 2014:3–8).

#### *Recommendation 10: Iron and folic acid supplementation*

The HIV-positive mothers are to be provided with iron and folic acid supplementation for at least three months during the postnatal period. This is because food supplements, like iron and folic acid are effective components for the health and survival of both mothers and children, as they enhance resistance to diseases (WHO 2014:18–19). In other words, the provision of iron and folic supplementation to HIV-positive mothers could promote the health of the mother and the baby, and prevent the development of opportunistic infections.

#### *Recommendation 11: Prophylactic antibiotics*

The use of antibiotics among women with a vaginal delivery and a third- or fourth-degree perineal tear is recommended, particularly for HIV-positive mothers (KoS, MoH 2010a:34). Such an approach could prevent sepsis. In addition to antibiotic prophylaxis, HIV-infected mothers are to be provided with ARV treatment as per the national guidelines in order to promote health and prevent MTCT of HIV. In 2009 alone, an estimated 107 000 cases of paediatric HIV infection were averted through PMTCT of HIV services (EGPAF 2011:1).

## *Recommendation 12: Psychosocial support*

Psychosocial support for mothers in the postnatal period is recommended to prevent the development of postpartum depression and/or postpartum psychosis. Midwives and other health professionals are required to create an opportunity for women to discuss their birth experience during their hospital stay, and to refer for psychological support if difficulties are identified.

The listed recommendations or guidelines are part of a global effort to reduce maternal and infant mortality (WHO 2014:3). The guidelines are prescriptions of how midwives and other professionals are expected to care for mothers and infants across the maternal and child health continuum (National Institute for Health and Care Excellence (NICE) 2014:1–22; WHO 2014:1–67). They informed the development of the data collection tools used in this study to investigate the competencies of Swazi midwives during the provision of immediate PNC to HIV-infected mothers and their HIV-exposed newborns.

### **2.11 DOES SWAZILAND HAVE POSTNATAL CARE GUIDELINES? A SYSTEMATIC REVIEW**

According to the NICE (2014:1), guidelines are systematically developed to prescribe what is required of midwives and other professionals in the provision of care and treatment to mothers and their newborns. Thus, midwives are expected to consider guidelines when exercising their professional judgement. Given that the majority of maternal and neonatal deaths occur in the postpartum period (Hussein et al 2011:e19898), it is necessary for countries to have postnatal guidelines if they intend to prevent or at least reduce maternal and infant mortality and morbidity. However, it must be stated that guidelines are not expected to override the responsibility of healthcare professionals in making decisions appropriate to the circumstances of postnatal mothers and newborns, but they are rather expected to aid the decision making processes. Although most mothers and their babies do not experience complications during the postnatal period, care during this period is still vital to address any complication that may arise (ICM 2013:13–18; WHO 2014:1–2). Hence, each country needs clinical guidelines, such as those related to postnatal care (NICE 2014:1). Yet, anecdotal evidence reveals that the Kingdom of Swaziland does not have postnatal

care guidelines (Kos, MoH 2010a:34). It was therefore, decided to conduct a systematic review during this study to confirm or disconfirm this evidence.

Documents which addressed maternal mortality were identified, and a content review was undertaken. The main sources considered in the document search were national maternal newborn and child health, and sexual reproductive health. The Sexual Reproductive Health policy, Integrated Sexual Reproductive Health Strategy, PMTCT guidelines and Obstetric Guidelines were manually searched. An internet search, using key words, such as postnatal care, obstetric care, maternal newborn care and Swaziland, was made to identify relevant and accessible publications. References of available articles were also used to identify other possible publications. A thorough review of the identified documents was made following an initial assessment of their titles and abstracts or summaries. The available data were captured using hand notes. The main variables collected were maternal PNC, newborn and infant care during the postpartum period, counselling on maternal and infant danger signs as well as breastfeeding. The results of this review showed that Swaziland does not have postnatal guidelines. However, the PMTCT guidelines provided some guidance on PNC for mothers and their infants. But the guidance provided in the PMTCT guidelines is skewed towards HIV (KoS MoH 2010a:34–39). Thus, there is a need for the Kingdom of Swaziland to adapt evidence-based guidelines that focused specifically on PNC. The lack of postnatal care guidelines in Swaziland might be the reason for its high MMR (593 per 100 000 live births) (KoS, CSO 2015b:11).

Nepal adapted and safely implemented evidence-based PNC guidelines, and this resulted in a significant reduction in its MMR (WHO 2014:1–67). Acknowledging this, the Kingdom of Swaziland could achieve a similar reduction in its MMR if it were to adopt and implement evidence-based PNC guidelines.

## **2.12 CURRENT DEVELOPMENTS IN POSTNATAL CARE**

There is a consensus among a range of bodies, such as the WHO, UNFPA, International Planned Parenthood Federation (IPPF) and UNAIDS (2005:11) that HIV and sexual reproductive health (SRH) are closely related or linked. Such a consensus is a function of the view that the majority of HIV infections are sexually transmitted or related to pregnancy, childbirth and breastfeeding. It is for this reason that the

international community claims that the MDGs can only be achieved if universal access to SRH and HIV care are promoted (UNFPA, WHO & IPPF 2012:1). The latter requires linkages at policy level, strengthening of health systems and provision of access to comprehensive and integrated SRH and HIV services (UNFPA, WHO & IPPF 2012:1). The benefits of integrating or linking SRH and HIV are wide ranging, and examples of these include improved access to and uptake of HIV and SRH services; improved coverage of underserved, vulnerable and key populations; improved quality care and decreased duplication of efforts; and better utilisation of scarce resources for health.

The provision of integrated SRH and HIV services could have an important influence on maternal, newborn and child health interventions as it can improve efficiencies, and reduce duplication of efforts (Bhutta, Cabral, Chan & Keenan 2012:S13). Thus, the integration of these services has been widely promoted, particularly in resource-poor countries because of its potential to increase uptake of SRH and HIV services (Warren 2015:19). It is for this reason that a number of developing countries, such as Botswana, South Africa, and Swaziland are integrating SRH and HIV services (IPPF, UNFPA & WHO 2014:6–7). Taking the Kingdom of Swaziland as an example, one major success of such integration is the linkage of PMTCT of HIV programmes into SRH services (KoS, MoH 2010a:1–10).

Mazia et al (2009:253) conducted a study on an integrated PNC and PMTCT programme. They investigated the quality of PNC for women and their infants who used the integrated programme. The results indicate a 20-fold increase in the number of early postnatal visits (within the first three days after birth) as well as a significant increase in the competence of health workers related to postnatal examinations and the general care of mothers and babies. The percentage of women breastfeeding within one hour of delivery increased by 41% in HIV-positive mothers, while co-trimoxazole prophylaxis for HIV-exposed infants increased by 24%. These outcomes enabled the present researcher to examine the competencies of midwives during the provision of immediate PNC to mothers and their infants in Swaziland.

Lemly, Mandelbrot, Meier, Firtion, Matheron, Jeantils and Scott (2007:346) examined factors related to attendance and adherence to medical appointments after childbirth among HIV-infected women in France. The study took the form of an observational cohort in four hospitals in Paris. The strength of the study was its ability to record

people's behaviour and events directly. In contrast, the vulnerability to prejudices, attitudes and values of the observers were the weakness of the study (Polit & Beck 2008:321). The results showed that 75% had regular attendance, 14% had irregular attendance and 18% had no attendance. The prescription of ARV combination therapy during pregnancy was significantly related to regular postnatal attendance (Lemly et al 2007:346). About 47% of the respondents continued to attend regular paediatric appointments. This means that the provision of ARV medication was a motivating factor for mothers to attend PNC services. This was good as it may result in early identification of maternal and neonatal complications, such as sepsis. Furthermore, the study revealed that communication between the healthcare providers and mothers in the postnatal period gave rise to an increase in postnatal appointment attendance and adherence to appointments. This finding influenced the researcher to include a question on interaction of midwives and mothers during the PNC in the current study.

Warren, Mwangi, Oweya, Kamunya and Koskei (2009:24) assessed changes in the quality of care following the introduction of a new postnatal care programme in Kenya. The study population was healthcare providers and postpartum women. A pre-post intervention cross-sectional design was used to assess changes in the quality of counselling and care following the introduction of the postnatal care programme. Respondents were purposefully selected. Direct observation of client-provider interactions were used to measure the quality of PNC. The results of the study showed an increased mean score for counselling on infant danger signs (0.24–1.39) and infant feeding (1.33–2.19). These findings indicated that a significant number of neonatal deaths were averted because of early identification of danger signs, like infections and fever. The findings also indicated the need for mothers to be educated on these danger signs given newborns sometimes die of the same. The provision of such education will enable mothers to take their babies to a health facility early if they notice any danger signs. The study further showed an increase in the total quality index of PNC for newborns from 3.337 to 6.45 and an increase in maternal index from 3.4 to 8.7 (Warren et al 2009:27). The provision of education to mothers on danger signs could lead to the reduction of maternal deaths by 75% and child mortality by two thirds as stated in the targets of the MDGs (Warren et al 2009:27).

The strengths of the study were that it yielded evidence of multiple predictors and outcomes. The observation directly captured the respondents' behaviours and events.

However, the weaknesses of the study were the high possibility of distorted behaviour of the respondents, and the vulnerability to observer bias. The study findings enabled the researcher of the current study to evaluate the knowledge and practices of midwives during the provision of immediate PNC rendered to mothers and their infants. Moreover, the key indicators for essential newborn care and counselling on maternal health helped the researcher to revise the questionnaires used in the present study.

## **2.13 FACTORS AFFECTING THE QUALITY OF POSTNATAL CARE**

There are numerous of factors that affect the quality of postnatal care. These include human resources, essential materials and organisational structures. These factors are discussed in the subsequent sub-sections.

### **2.13.1 Human resources for health**

The availability of midwives is a precondition for the provision of quality PNC. The presence of skilled birth attendants at childbirth and in the postpartum period is essential for the prevention of possible obstetric complications, particularly during the postnatal period (KoS, MoH 2011a:7; Say et al 2014:e327). It was therefore not a surprise for the State of the World's Midwifery 2014 report to highlight that midwives are the backbone or main healthcare professionals of reproductive healthcare services (UNFPA, ICM & WHO 2014:1–3). Apparently, this is the case for Swaziland; midwives are the largest professional group in the provision of PNC services (KoS, MoH 2011b:12). Thus, continuous professional development of midwives in PNC interventions would enhance the skills and knowledge of this professional group. Enhancing knowledge and skills of this professional group would contribute to the reduction of maternal and neonatal complications (UNFPA, ICM & WHO 2014:1–3).

The Africa Health Workforce Observatory (AHWO) (2009:10) and UNFPA (2009:8) recognise that midwives in Swaziland are the most important healthcare professionals for delivering quality reproductive health services. However, it is evident that midwives are not proportionately allocated according to the needs of the communities, as some communities have been allocated one midwife whilst others may have 10 or more allocated to them (AHWO 2009:11). Such disproportionate allocation of midwives could have a negative effect on the quality of PNC services offered to mothers and infants.

For health facilities with a very low number of midwives, the quality of care is likely to be poor because of the pressure of work associated with the usual large number of clients to be offered PNC services. Hence, there is an urgent need to re-examine the allocation of midwives to health facilities if the country is to reduce infant and maternal deaths. The deployment of midwives formed the basis for inclusion of the assessment of availability of midwives in the data collection tool as it may not be possible to determine the competencies of midwives when they are overburdened with work.

Dogba and Fournier (2009:1482–1486) studied human resources and the quality of emergency obstetric care in developing countries. A systematic review of 250 articles of quantitative and qualitative empirical studies on quality of emergency obstetric care was conducted. The reviewed articles were grouped into three categories: structure, process and outcome. The findings of the study revealed that skilled birth attendance and PNC were part of the strategies at the time of the research to reduce maternal and infant morbidity and mortality, especially among HIV-positive mothers and HIV-exposed infants. The study also highlighted that in 2009, women in Africa were still assisted by traditional birth attendants, with occasional serious negative outcomes, like stillborn, fistula and puerperal sepsis (Ojua et al 2013:177–178). Midwives are expected to have the skills and knowledge to prevent or avert these conditions, as they know the science and interventions to provide during the immediate postnatal period. The study by Dogba and Fournier (2009) provides a good base for the present researcher to compare findings and to comment on the quality of PNC rendered to mothers and infants in Swaziland.

The present study was underpinned by the Quality of Obstetric Care (Morestin et al 2009:1–11). The utilisation of the Quality of Obstetric Care framework was significantly influenced by the findings from the study of Dogba and Fournier's (2009:1482–1486). The findings made by Dogba and Fournier (2009:1482–1486) were divided into a number of thematic categories (such as human resource, material resource and organisational resource), which are reflected in the Quality of Obstetric Care Framework (Morestin et al 2009:1–11). In relation to the human resource category of the study by Dogba and Fournier (2009:1482–1486), the emphasis was on the essential resource for the provision of immediate PNC. Thus, appropriate and proportional allocation of midwives to health facilities, particularly those in the rural areas, is a prerequisite for quality PNC, as these facilities are usually short-staffed.

Another study on human resources and obstetric care was that conducted by Olsen, Ndeki and Norheim (2005:1478) in northern Tanzania. The results revealed a low utilisation of maternal, newborn and child health facilities. The limited utilisation was attributable to mothers' negative perception of the quality of care in health facilities, which was a function of the limited number of midwives in the health facilities studied. This suggests that the availability of midwives in health facilities served as a motivator for mothers to attend PNC services. It is therefore important for the government of the Kingdom of Swaziland to allocate adequate numbers of midwives to health facilities and to prevent attrition of these professionals. To achieve this, the government needs to develop family-friendly human resource policies with the view to inform deployment and allocation guidelines.

The Ministry of Health in Swaziland conducted a service availability mapping study to support decision-making for scaling up and strengthening maternal, newborn and child and adolescent health interventions and services in 2010 (KoS, MoH 2010b:7). This study was conducted in order to provide national and regional planners with an evaluation tool for performance measurement in line with the essential healthcare programme (KoS, MoH 2010b:37). A quantitative cross-sectional design was used in the study. Multistage sampling was done, which followed a non-probability purposive convenience sampling approach for selecting healthcare workers at regional and facility level. The study site and population comprised all health facilities, regardless of ownership, and all technical and professional healthcare workers. The results showed that midwives form the majority (51.2%) of Swaziland's health workforce, and at the time of the study, most of these (57.6%) practiced in public health facilities (KoS, MoH 2010b:86). This study did not analyse the deployment pattern of midwives. Evidence has shown that the availability of midwives alone does not ensure quality PNC provision, but the combination of the presence of midwives and basic medical equipment, medical supplies and medications are necessary and sufficient condition for quality PNC services (Olsen et al 2005:1478).

### **2.13.2 Material resources for quality provision of postnatal care**

According to WHO (2014:1–22) and NICE (2014:1–7) essential medical materials for quality PNC include medication, medical supplies and diagnostic materials among other



things. Shortfalls in medical materials necessary for immediate PNC have been associated with higher cases of maternal and neonatal morbidity and mortality rates (Morestin et al 2009:6). The AHWO (2009:10) states that there is limited pharmaceutical supplies in health facilities, deteriorating infrastructure, inadequate equipment and supplies and weak supervision and performance management in Swaziland (KoS, MoH 2011a:39).

In the Service Availability Mapping Report of the Ministry of Health of 2010 (KoS, MoH 2010b:69) it was reported that basic equipment was available in more than 90% of all facilities in Swaziland. This equipment included essential drugs, such as magnesium sulphate and amoxicillin. About 83.5% facilities had maternal, newborn and child health related guidelines, such as PMTCT (KoS, MoH 2010b:195). Almost all the facilities (99.6%) had electricity, and 84% had functional telephones. Most of the health facilities (96.7%) had HIV-related prophylaxis, such co-trimoxazole, nevirapine and zidovudine in stock during the survey. According to the Ministry of Health of the Kingdom of Swaziland (2010b:68), all hospitals and health centres had ambulances. The report found that most of the primary vaccines for infants, such as polio, measles, BCG, pentavalent and DPT/HBV vaccine were available in all facilities. Of the 157 facilities providing child welfare services, the majority (98.1%) had under-5 weighing scales and 72.6% could take mid-upper arm circumference as a nutrition assessment strategy (KoS, MoH 2010b:195).

The strength of the study was that it portrayed a clear picture of maternal, newborn, child and adolescent health services availability in Swaziland. However, its weaknesses were the high possibility of distorted behaviour of the respondents and the vulnerability to observer bias (Polit & Beck 2008:321). The findings provided a base for the assessment of the competencies of midwives during the provision of immediate PNC interventions to mothers and their newborns. The findings were also used in the present study to discuss the outcomes of this study, which relate to the knowledge and practices of midwives during the provision of immediate PNC.

### **2.13.3 Organisational resources for quality postnatal care**

According to Morestin et al (2009:5), "Human resource management plays a significant role in institutions not only in ensuring the availability and retention of staff, but also in

motivating and defining the roles and responsibilities of staff. Thus, effective management of maternal, newborn and child health facilities may result in quality care provision. This is a function of proper work analysis, appropriate allocation of responsibilities and resources, and monitoring (Booyens 2008:95–96).

In Swaziland, midwifery personnel in health facilities are managed by nursing sisters and/or senior nurses, whose mandate is to ensure effectiveness in midwifery practices within the facilities (AHWO 2009:7). Such a mandate requires compilation of work schedules, provision of supportive supervision of care, and ensuring that necessary and adequate resources are timely made available to clients (AHWO 2009:17). Although the management of midwives is necessary, it is not a sufficient condition for averting maternal and neonatal deaths. Hence, it is important to state that the combination of management and availability of medical supplies such as antenatal cards, PNC registers, child welfare cards and equipment contribute to the reduction of maternal and neonatal mortality and morbidity rates. Most of the health facilities in Swaziland have the necessary medical supplies and equipment, and midwives have the requisite knowledge and skills to use the same, including ARV medication (Dlamini 2013:221; Mazia et al 2009:257).

The availability of the basic medical supplies and equipment for the provision of quality immediate PNC enabled the researcher of this study to determine the competencies of midwives during the provision of immediate PNC to mothers and their newborns. Having a competent midwifery workforce and well-equipped health facilities, however, do not guarantee effective utilisation of health facilities (KoS, MoH 2011b:27). There are external factors that may influence the usage and uptake of healthcare services, and the ensuing discussion focuses on the same.

#### **2.13.4 Socio-cultural issues related to HIV-positive mothers**

The period, provision of ARV prophylaxis to HIV-infected mothers during postpartum is crucial for the prevention of MTCT of HIV. Mothers require counselling and support on safe infant feeding practices, and maternal and infant danger signs, during this period. However, traditions and cultural practices in Africa often prevent mothers from seeking healthcare or accessing healthcare facilities during the critical stage of puerperium (Ojua et al 2013:177–178; Ziyane & Thwala 2010:16). Given that complications are

prevalent during the stage of puerperium, this explains the reasons for the high maternal and neonatal deaths in Africa (Ojua et al 2013:177–178).

Sanders (2008:47–57) conducted a qualitative study on women's voices. The purpose of the study was to investigate the lived experience of mothers in relation to pregnancy, motherhood and diagnosis of HIV. Purposive sampling was used to recruit 9 respondents (between the ages of 34 and 53 years old) who had been diagnosed with HIV and who were pregnant or had become mothers after diagnosis. The results showed extreme emotional distress after HIV diagnosis, feelings of being stigmatised, emotions related to pregnancy and the baby, experiences with healthcare providers, and prospects of motherhood for women with a diagnosis of HIV. This showed that the experience of mothers in the postnatal period living with HIV is one fraught with isolation, anxiety and distrust, but it is also one of hope for the normalcy that motherhood may bring (Sanders 2008:56). Further research is needed to determine best practice for care delivery as women with HIV enter the healthcare system. The present study implemented the latter recommendation on further research. Given that the study by Sanders (2008) was qualitative and the sample size was small (9 respondents), its outcome cannot be generalised. However, the study provided insight into PNC.

Phaswana-Mafuya and Kayongo (2008:63) report that the quality of a PMTCT programme and its ability to comply with required feeding practices are compromised by socio-cultural and economic factors. These factors include improper conduct of some nurses or midwives as care is sometimes not offered to clients (e.g. clients not examined), inadequate supplies, poor healthcare organisation, and inaccessible healthcare facilities with limited space and long waiting times. These factors might give rise to poor uptake of and retention in PNC services, especially among HIV-positive mothers, and poor uptake of these services could eventually lead to late identification of puerperal complications (Morestin et al 2009:6). In addition to the identified challenges, transport and distance from health facilities are among the main challenges in accessing quality PNC in sub-Saharan Africa (Eide, Mannan, Khogali, van Rooy, Swartz, Munthali, Hem, MacLachlan and Dyrstad 2015:e0125915). HIV is a major issue in Africa, but families and communities are untapped resources for improving maternal and neonatal health to reduce maternal and infant mortality rates (WHO & UNFPA 2015:1–2). The importance of community involvement in maternal, newborn and child

health influenced the researcher to explore more about the linkage between health facilities and communities in the provision of quality immediate PNC. As a result, the community was included in the adapted conceptual framework for the implementation of PNC in Swaziland, an idea echoed by Tlebere, Jackson, Loveday, Matizirofa, Doherty, Mbombo, Wigton, Treger and Chopra (2007:342).

## **2.14 CONCLUSION**

This chapter provided an insight into the continuum of care from pregnancy to motherhood (see section 2.2), postnatal care coverage and trends (see section 2.8) and midwives' competencies for immediate PNC (see section 2.5). In addition, the literature review revealed evidence-based guidelines in PNC (see section 2.6), current developments in PNC (see section 2.8) and factors affecting PNC, especially in relation to HIV-infected mothers and their HIV-exposed infants (see section 2.9). Substantial studies have been conducted on PNC, and researchers, experts and academics have explored it thoroughly, with little focus on the competencies of midwives during the immediate PNC period, where most maternal deaths tend to occur (Dlamini 2013:12–160; KoS, MoH 2011a:111; Ziyane & Thwala 2010:16). The literature review process contributed to the selection of an appropriate methodology for exploring the aims and objectives of this study. The ensuing chapter (chapter 3) focuses on discussions relating to the same.

## **CHAPTER 3**

### **RESEARCH DESIGN AND METHODOLOGY**

#### **3.1 INTRODUCTION**

This chapter reports on the research design and methodology. It outlines the series of steps taken when conducting the research study. These include identification of an appropriate research design, study population, sample selection, data collection and analysis. It also highlights ethical considerations, and measures to ensure reliability and validity.

#### **3.2 RESEARCH DESIGN AND METHODOLOGY**

This section offers a discussion of the paradigm of the study, including the research approach adopted to address the aim and objectives of the study. Included in this section is also a discussion of the research design of the study.

##### **3.2.1 Research paradigm: post-positivism**

Researchers are required to commence research projects with knowledge claims that align with their research strategy (methodology), and methods of data collection and analysis (Creswell 2007:19). The knowledge claims are sometimes called paradigms or worldviews. A paradigm is a set of beliefs and assumptions that guide or shape research projects (Morgan 2007:50). Whilst researchers may use multiple paradigms that are compatible, this study adopts a post-positivists paradigm because it is aligned with its methodology (approach), design, methods of data collection and analysis.

A post-positivists paradigm, like other paradigms, consists of a number of interrelated assumptions. The first assumption is that that knowledge (ontology), is valued and biased, and that true objective knowledge is difficult, or even impossible, to accomplish (Polit & Beck 2008:14–16). This assumption is consistent with the ontological beliefs of the researcher of this study. He claims that it is difficult to achieve absolute reality or truth of a phenomenon (Johnson & Christensen 2012:382). In other words, the absolute

truth or knowledge of a phenomenon (Polit & Beck 2008:15), such as competencies of midwives during PNC, can never be fully understood, as there are always many possible explanations for the same. Thus, knowledge established in research is always considered imperfect and fallible, and it is for this reason that researchers who opt for a post-positivists paradigm do not set out to prove a hypothesis, rather they set out to reject or accept a hypothesis (Johnson & Christensen 2012:382).

Given that knowledge established in research are imperfect, post-positivists support probabilistic evidence for learning what the true state of a phenomenon under investigation is probably is, with a high degree of likelihood (Johnson & Christensen 2012:380–382; Polit & Beck 2008:14–16). This paradigm was therefore chosen for the study. The second assumption is that post-positivists reject positivism and claim that knowledge comes from many “realities” rather than one “reality” (Lincoln & Guba 1985:37). Researchers adopting a post-positivist paradigm believe that the knowledge of a phenomenon can be understood or at least an approximation of it by employing multiple complementary data capturing strategies. The adoption of such an approach would ensure comprehensive exploration of a phenomenon under investigation (Polit & Beck 2008:14–16).

The fourth assumption is that an approximate reality or knowledge claim can be achieved by adopting a reductionist approach, which involves the reduction of ideas into small, discrete sets to test variables that comprise hypothesis and research questions (epistemologically) (Johnson & Christensen 2012:382). The researcher has an active role to play in this process, and this involves the use of an instrument, and his/her active involvement in the data collection process. With regard to active involvement, the researcher trained data collectors and also supervised the data collection process and collected data in some of the study sites. The final assumption is that observations are not fixed and are open to change within their contexts, and since reality involves bias and values, post-positivism incorporates subjective research. Post-positivism accepts contact between the researcher and the subject. For this reason, post-positivists support innovations and discovery of knowledge rather than specific, fixed activities, and thus creates a “flexible” research practice (Creswell 2007:19). The instruments used in the present study were complemented or enhanced with some open-ended questions.

### 3.2.2 Identification of an appropriate research design

A research design is a plan detailing how a research will be conducted. It guides the researcher in planning for and implementing a study. Questions relating to whether qualitative or quantitative design are most appropriate for exploring healthcare issues are well documented, with most discussions focussing on the technical differences between the two e.g. in terms of rigour, validity and reliability. Despite continued counter assertions, there is a general consensus that for each identified strength, there appears to be a corresponding weakness in both qualitative and quantitative research. For example, qualitative approaches have been both subject to criticism and praise for the typically close relationship between the researcher and the respondent.

Some contributors, including Finlay and Gough (2003:33) see the interactive relationship as being a particular benefit as it offers the researcher first hand insights into the experiences of respondents. As a result, data are more likely to be valid. Ramos (1989:75–63) identifies a potential weakness with this relationship and argue that, becoming enmeshed with respondents may result in researchers having difficulties with separating their own experiences from those of respondents. Careful consideration of wider technical research design aspects carried out by some, including Marshall and Rossman (1995:2–11) suggest that, in many respects, qualitative modes of enquiry are just as rigorous, as quantitative methods. For example, in sampling, both qualitative and quantitative approaches promote adherence to research principles in relation to the selection of representative samples. With regard to the often expressed view that qualitative methods have specific limitations that relate to unclear data-analysis procedures, counter views are Silverman (2010:33–37) who points out that, consistent application and close-adherence to standardised qualitative data-analysis procedures offers just as much clarity to the researcher as do quantitative analysis methods.

Despite the ongoing debate about which approach contributes the most to knowledge, a consistent view has been established with a generally accepted acknowledgement that there is a place for both qualitative and quantitative work (Carr 1994:716–721; Corner 1991:718–727; Duffy 1985:225–232). This view appropriately reflects the consensus repeatedly echoed that neither design has all the answers. The choice of design depends on the research question under consideration and as such, investigation of specific issues may be best suited to either qualitative or quantitative enquiry methods.

With regard to postnatal care and midwifery competencies, most predecessor studies are qualitatively biased, and are carried out by paediatrics and focussed on clients and midwives' perceptions. This is not surprising as qualitative methodologies are increasingly been used in health to answer questions about individuals' experiences of care. The growing prominence of qualitative enquiry methods within midwifery practice reflects the growing bias towards holism and the acceptance of the importance of the subjective experience of healthcare professionals. Within this, the intention of research is to explore phenomenon through understanding human beings and the nature of their experiences.

Despite its widely acknowledged strengths, qualitative methodology has been associated with a number of shortcomings, including an increased likelihood of the researcher getting immersed with the respondent, leading to a difficulty in separating his/her own experiences and thoughts from those of the clients. On the basis of this, and the aforementioned discussions, a qualitative design is not appropriate for this study. The researcher therefore opted for a quantitative design, as it enabled him to describe and clearly portray the competencies of midwives when rendering immediate PNC to mothers and their infants (Kumar 2011:10). Specifically, this study took the form of a quantitative descriptive non-experimental cross sectional study. Polit and Beck (2004:716) define quantitative descriptive design as research studies that have as their main objective the accurate portrayal of the characteristics of persons, situations or groups and / or the frequency with which certain phenomena occur. Non-experimental element of the design allows the researcher to collect data without introducing an intervention (Polit & Beck 2004:725). In relation to the cross sectional element of the design, this involves the collection of data at one point in time, with no follow-up period (Hulley, Cummings, Browner, Grady & Newman 2007:109). This element of the design was appropriate for describing and identifying gaps in the competencies of midwives during the provision of immediate PNC to mothers and infants. It also involves the manipulation of numerical data. The numerical data were manipulated in this study through statistical procedures for the purpose of describing and identifying gaps in the knowledge and practices of midwives in relation to PNC. The limitations of a quantitative approach are its inability to capture people's emotions or feelings and opinions (Hulley et al 2007:123).



In other words, quantitative studies focus on people's overt behaviour, and overlook their feelings or emotions (Johnson & Christensen 2012:30–34) date). In trying to address these challenges, the questionnaire of this study was carefully constructed and worded without any double-barrelness to capture as much data as required (Hulley et al 2007:123). Moreover, it was complemented or enhanced with open-ended questions in order to capture the opinions of respondents in relation to PNC. In addition to the appropriateness of the design to achieve the aim and objectives of the study, the decision to adopt a quantitative design was also influenced by the gap noted in the extant literature on this particular subject, namely poor maternal and newborn assessments and the absence of measurements of vital signs.

### **3.3 SAMPLING**

The process of selecting the study units from a population of interest in this study was outlined in this section. One major decision that researchers tend to take in conducting research is to decide on the nature of the data and from where they can be obtained, as the sources of data tend to have profound effects on the ultimate quality of studies (Morse 2002:3–4). Such a decision for identifying and selecting sources of data is what Grbich (2007:234) and Macnee and McCabe (2008:245) refer to as sampling. To be precise, Davis and Scott (2007:155–173) define it as the science and practice of selecting a portion of the population in a manner that allows the entire population to be represented in the same. On examining this definition, it became apparent that a sample is, in essence, a subset of a population. The target population for this study was midwives in maternity units in Swaziland. The accessible population of the study comprised of all eleven maternity units (also known as maternities) in Swaziland, which served as a sampling frame for the study sites. These 11 maternities are found across the Kingdom of Swaziland.

A simple random sampling approach was used to select the sample of the study sites. The researcher established a sampling frame, and the elements of this sampling frame were the 11 maternities. Each of the maternities was assigned a unique number to facilitate random selection. The unique number of each of the maternities was written on a separate piece of paper. The pieces of paper were then placed in a bowl for sample selection. The result of this exercise was the selection of a total of six maternities, which

are located in four regions of the Kingdom of Swaziland: Hhohho, Manzini, Lubombo and Shiselweni.

With regard to sampling of the respondents, a systematic random sampling technique was used for the selection of the same (Johnson & Christensen 2012:223). This approach was adopted to minimise sampling bias, as each respondent had an equal chance of being selected. This means every respondent of the accessible population had more than a zero chance of being selected (Polit & Beck 2008:767). There were 114 midwives in the study sites (6 maternities), and the desired sample size (minimum) for the study was 81, calculated using the formula for estimation for a single population proportion.

$$N = \frac{Z_{\alpha/2}^2 p (1-p)}{d^2} = 81$$

Where, N is the required minimum sample size,  $Z_{\alpha/2}^2$  is a standard score of 1.96 for 0.05 significance level. This means the level of statistical significance for the sampling of respondents was set at  $p < 0.05$ . P is the case detection or proportions of predecessor studies, 0.12, and d is the margin of error and taken to be 5%. The study has 80% statistical power.

The researcher commenced the sampling process by dividing the total number of midwives by the desired sample size. This yielded a sampling interval of 1.1. The first midwife to be interviewed was selected randomly. Thereafter, midwives corresponding to the sampling interval were sampled, a technique supported by Polit and Beck (2008:347). The respondent sample size of 81 respondents was selected from the selected study sites. A non-response rate assumed to be 8% was used to determine required sample size. Thus, required sample size was  $7 + 81 = 88$ . These respondents were proportionately distributed to study sites (Table 3.1). The sampling process adopted helps in generalising results to the population from which the sample was chosen (Kumar 2011:193).

**Table 3.1: Sample size for midwives proportionately distributed to study sites**

<b>Study site</b>	<b>Total number of midwives in maternity department</b>	<b>Sample size</b>
A	30	23
B	11	8
C	27	21
D	17	13
E	10	8
F	19	15
<b>Total</b>	<b>114</b>	<b>88</b>

### **3.4 DATA COLLECTION**

Questionnaires are the most frequently used data collection methods in research, particularly those that are quantitatively focused. Thus, care must be taken when developing a questionnaire to ensure that the information it gathers is reliable and valid. Several steps were involved in the development of the questionnaire. A brief description of each of the steps follows to enable readers to gain insight into the rigour of the study.

#### **3.4.1 Designing the questionnaire**

The first step in designing a questionnaire involves developing a thorough understanding of the research problem statement, hypothesis, and readability or educational levels of the population to be researched. An enhanced understanding of these issues through an extensive literature search and review is critical to set the pace for the development of a valid and reliable questionnaire (Johnson & Christensen 2012:163). The researcher conducted an extensive literature review on PNC and competencies of midwives. The literature reviewed generated huge insight into the study area, and created a sound foundation for the next stage of the questionnaire development, which is making decisions on the type and sequence of questions. This step included the operationalisation of concepts, which involved translating abstract ideas into concrete questions that are measurable. Polit and Beck (2008:369) advise that questions should be short, and most importantly, relevant to the subject being explored. The researcher undertook an exploratory work and a literature review on PNC and competencies for midwives during the immediate PNC. In addition, discussions were held with experts in the field of maternal, newborn and child health to seek their

views with regard to what content could be included in the questionnaire. Following this exploratory exercise, draft questionnaires were developed (third step). Two questionnaires were developed: a questionnaire for midwives, and a questionnaire for senior midwives.

These questionnaires were discussed with 7 experts (midwives, clinicians, gynaecologists and academics) (fourth step). The essence of these discussions was to establish validity of the questionnaires. In other words, the discussions were held not only to validate whether the questionnaires developed would measure what they intended to measure, and are appropriate for the study population, but also to show whether they are comprehensive enough to collect information needed to address the aims and objectives of the study. These experts offered suggestions for improvement, and the questionnaires were amended in line with their suggestions, and then subjected to a readability test with respondents that were not included in the study sample. The questionnaires were revised based on the outcomes of the readability test. A total of six discussion meetings with experts were held, which focused on the key clinical immediate PNC interventions to be offered to mothers and infants within 24 hours.

The revised questionnaires were later submitted to the expert, statistician and research supervisor for comments. Comments offered were incorporated in the questionnaires, which were later submitted, together with the necessary documentation, to the Department of Health Studies Ethics Committee for ethical clearance. The final step is the preliminary investigation or pilot. The essence of this was to illustrate the accuracy or precision of the questionnaires, and whether they would consistently measure what they measure. The questionnaires were piloted with sample not included in the main study. The outcome of the pilots or preliminary investigations led to the development of the final version of the questionnaire.

The questionnaire for midwives was divided into four sub-sections.

- Section A required demographic information, such as age, marital status and level of education of the respondents, including in-service training.
- Section B included clinical immediate PNC interventions to be offered to mothers and infants immediately after childbirth (within 30 minutes).

- Section C referred to clinical PNC services to be offered to mothers and infants on discharge from hospitals.
- Section D comprised open-ended questions. This allowed respondents to respond to questions in their own words. The questions focused on guidance, challenges or barriers to provide immediate PNC services.

The questionnaire for senior midwives was divided into sub-sections, and these include: human resources, material resources (medical supplies) and organisational resources. These resources are deemed necessary for the provision of immediate PNC care. A checklist to investigate essential medication, supplies and equipment formed part of the questionnaire.

This systematic approach to questionnaire development may help researchers to reduce measurement errors. Thus, careful attention to detail and understanding of the process demonstrated are of immense value to ensuring the development of valid and reliable data collection tools.

### **3.4.2 Pretesting: preliminary investigation**

It is advisable for researchers to undertake a small-scale trial run of methods of data collection, especially when newly developed (Johnson & Christensen 2012:183). The essence of this trial run is to gather evaluative information relating to the feasibility and efficacy of data collection methods (Hulley et al 2007:276). A pre-test was conducted at Dvokolwako Health Centre in Swaziland to evaluate the effectiveness of the questionnaires used in this study. This was to ensure that they collected data that addressed the aims and objectives of the study.

The pre-testing exercise included seven midwives and two senior nurses. The setting of the health centre was similar to the maternities where the main study was conducted. The results of the preliminary investigations were used to revise the questionnaires in line with the study's aims and objectives. The revisions made resulted in the development of the final versions of the questionnaires used in the main data collection process.

### **3.4.3 Data collection method**

Self-reporting was an option for data collection. The researcher did not use self-reporting in this study because of the possibility of over-estimation of professional performance among midwives, professional desirability bias and errors in self-observation, particularly when the study is focusing on their competencies. Face-to-face structured interviews were conducted with midwives and senior midwives working in maternities in the selected study sites. The researcher trained two research assistants on data management and administration of the data collection tools. The training also included an overview of the study, the aim objectives, and the data collection process. Ethical considerations during the data collection process were extensively discussed. Each question on the data collection tools was discussed with the research assistants to ensure that they understood all the questions. The research assistants were informed to complete the questionnaire on behalf of the respondents and to document additional field notes in the provided spaces on the questionnaires.

These research assistants had first university degrees in social sciences and public health. They also had a 3–5 year work experience in the area of maternal, newborn and child health. The research assistants had over 3 years' experience of data collection, and were fluent in siSwati and English. In addition to their excellent writing skills, they were familiar with the principles of ethical research, including those related to alleviating harm and safeguarding the rights of respondents.

The researcher and the research assistants collected data in one of the study sites for three days. This was aimed at providing supportive supervision and mentoring to the research assistants on the administration of the tools. Three of the study sites had a large number of respondents, and hence, the assistance of the researcher assistants was required and obtained. Each questionnaire was checked by the researcher for completion and accuracy. The researcher collected the data from the rest (two) of the study sites. All interviews were conducted in a private room of the study sites, and they were conducted in line with the pace of the respondents. Data was collected between February 2014 and April 2014. Collected data were securely kept in a locked cupboard and only accessible to the researcher.

### **3.5 DATA MANAGEMENT AND ANALYSIS TECHNIQUES**

The trained research assistants captured the data on the computer. Captured data, including field notes, were exported and analysed using IBM SPSS Statistics, version 22.0. Descriptive and inferential statistics were the two approaches to data analysis used in this study. Descriptive statistics, such as frequency distributions, were used to describe the characteristics of the study sample and the values obtained from the measurements of the variables.

The inferential statistical test employed was the Kruskal-Wallis test. According to Pallant (2005:294), the Kruskal-Wallis test is a non-parametric approach that enables researchers to compare scores of continuous variables. It was used here to test for significant differences between knowledge and practices of midwives and the provision of PNC to mothers and infants. The researcher, with the help of the statistician, interpreted data quantitatively and compared relationships between knowledge and practices of midwives, and PNC. For the qualitative data that was generated from the open-ended questions and field notes, content trend analysis was conducted, and this led to the identification of themes.

### **3.6 VALIDITY AND RELIABILITY**

Johnson and Christensen (2012:245) state that quantitative researchers tend to focus on ensuring the validity and reliability of research studies. This is because it is the measures of validity and reliability that determine whether the findings of a research can be generalized beyond its confines. The following section focuses on the validity and reliability of this research study.

#### **3.6.1 Validity**

According to Polit and Beck (2008:373–377), validity is the degree to which a research instrument measures what it is supposed to measure. In the context of research designs, validity is about the approximate truth of an inference or reality (Johnson & Christensen 2012:245–247). This means that the notion of validity is relative; it is about degrees or levels, such as high, medium or low rather than one of presence or absence. There are variants of validity (Johnson & Christensen 2012:253–270). Content validity

refers to the extent to which a measure represents all facets of a given construct (Polit & Beck 2008:373–377). In this study the data collecting tools were tested for content validity. They were given to midwives at Dvokolwako Health Centre and midwifery lecturers at the Southern African Nazarene University and the University of Swaziland to obtain their input. They were also given to an independent expert to check for conceptual and investigative bias, as advised by Nxumalo (2011:77). A single proportion sample size formula was used to determine the number of midwives to be included in the study sample.

The internal validity is the degree to which the study findings represent a true reflection of the exposure–outcome association in the target population (Polit & Beck 2008:287). In other words, internal validity is the degree to which observed changes in a dependent variable can be attributed to changes in an independent variable (Johnson & Christensen 2012:250). This was not applicable in this study, as there was no manipulation of variables. However, to enhance its quality, interviewers were trained and the researcher closely monitored the data collection process. The data collection instruments were tested before application in the main study.

External validity concerns the representativeness of samples used in studies. This was a vital concern for the researcher of this study, as he aimed to determine not only the competencies of midwives in Swaziland during the provision of immediate PNC, but also to adopt evidence-based guidelines for the implementation of PNC. In this study, the sample was randomly selected, and its size was determined using a significance level or error rate of 0.05 (95%), meaning there was a 95% chance of obtaining the same or similar results if the study is repeated (Johnson & Christensen 2012:234). Sufficient data were collected using the minimum sample size of 88 (Johnson & Christensen 2012:234). Taking into account the sampling approach used and the representativeness of the sample, the findings of the study could be generalised to populations similar to that from which the sample was obtained.

### **3.6.2 Reliability**

Reliability refers to the repeatability of a measurement or study findings and whether the same findings would be obtained if the study were repeated (Joubert & Ehrlich 2010:79). In other words, reliability relates to the degree of consistency or accuracy with



which an instrument measures the attribute it is designed to measure (Johnson & Christensen 2012:253). To ensure reliability, this study utilised a structured questionnaire as a data collection method. Because reliability is a multi-component concept, researchers need to decide in advance aspects of reliability (internal consistency, stability or equivalence) when selecting instruments for their studies (Joubert & Ehrlich 2010:79). In this study, all these aspects were important. The instruments used in this study were tested on similar populations, and their reliability using some of these aspects was evaluated. Starting with internal consistency, an instrument is said to be internally consistent or homogenous if its items measure the same trait (Johnson & Christensen 2012:250). Internal consistency is actually the extent to which the items measure the same trait.

The reliability of the tools of this study was tested using Cronbach's coefficient alpha (Johnson & Christensen 2012:142–143). The coefficient alpha of the questionnaire ensured that no parts of the questionnaire had to be eliminated based on the reliability scores for individual items (Johnson & Christensen 2012:142–143). Cronbach's alpha for the tools of this study was 0.6. Stability of measurements or tools relates to the extent to which similar scores or results are obtained when applied separately on different occasions (Johnson & Christensen 2012:142–143). Stability of measurements is really an estimate of the correlation coefficient of two sets of scores, test–retest (Johnson & Christensen 2012:506). The test-retest was not performed in this study. The final reliability measure that was applied in this study was equivalence (Johnson & Christensen 2012:142–250). In essence, equivalence is about inter-reliability or agreement (Johnson & Christensen 2012:250). Equivalence is also about agreement or degrees between two items of a scale or measure. Measures of agreement were established in this study using kappa statistics.

### **3.7 ETHICAL CONSIDERATION**

When humans are to be used as study respondents, care must be exercised that the rights of the respondents are protected. The present researcher was guided by and adhered to this element and all other aspects of the Swaziland research code of ethics. The approval to conduct the study was obtained from the Ministry of Health in Swaziland (Swaziland Ethics Committee) (Annexure D), and management team of the study sites. The consent of all respondents who took part in the study was sought and

obtained before interviews. The signed consent forms were securely kept in a locked cupboard together with completed questionnaires and were only accessible to the research team (Annexure A and E).

### **3.7.1 Autonomy**

The principle of autonomy means that research respondents were to be provided with sufficient information to enable them to decide whether to participate in a study (Coughlin, Beauchamp & Weed 2009:26). The purpose of the study, including its benefits, was fully explained to respondents. The researcher respected the autonomy, rights and dignity of the research respondents at all times during the course of the research. Respondents were informed that they had a right to choose either to participate or not to participate in the research. Study respondents were encouraged to act independently and were free to choose whether they wanted to participate in the study.

### **3.7.2 Beneficence**

Hulley et al (2007:225) state that respondents must be treated in such a way that harm is prevented or removed. The researcher strived to minimise all types of harm and discomfort and to achieve as far as possible a balance between the potential benefits and risks of using respondents. Respondents were not coerced to answer any questions. Interviews were conducted at the pace of the respondents. The researcher took all necessary steps to avoid exposing respondents to any form of physical and psychological harm. These included maintaining the privacy and confidentiality of respondents. Names of respondents were not recorded at any phase of the study; only codes were used.

### **3.7.3 Justice**

Justice refers to fair treatment of study respondents (Coughlin et al 2009:117). The purpose, benefits and risks of the research were fully discussed with the respondents, and they were given the option to withdraw from the research if they so wish, without any negative effect on their well-being. The researcher upheld ethical standards of

research planning, implementation and reporting (Coughlin et al 2009:118). The findings of the study are fully reported in this thesis.

#### **3.7.4 Confidentiality and anonymity**

Confidentiality and anonymity of respondents were respected throughout this study (Joubert & Ehrlich 2010:231). Maintaining confidentiality was taken seriously by the researcher, as the subject researched (HIV/AIDS) is an emotive one. So, no identifiable information is included in this thesis. Anonymity was achieved by not putting names of respondents on the data collection tools; codes were used instead. Completed data collection tools were checked for completeness and collected by the researcher on a daily basis. Respondents who were not comfortable to be part of the study were excluded from participation.

#### **3.7.5 Privacy**

Privacy refers to the fact that respondents may behave and think without interference or the possibility that private behaviour or thoughts can be used to embarrass or demean the respondents later (Coughlin et al 2009:85). The researcher took measures to ensure and maintain the worth and dignity of the respondents. Respondents' responses were recorded without interference. The interviews were conducted in a private room and the questionnaires were stored or kept in a locked cupboard and were only accessible to the research team.

#### **3.7.6 Informed consent**

Informed consent is a legal requirement for participation in studies (Hulley et al 2007:228). The nature of the present study was fully explained to the respondents. Respondents' participation in this study was sought and obtained (Annexure E). This means that verbal and written consents were required from respondents to express their willingness for participation in the study. Respondents who were willing to partake in the study expressed their desire to do so by signing the consent form. Signed consent forms were kept in a locked cupboard and were only accessible to the research team.

### **3.7 CONCLUSION**

This chapter discussed the methodological issues of the study (see section 3.2), including the design (see section 3.2), sampling procedures (see section 3.3) and validity and reliability of the study (see section 3.6). This chapter also included a discussion of ethical issues of the study (see section 3.7). The next chapter presents the research findings.

## **CHAPTER 4**

### **PRESENTATION OF STUDY FINDINGS**

#### **4.1 INTRODUCTION**

In the preceding chapters, the background and scope of the problem, literature on PNC and related issues, the objective of this study, and methods to carry out the study have been widely addressed. This chapter relates to the findings of the study, which significantly contributed to the adoption of a conceptual framework and evidence-based guidelines for the implementation of quality PNC in Swaziland. In this chapter, the findings of the study are presented as they addressed the objectives of the study. The findings are presented in sections, and the following sections are included in the chapter:

- Respondents per study site
- Characteristics of respondents
- In-service capacity building for midwives
- Maternal immediate PNC services rendered within 30 minutes after childbirth
- Immediate newborn care services offered within 30 minutes after delivery
- Immediate PNC counselling provided within the first 30 minutes after childbirth
- Pre-discharge PNC for mothers
- Pre-discharge newborn care
- Pre-discharge PNC counselling
- Challenges of PNC provision
- Preparedness of health facilities to provide immediate PNC services
- Factors affecting quality of PNC
- Hypothesis testing

#### **4.2 RESPONDENTS PER STUDY SITE**

A total of 88 respondents were recruited from six health facilities, which were distributed across the Kingdom of Swaziland. Health facility A had 26.1% (n=23) of the study respondents, while health facilities C, D and F had 23.9% (n=21), 14.8% (n=13), and

17.0% (n=15) respondents respectively. The remaining two health facilities (B & E) had an equal proportion of respondents, 9.1% (n=8) each. Table 4.1 shows the number of respondents per study site.

**Table 4.1: Number of respondents by health facility**

<b>Study site</b>	<b>Frequency</b>	<b>Percentage</b>
A	23	26.1
B	8	9.1
C	21	23.9
D	13	14.8
E	8	9.1
F	15	17.0
<b>Total</b>	<b>88</b>	<b>100.0</b>

The respondents (midwives) of these health institutions varied in terms of age, qualifications, and years of experience of midwifery practice. It is therefore imperative for some attention to be given to these characteristics.

### **4.3 CHARACTERISTICS OF RESPONDENTS**

This section is subdivided into a number of subsections, and these include age, experience and education, and in-service capacity building for midwives.

#### **4.3.1 Age of respondents**

Table 4.2 displays the age ranges of the respondents. The majority of midwives (43.2%, n=38) were within the age range of 30–39 years, 33.0% (n=29) in the range of 29 years and below, and 19.3% (n=17) in the range of 40–49 years. About 4.5% (n=4) of the respondents were 50 years of age and above. This means that the majority of the workforce in the health facilities was within the productive age group.

**Table 4.2: Distribution of respondents by age**

Age groups	Frequency (n)	Percentage (%)
29 years and younger	29	33.0
30–39 years	38	43.2
40–49 years	17	19.3
50 years and above	4	4.5
<b>Total</b>	<b>88</b>	<b>100.0</b>
Note: minimum age = 24; maximum age = 57; mean = 34.5; standard deviation = 7.265		

#### 4.3.2 Experience and education of respondents

Adequate and relevant clinical experience of midwives is a prerequisite for effective midwifery practice. Table 4.3 depicts the respondents' years of experience, institution of training and qualifications. While all respondents were licensed to practice midwifery in Swaziland, 67.0% (n=62) had a post-graduate diploma qualification in midwifery, 27.3% (n=24) had a bachelor's degree with a midwifery speciality, and only 2.3% (n=2) had an advanced midwifery certificate. In relation to years of experience, 31.8% (n=28) of total number of respondents (N=88) had more than 6 years of clinical experience in midwifery practice, 27.3% (n=24) had 2–4 years, 19.3% (n=17) had 4–6 years, and 21.6% (n=19) had 0–2 years of clinical experience.

**Table 4.3: Distribution of respondents by experience, qualification and institution of training**

Distribution of respondents		Frequency (n)	Percentage (%)
Respondents' qualification	State-registered midwives with diploma certificate	62	70.5
	State-registered midwives with bachelor's degree	24	27.3
	Midwives with advanced certificate	2	2.3
	<b>Total</b>	<b>88</b>	<b>100.0</b>
Institution of training	Southern African Nazarene University	29	33.0
	University of Swaziland	47	53.4
	Institutions outside of Swaziland	12	13.6
	<b>Total</b>	<b>88</b>	<b>100.0</b>
Respondents' number of years clinical experience since initial midwifery training	0–2 years	19	21.6
	2–4 years	24	27.3
	4–6 years	17	19.3
	6 years and above	28	31.8
	<b>Total</b>	<b>88</b>	<b>100.0</b>

### 4.3.3 In-service capacity building for midwives

Continuing education of healthcare providers plays a significant role in maintaining a competent workforce (KoS, MoH 2011b:23). Thus, midwives need to be updated on a regular basis with new evidence to inform their clinical practice. This can be achieved through in-service training. All respondents (100%, n=88) of this study reported that they had attended in-service training programmes. Prevention of mother-to-child transmission was the most attended training programme (78.4%, n=69), followed by HIV testing and counselling (46.6%, n=41), emergency obstetric and neonatal care (30.7%, n=27), and PNC (8.0%, n=7). However, it was important to note that most of the training programmes attended were HIV-related, and did not focus much on maternal, newborn and child health. Table 4.4 presents the types of training programmes respondents attended, including the average time since completion of in-service training.

**Table 4.4: Attendance to in-service training programmes**

Topic for in-service training	Percentage of attendance to in-services training programmes and average time of completion of in-service training							
	0–1 months		1–6 months		6 months to 1 year		Total	
	n	%	n	%	n	%	N	%
Psychosocial support for children and adolescents	1	50.0	1	50.0	0	0.0	2	2.3
Emergency obstetric and neonatal care	15	55.6	9	33.3	3	11.1	27	30.7
Nurse-led ART initiation in Swaziland	6	85.7	1	14.3	0	0.0	7	8.0
Tuberculosis/HIV co-infection training	6	60.0	4	40.0	0	0.0	10	11.4
HIV counselling and testing	26	63.4	13	31.7	2	4.9	41	46.6
ART and integrated management of adult and childhood illnesses	10	55.6	7	38.9	1	5.6	18	20.5
PMTCT of HIV	40	58.0	25	36.2	4	5.8	69	78.4
Syndromic management of sexually transmitted infections	6	85.7	1	14.3	0	0.0	7	8.0
Care and treatment of HIV-infected children	0	0.0	1	100.0	0	0.0	1	1.1
PNC	2	28.6	5	71.4	0	0.0	7	8.1
<b>Total</b>	<b>51</b>	<b>58.0</b>	<b>30</b>	<b>34.1</b>	<b>7</b>	<b>8.0</b>	<b>88</b>	<b>100.0</b>

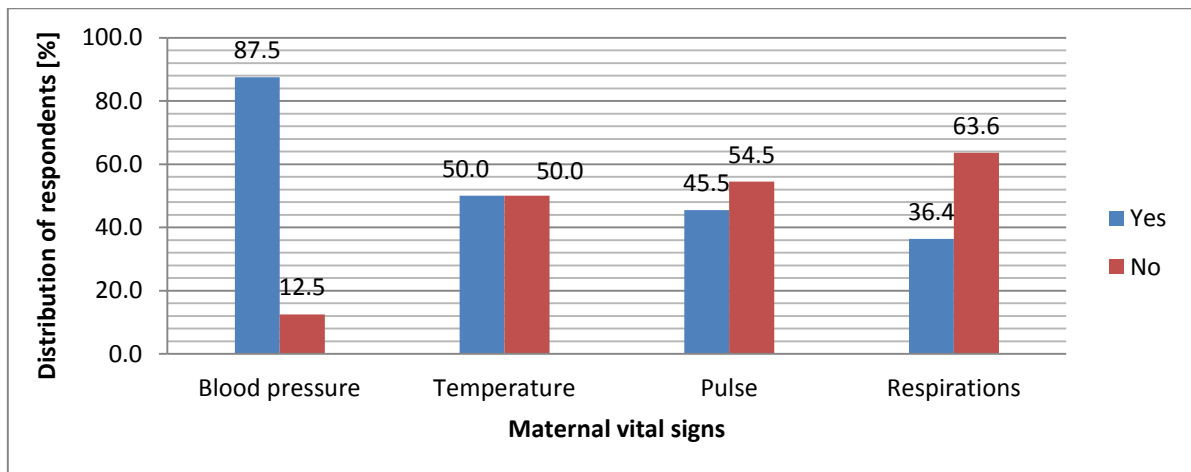


#### **4.4 MATERNAL IMMEDIATE POSTNATAL CARE SERVICES RENDERED WITHIN 30 MINUTES AFTER CHILDBIRTH**

Nine maternal postnatal interventions were identified in this study for the provision of immediate PNC during the first thirty minutes after childbirth. These include: maternal vital signs assessment, uterine contraction support, fundal massage, uterus palpation and uterotonic drug administration, placental delivery and examination, vaginal examination and episiotomy and or tear repairs, physical examination, supporting breastfeeding, and service documentation. A detailed description of the identified interventions is provided in the next subsections.

##### **4.4.1 Maternal vital signs assessments**

Half of the respondents (50%, n=44) mentioned that they routinely assessed the temperature of mothers during the immediate PNC period, and the other half reported that they failed to do so. With regard to maternal pulse rate assessment, 45.5% (n=40) of the respondents reported that they usually assess maternal pulse rates immediately after childbirth. However, this is not the case for the majority of respondents (54.5%, n=44), who reported a failure on their part to conduct maternal pulse rate assessments. Maternal blood pressure is an important indicator of postpartum pre-eclampsia, eclampsia and puerperal shock (Leifer 2008:231). The majority of respondents of the study 87.5% (n=77) reported to have measured blood pressures of mothers in the postnatal period. However, 12.5% (n=11) of the respondents reported that they have never offered this intervention during this period. While the majority of respondents (63.6%, n=56) failed to indicate whether they assessed and recorded respirations, 36.4% (n=32) reported they monitored respiration regularly and consistently. Figure 4.1 shows the proportions of maternal vital signs assessments carried out by midwives during the first thirty minutes after childbirth.



**Figure 4.1: Proportions of maternal vital signs assessments**

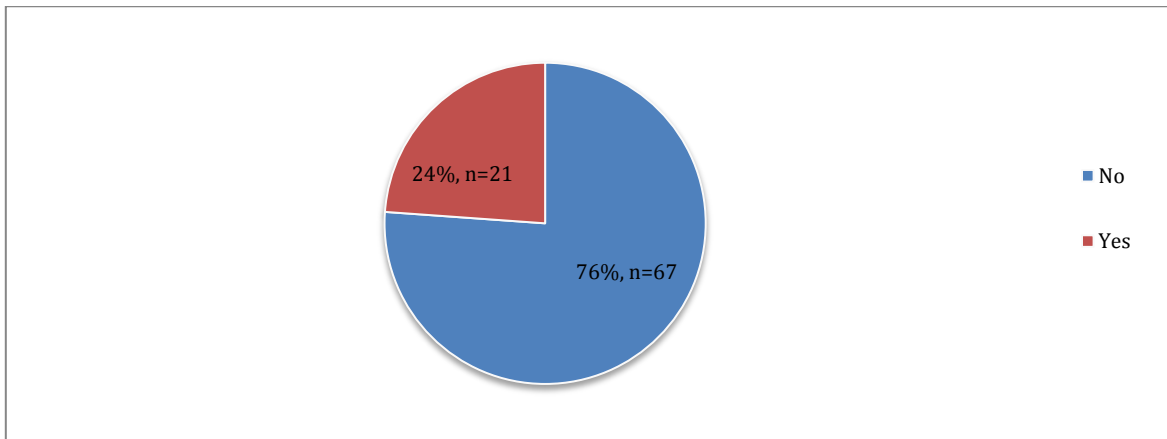
It was noted in this study that maternal vital signs assessment was not the only clinical intervention that could prevent maternal complications during the immediate PNC. This is particularly the case for the first thirty minutes after delivery. Supporting uterine contraction, following delivery is another important midwifery intervention that should be rendered to mothers during PNC.

#### **4.4.2 Uterine contraction support**

The study identified that uterine contraction could be achieved through fundal massage and administration of uterotonic drugs immediately after delivery.

##### **4.4.2.1 Fundal massage**

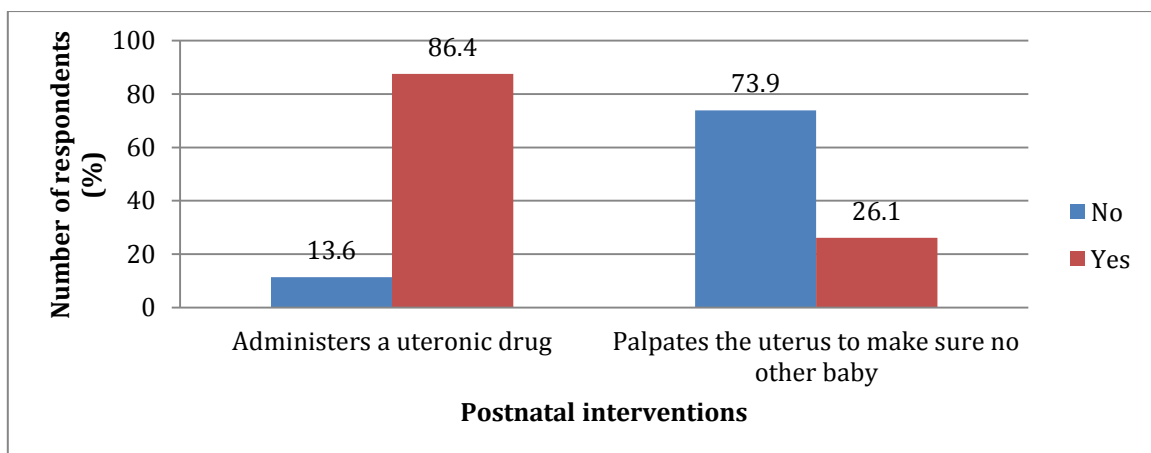
The fundal massage is a non-invasive routine intervention in most childbirth facilities often carried out by midwives. It is generally a non-painful intervention, its purpose is to help expel material from the uterus, allowing it to contract, and for potential problems to be diagnosed and managed. About 76% of the respondents (n=67) reported not to have offered fundal massage immediately after childbirth. However, a minority of the respondents (23.9%, n=21) reported to have knowledge of fundal message, and have offered this intervention in their clinical practices. Figure 4.2 presents the proportions of the practice of fundal massage during the immediate PNC period.



**Figure 4.2: The practice of fundal massage to support uterine contraction**

#### 4.4.2.2 Uterus palpation and uterotonic drug administration

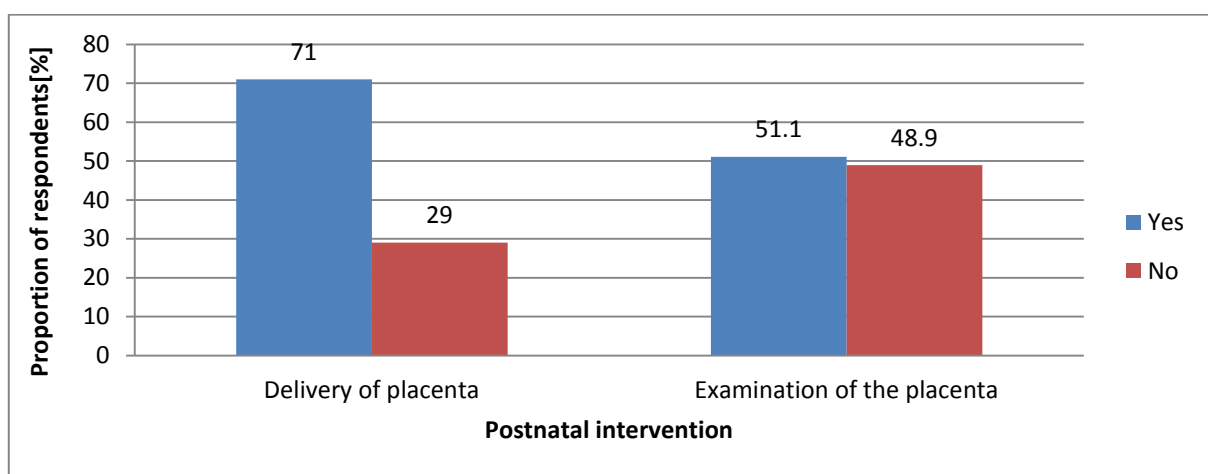
About 74% (n=65) of respondents reported that they were not palpating the uteruses of mothers before the administration of uterotonic drugs. Palpation of the uterus is a vital intervention as it enables midwives to ensure that no baby is locked in the uterus. Only a small percentage of respondents (26.1%, n=23) reported to have provided this postnatal intervention, uterus palpation. Whilst about 86.4% (n=76) of the respondents reported to have routinely administered uterotonic drug immediately after delivery of the baby, 13.6% (n=12) reported that they did not provide this intervention. Figure 4.3 indicates the practice of midwives in relation to uterine palpation and administration of uterotonic drugs during the provision of immediate PNC.



**Figure 4.3: The practice of uterine palpation and administration of uterotonic drugs to mothers immediately after delivery by midwives**

### 4.4.3 Placental delivery and examination

It was noted in the outcome of this study that about 29.0% (n=26) of respondents did not mention that placental delivery is an essential immediate PNC intervention. While this is the case, a large number of respondents (71.0%, n=62) reported to have offered this postnatal intervention. About 51.1% (n=45) of respondents indicated that the examination of the placenta and membranes for completeness and abnormalities is an important immediate PNC service, while about 48.9% did not indicate that this is the case. Figure 4.4 shows the practice of midwives in relation to placental delivery and examination.



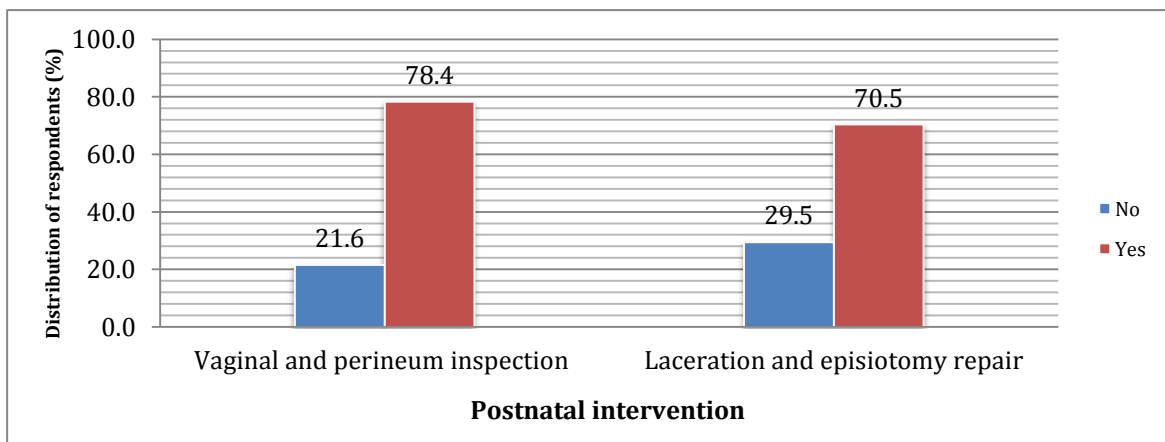
**Figure 4.4: The practice of placental delivery and examination**

### 4.4.4 Vaginal examination and episiotomy repairs

This study found that vaginal examination and skilful repair of tears and episiotomies could save the lives of mothers in the postnatal stage. A good proportion of respondents (78.4%, n=69) agreed that vaginal examination during the immediate PNC should be performed on mothers. However, a few respondents of this study (21.6%, n=19) were not in agreement with this; they did not consider vaginal examination and episiotomy repairs lifesaving interventions.

Mothers usually sustain tears, and episiotomies are often performed on mothers during childbirth. Vaginal examination and episiotomy repair are carried out to prevent postpartum bleeding (Leifer 2008:231). Some respondents emphasised that postpartum bleeding could lead to maternal deaths if ignored. However, other respondents (29.5%,

n=26) did not mention repairs of tears or episiotomies as part of a care package required of midwives to offer to mothers following delivery. Figure 4.5 shows the practice of vaginal examination and repairs of lacerations sustained during childbirth.



**Figure 4.5: The practice of vaginal examination and episiotomy repairs**

Another vital immediate PNC intervention identified in this study was performance of comprehensive and systematic physical assessments. Respondents repeatedly mentioned the importance of this during interviews.

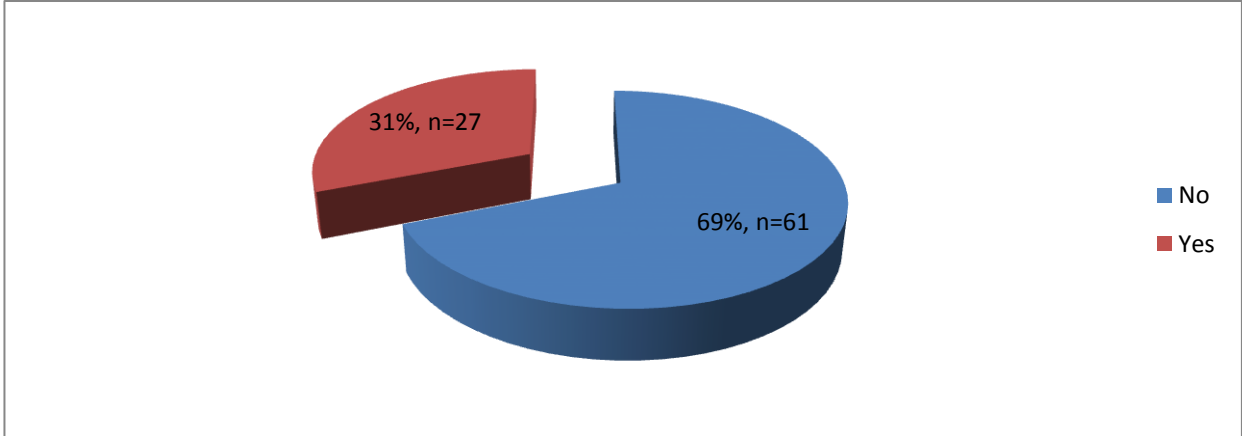
#### **4.4.5 Physical examination**

The literature sources are clear that maternal physical examination helps midwives to identify life-threatening conditions, like an atonic uterus, deep tears of the vaginal walls, and paleness or cyanosed mothers ((ICM & the International Federation of Gynaecology and Obstetrics 2013:1–2). It was noted in this study that only 43.2% (n=38) of the respondents were of the view that physical examination is an important intervention for mothers in the postnatal stage. The rest of the respondents (56.8%, n=50) failed to provide this crucial postnatal intervention to mothers, and thus may expose mothers to life-threatening conditions, like an atonic uterus, and deep tears of the vaginal walls.

#### **4.4.6 Supporting breastfeeding**

It has been reported on numerous occasions in the literature that early initiation of breastfeeding within the first hour after delivery could help in the prevention of maternal

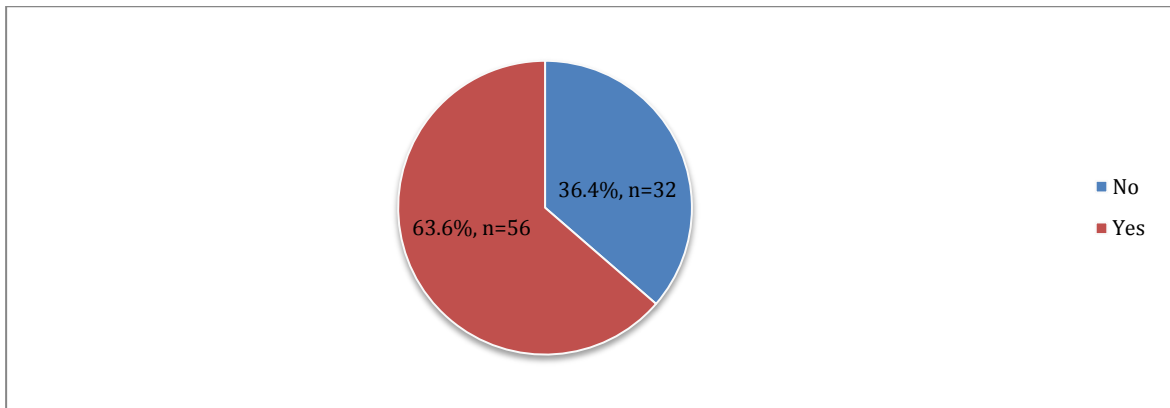
and neonatal deaths (WHO 2014:3). Figure 4.6 presents the practice of assisting mothers to breastfeed within the first hour after birth. About 30.7% (n=27) of the respondents of this study stated they were promoting and supporting early initiation of breastfeeding among women and infants within the first hour after delivery. However, 69.3% (n=61) of the respondents did not report that they support this intervention. This is a concern as not encouraging early initiation of breastfeeding may expose newborns to complications, such as hypoglycaemia.



**Figure 4.6: The practice of assisting mothers in breastfeeding**

**4.4.7 Service documentation**

Developing individualised care plans in partnership with mothers is vital for the provision of quality PNC (College of Registered Nurses of Nova Scotia 2012:4). About 63.6% (n=56) of respondents reported that documentation, including care planning is an essential intervention during the immediate PNC period, as it enables practitioners to be aware of the care they are required to offer to clients. However, 36.4% (n=32) did not indicate that documentation is important for quality PNC. The failure to document PNC services rendered to mothers implies that midwives could not provide holistic care. Figure 4.7 shows the proportion of the practice of documentation of PNC services among midwives.



**Figure 4.7: The practice of documentation of care**

#### **4.5 IMMEDIATE NEWBORN CARE OFFERED WITHIN 30 MINUTES AFTER DELIVERY**

The health of mothers undoubtedly has an influence on the well-being of their newborns, and this is particularly the case for mothers living with HIV (WHO 2014:4). In other words, the chances for neonates to survive can be determined by the physical well-being of their mothers. While this is the case, the well-being of neonates and their survival can also be influenced by the care offered by midwives shortly after delivery.

##### **4.5.1 Activity, pulse rate, grimace, appearance and respiration assessment**

Midwives are required to conduct APGAR assessments on neonates immediately after delivery. This involves assessment of activity (muscle tone), pulse rate, grimace (reflex irritability), appearance (skin colour) and respirations (APGAR), to ascertain newborns' adaptation to the extra-uterine environment. About 85.2% (n=75) of respondents recognised that the APGAR assessment is a critical intervention that should be offered to newborns. However, 14.8% (n=13) of the midwives showed limited knowledge of this intervention. This has implications for practice, as this group of midwives is probably not conducting this APGAR adequately because of limited knowledge and skill of the same.

##### **4.5.2 Breathing initiation support**

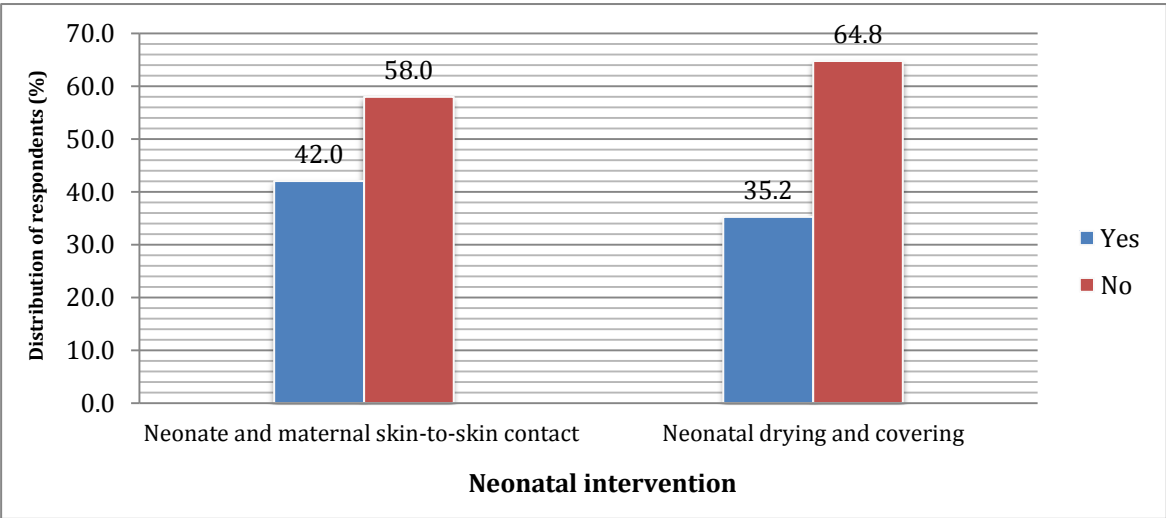
Breathing allows blood to be pumped to the lungs to help with the exchange of oxygen and carbon dioxide. Air often moves into the lungs of the neonate for the first time after delivery, and midwives needs to support this process of initial breathing of newborns.

About 55.7% (n=49) of respondents mentioned that supporting the neonates in the initial process of breathing is a lifesaving intervention. However, a large number of respondents (44.3%, n=39) did not seem to agree with this view, as they failed to indicate or mention the lifesaving role of offering breathing support to neonates during the interviews.

**4.5.3 Temperature conservation: skin-to-skin and drying the neonate**

It is consistently reported in the literature that the change of environment for neonates, from the warm intrauterine life to extra-uterine life, exposes the neonates to the risk of hypothermia (Freer & Lyon 2011:126). Approximately, 42.0% (n=37) of respondents mentioned that placing the baby, in contact with the mother’s abdomen immediately after delivery is a lifesaving intervention, respondents asserted that it helps babies to conserve heat. The majority of respondents (58.0%, n=51), however, did not report that such an intervention helps neonates to conserve heat.

Another intervention that helps babies to conserve heat after delivery is ‘drying of the baby and covering the same with warm clothes’. However, in this study, the majority of the respondents (64.8%, n=57) did not consider this intervention important for heat conservation. Figure 4.8 presents the practice of skin-to-skin contact and drying of babies after delivery by midwives.

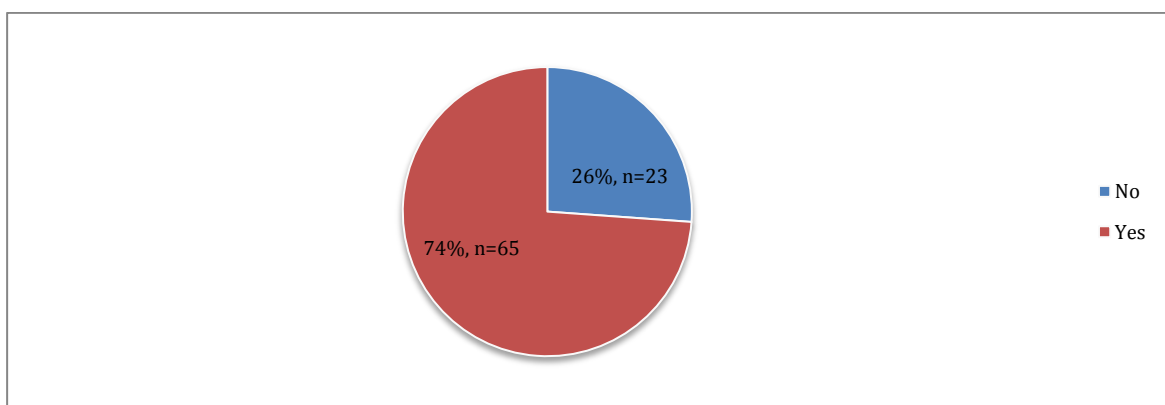


**Figure 4.8: The practice of skin-to-skin contact and drying of neonates**



#### 4.5.4 Neonatal physical examination

Claims are made in the literature that there is always a need to conduct a physical examination on newborns immediately after childbirth (ICM 2013:16). This is because conducting physical assessments on neonates shortly after birth would enable midwives to identify and treat life-threatening conditions, such as birth asphyxia. While 74% (n=65) of respondents agreed with this assertion, 26.0% (n=23) were not in favour of this view. This indicates the majority of respondents were more likely to physically assess the neonates, and thus, they might have prevented at least some life-threatening conditions. Figure 4.9 shows the proportions of midwives who reported practicing neonatal examination.



**Figure 4.9: Midwives' practice of neonatal physical examination**

#### 4.5.5 Prophylaxis provision

As part of best midwifery practice infants should be given tetracycline eye ointment and a vitamin K 0.5-milligram injection irrespective of their HIV-exposure status (WHO 2014:7). All babies born from HIV-positive mothers should be given, as part of best midwifery practice, infant nevirapine prophylaxis immediately after delivery. The majority of respondents (86.4%, n=76) mentioned that newborns were to be provided with eye ointment prophylaxis, but 13.6% (n=12) of the respondents did not mention this at interviews. It was stipulated by the majority of respondents (81.8%, n=72) that vitamin K should be administered to infants immediately after delivery. However, about 18.2% of the respondents did not support this intervention, namely administration of vitamin K to infants immediately after delivery. Respondents emphasised that failing to offer vitamin K to infants would put them at risk of bleeding to death even when delivered by

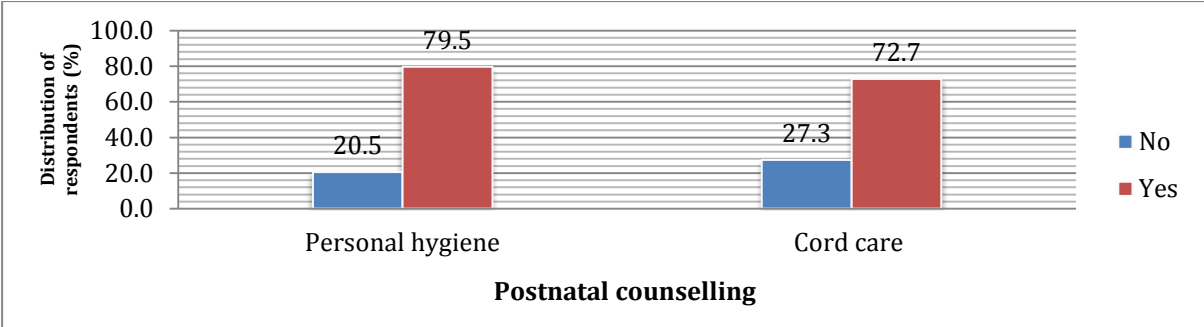
professionals. The literature is clear about the need to initiate infant nevirapine prophylaxis to HIV-exposed infants prophylaxis immediately after delivery (WHO 2014:5). About 60.2% of respondents agreed with this, while 39.8% (n=35) did not support this view.

**4.6 IMMEDIATE POSTNATAL CARE COUNSELLING WITHIN THE FIRST 30 MINUTES AFTER CHILDBIRTH**

Apart from the provision of physical treatment and care, the provision of psychological support, such as counselling (on areas like personal hygiene, cord care, newborn danger signs, infant feeding and maternal danger signs) was considered by respondents as an important intervention for mothers in the postnatal phase.

**4.6.1 Personal hygiene and cord care**

There was some agreement among respondents that HIV-positive mothers are vulnerable to sepsis. The majority of respondents (79.5%, n=70) offered counselling to mothers on personal hygiene, and encouraged the use of saline sitz baths. However, 20.5% (n=18) of respondents did not value the importance of providing information on how to maintain good hygiene and using saline sitz baths. It was noted in this study that counselling on cord care was an essential service for mothers during the immediate postnatal period in preventing postpartum infections. While 72.7% (n=64) of respondents agreed with this, 27.3% (n=18) did not believe that mothers should be counselled on cord care during the PNC period; as such some newborns were put in risk of developing infection of the cord stump. Figure 4.10 presents the proportions of midwives’ counselling practice on personal hygiene and cord care.



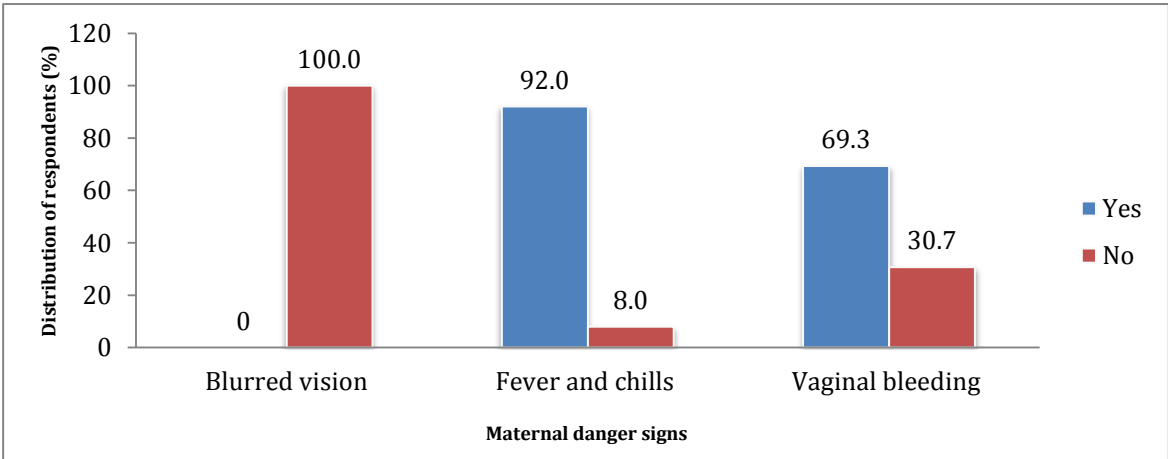
**Figure 4.10 Midwives’ counselling practice on personal hygiene and cord care**

In addition to counselling on cord care, respondents repeatedly talked about counselling on maternal and newborn danger signs. They believed that these care activities should be an integral part of immediate PNC.

**4.6.2 Maternal danger signs**

A good proportion of respondents (92.0%, n=81) were of the view that offering counselling on the indications of fever (one of the maternal danger signs to mothers) could avert maternal deaths. However 8.0% (n=7) of the respondents did not agree with this view. Respondents noted that timely detection of vaginal bleeding and prompt intervention could prevent maternal deaths. While the majority of respondents (69.3%, n=61) have counselled mothers on the danger of vaginal bleeding, 30.7% (n=27) of respondents have not offered this type of counselling to mothers.

According to the WHO (2014:11) the provision of education to mothers on the possible indications of headaches or blurred vision during PNC is necessary for the prevention of maternal morbidity, and subsequent mortality. The respondents of this study (100%, n=88) failed to offer information to mothers on blurred vision. Figure 4.11 presents the proportions of maternal danger signs in line with the provision of counselling during the first thirty minutes after delivery.



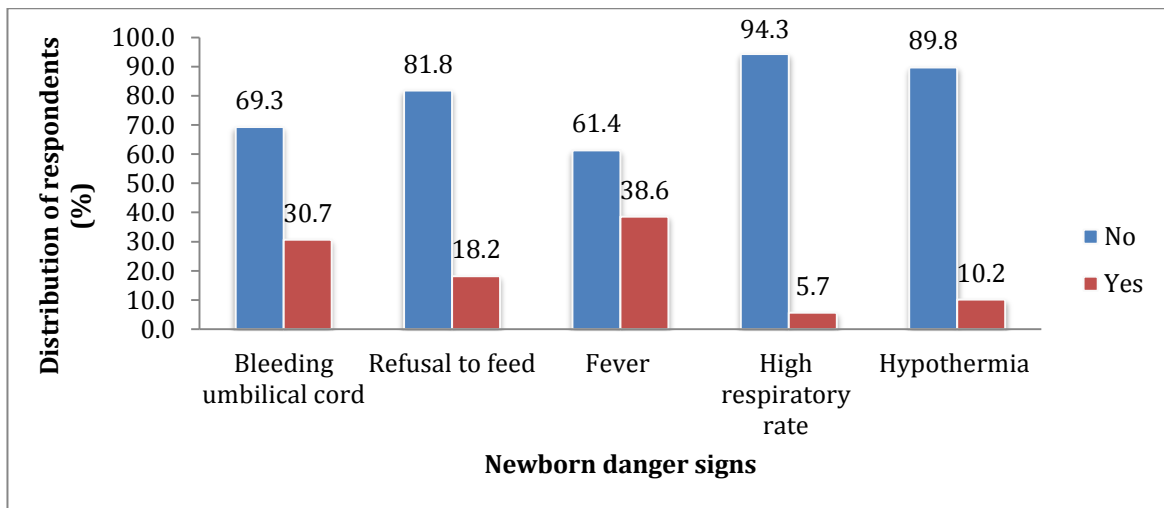
**Figure 4.11: Maternal danger signs in line with the provision of counselling**

### 4.6.3 Newborn danger signs

Newborns usually die from occurrences, such as hypothermia, fever and umbilical cord bleeding (Wardlaw et al 2014: 2). The majority of the respondents (89%, n=79) failed to provide information on hypothermia. Added to this, 94.3% (n=83) of the respondents also failed to provide information on indications of high neonatal respiratory rate. An increase in temperature of newborns immediately after delivery could indicate infection. Urgent interventions are needed in such instances if the lives of newborns are to be saved. Respondents emphasised the need to teach mothers to take note of changes in temperature of their babies. However, 61.4% (n=54) of the respondents did not report that they taught the women how to take note or measure this danger sign.

Respondents in this study revealed that early breastfeeding of newborns, particularly within the first hour after delivery was crucial to sustain blood glucose in the newborn (KoS, MoH 2010a:46). Newborns' refusal to feed during the first few hours after delivery could have detrimental effects on their lives. Such effects could include hypoglycaemia. Therefore, mothers should be made aware of danger signs in order to seek timely assistance if indicated. About 81.8% (n=72) of respondents reported that they had not offered information to mothers about hypoglycaemia.

Any form of bleeding of newborns could be fatal. Therefore, midwives should advise mothers or provide them with information on the need to prevent bleeding as much as possible. In this study, emphasis was made on the need to inform mothers of the dangers of bleeding of newborns, particularly from the cord stump. Despite this, about 69.3% (n=61) of respondents reported that they did not provide information on this matter. This suggests that only a small number of respondents (30.7%) provided such information. Figure 4.12 shows the proportion of information provided on infants' danger signs.



**Figure 4.12: Proportions of information provided on infants' danger signs**

#### **4.6.4 Adherence to antiretroviral drugs and infant feeding**

There was agreement among some respondents on the role of midwives in promoting adherence to medication among mothers. They emphasised that it is the responsibility of midwives to ensure that mothers adhere to their medication. The majority of respondents (87.5%, n=77) counselled HIV-positive mothers on the importance of taking their medication. Only 12.5% (n=11) of respondents failed to do so.

Respondents reiterated that midwives are required to advocate for exclusive breastfeeding of infants for the first six months of life. Approximately 60.2% (n=58) of respondents reported providing information to mothers on infant feeding choices: exclusive breastfeeding or exclusive replacement feeding. This implies that 38.6% (n=30) of respondents did not give any information on infant feeding to mothers.

It was noted in this study that mothers generally stay in health facilities for a short period after childbirth. This indicates that mothers and their newborns were usually discharged from hospital within the immediate postnatal period, which is within 24 hours after delivery. Early discharge from health facilities is a function of a multiple of factors, and example of such factors is the limited number of space in the maternity units. Acknowledging this, midwives are required to provide quality PNC to mothers who are discharged from health facilities (KoS, MoH 2011a:1-3).

### 4.7 PRE-DISCHARGE POSTNATAL CARE SERVICES FOR MOTHERS

Midwives should provide quality PNC interventions to mothers and infants during the pre-discharge period. A number of PNC services should be offered to mothers before they leave hospitals. These are maternal vital signs assessment, uterine contraction, and physical examination.

#### 4.7.1 Maternal vital signs assessment

A large number of respondents (88%, n=78) mentioned that they generally measure the temperature of mothers on discharge from the health facilities. Maternal pulse is another parameter that midwives are required to measure when discharging mothers from health facilities. About 58.0% (n=51) of respondents claimed that they measured maternal pulse during the pre-discharge period, while 42% (n=37) of respondents did not do so. The majority of the respondents (96.6%, n=85) reported that they measured the blood pressures of mothers on discharge from hospitals. Approximately, 43.2% of the respondents reported that they monitored maternal respiratory rate, but 56.8% of respondents did not see the importance of monitoring maternal respiratory rate on discharge. Figure 4.13 shows maternal vital assessment by midwives on discharge from health facilities.

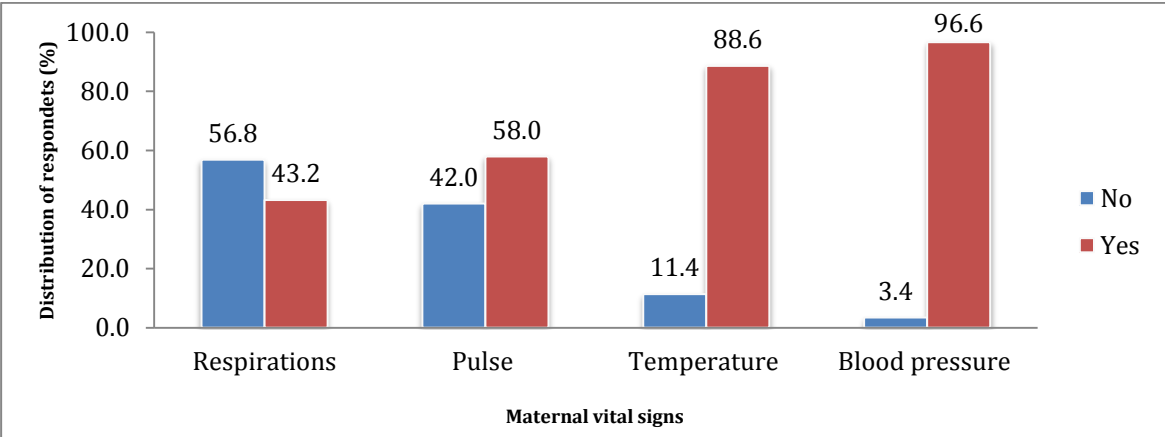


Figure 4.13: Assessment of maternal vital signs on discharge from hospital

#### **4.7.2 Maternal physical examination**

Respondents claimed that maternal physical examination could enable midwives to identify complications early and manage the same before they become life-threatening. The majority of the respondents (73.9%, n=65) reported that they physically examined mothers in the postnatal period. Examples of physical examinations carried out include physical and pelvic examination. About 26.1% (n=23) reported that they have not conducted physical examinations on mothers in the postnatal phase. Respondents talked about pelvic examination and 87.5% (n=77) of them reported that they have conducted this type of examination. But, 12.5% (n=11) of the respondents did not report anything on pelvic examination.

It was repeatedly mentioned by respondents that midwives should conduct uterine contraction assessment on every mother before discharge from hospital. Even though this is generally the case in Swaziland, 44.5% (n=39) of the respondents did not include uterine contraction assessment in the package of care they offered to mothers on discharge.

#### **4.7.3 Drug administration**

The outcome of this study revealed that HIV-positive mothers are required to adhere to the directions of their prescribed medication. Doing so would not only prevent drug resistance, but it would also reduce the risk of MTCT of HIV. Thus, midwives are required to promote mothers' adherence to treatment, including ARV medication. About 51.1% (n=45) of the respondents did not offer these medications or advice on treatment to HIV-positive mothers on discharge from the postnatal wards.

Respondents also talked about analgesics or painkillers, as mothers sometimes sustain injuries of the nerve endings during childbirth. Respondents claimed that this might require the provision of oral analgesics. But, 67.0% (n=59) of the respondents reported that they had not yet provided analgesics to mothers in the postnatal phase.

### 4.8 PRE-DISCHARGE NEWBORN CARE

Respondents talked about specific interventions that should be provided to neonates before discharge from hospital. Examples of these are measurement of vital signs, physical and cord assessment, and vaccine administration.

#### 4.8.1 Neonatal vital signs assessment

About 94% (n=83) of respondents mentioned that they measured the temperatures of newborns before discharge from hospital. With regard to measurement of pulse rates, 71.6% (n=63) of respondents reported that they were not measuring pulse rates on discharge. In relation to neonatal respiration rate measurements, 70.5% (n=62) of respondents did not see this category of measurements as part of the routine assessment activities for infants on discharge from hospital. Figure 4.14 shows the proportions of neonatal vital signs assessment on discharge.

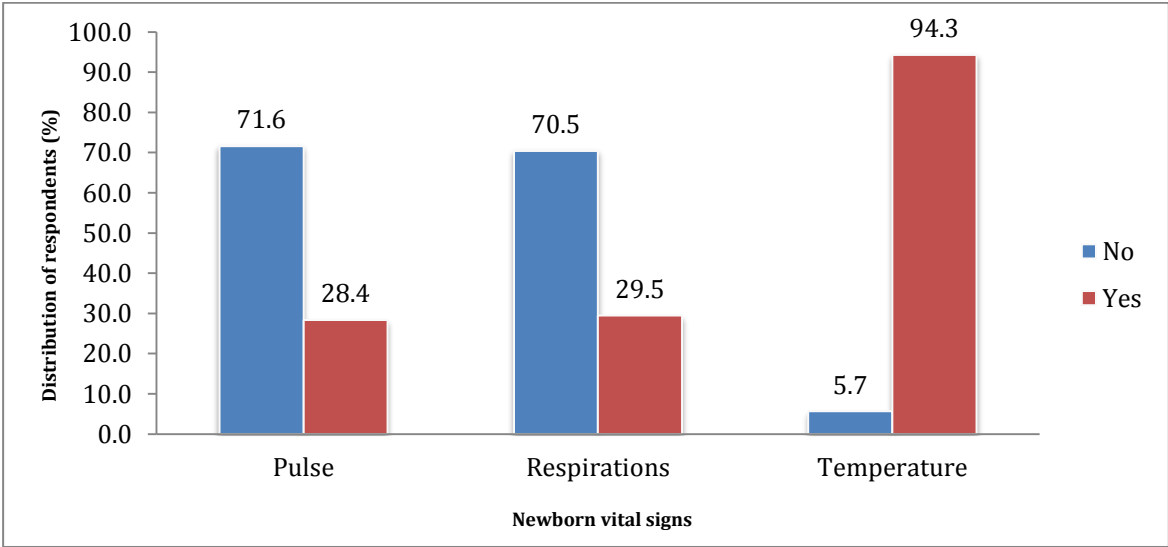


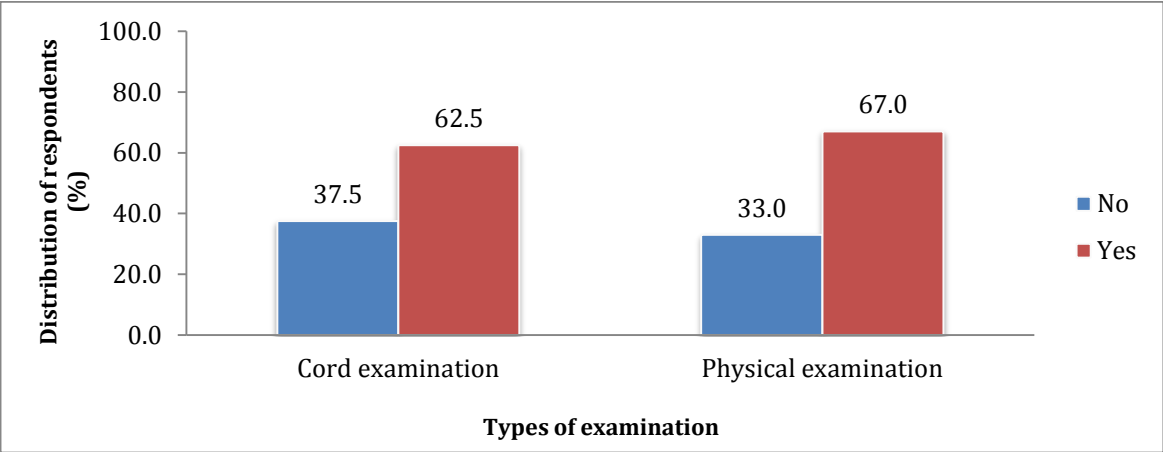
Figure 4.14: Neonatal vital signs assessment on discharge

#### 4.8.2 Neonatal physical assessment and cord examination

Respondents talked about the need for the provision of a comprehensive neonatal physical examination before discharge from hospital. The majority of the respondents (67.0%, n=59) reported that they regularly conduct physical examinations on neonates on discharge. However, 33.0% (n=29) of the respondents reported that they often fail to carry out physical examinations on neonates on discharge. About 37.5% (n=33) of the



respondents have not carried out a newborn physical examination. This category of midwives may put infants at risk of bleeding and /or cord stump infection. Respondents considered neonatal cord examination an important role of midwives. The majority of respondents (62.5%, n= 55%) conducted cord assessment on newborns on discharge from health facilities. Figure 4.15 shows the proportions of newborn physical assessment and cord examination on discharge.



**Figure 4.15: Physical and cord examination on discharge**

**4.8.3 Drugs and vaccine administration**

It was repeatedly noted in the literature that therapeutic drug or vaccine administration to newborns could prevent neonatal complications (WHO 2014:3–7). It was therefore recommended for neonates to be vaccinated against diseases, such as tuberculosis and poliomyelitis (WHO 2014:5). The majority of the respondents (86.4%) have vaccinated neonates against tuberculosis and poliomyelitis. About 13.6% (n=12) of the respondents have not vaccinated neonates against diseases, tuberculosis and poliomyelitis. In relation to the administration of prophylaxis, 51.1% (n=45) of the respondents reported that they have not administered nevirapine to HIV-exposed infants. But 48.9% (n=43) of the respondents claimed to have done so.

**4.9 PRE-DISCHARGE POSTNATAL CARE COUNSELLING**

Pre-discharge postnatal counselling involves the provision of support and information to mothers on areas, such as hygiene, cord care and infant feeding. Discussions relating to this category of counselling are presented below.

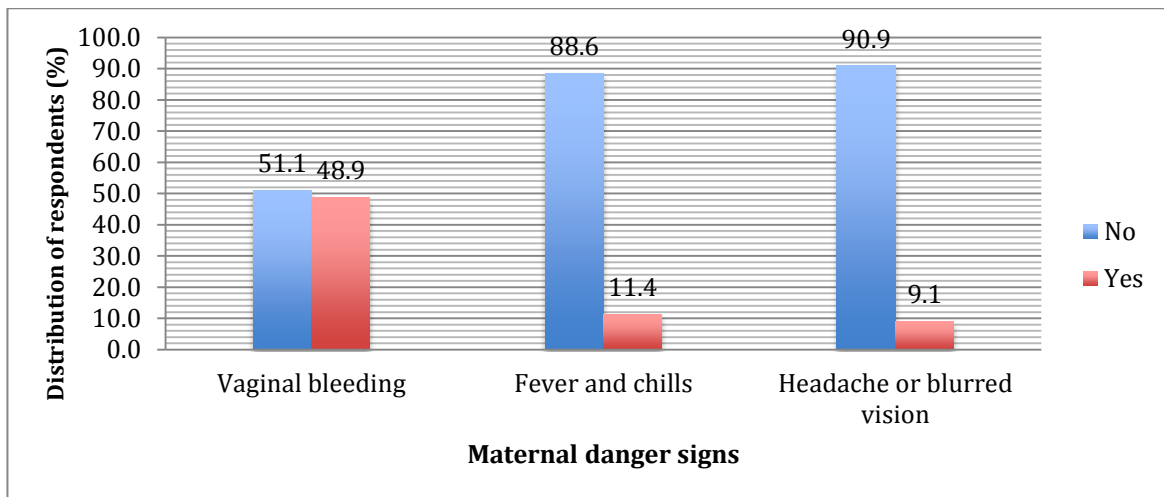
#### **4.9.1 Hygiene and cord stump care**

Say et al (2014:e327) have revealed that puerperal sepsis is the third global leading cause of maternal deaths and the first cause of neonatal mortality. Good personal hygiene is one major strategy for preventing or reducing maternal and neonatal infections. It is therefore, necessary for midwives to educate mothers on the need to maintain a good personal hygiene. The majority of respondents (87.5%, n=77) mentioned that educating HIV-positive mothers on how to maintain a good hygiene is a component of the package of services midwives are required to offer to mothers on discharge from hospital.

Claims were frequently made by the respondents that a moist cord stump is a conducive environment for bacterial growth. It is therefore critical, some respondents reiterated, for neonates to be offered quality cord stump care. They went on to state that such an approach would prevent cord infections and save the lives of newborns. The study revealed that 80.7% (n=71) of the respondents reported that they had offered health education to mothers on cord care. However, 19.3% (n=11) of the respondents have not offered health education to mothers in this area of midwifery practice.

#### **4.9.2 Maternal danger signs**

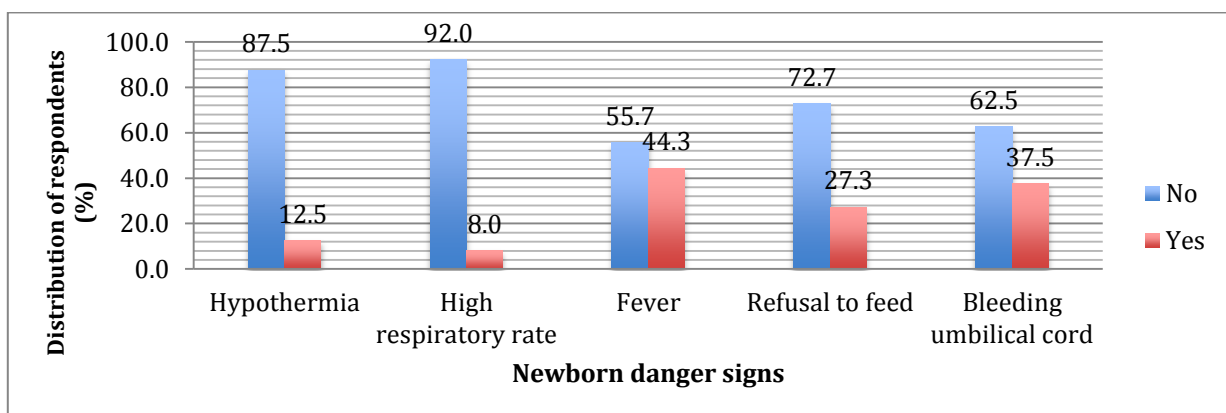
About 50% (n=45) of the midwives who participated in this study mentioned that they were not routinely teaching mothers on the dangers of vaginal bleeding. The majority of respondents (88.6%, n=78) reported that they did not offer information or counselling to mothers on fevers and chills. Similarly, a significant proportion of the respondents (90.9%,n=80) reported that they did not offer information on headaches and/or blurred vision to mothers. Figure 4.16 shows the proportions of counselling on maternal danger signs on discharge from hospitals.



**Figure 4.16: Counselling on maternal danger signs on discharge**

### 4.9.3 Newborn danger signs

The majority of the respondents (87.5%, n=77) mentioned the need for counselling mothers on hypothermia. However, 12.5% (n=11) of the respondents did not see the need for such counselling, and hence failed to offer health education to mothers. It was noted by some respondents that fever is another newborn danger sign that could indicate infection. Although this was the case, 44.3% (n=39) of the respondents did not report about counselling of mothers routinely on this newborn danger sign. About 72.7% (n=64) of the respondents did not offered counselling to mothers on infants problems with feeding. Added to this, a good number of the respondents (62.5%, n=55) did not offer counselling on cord bleeding to mothers. Figure 4.17 shows the proportion of respondents and counselling offered on newborn danger signs.



**Figure 4.17: Counselling on newborn danger signs on discharge**

#### **4.9.4 Immunisation, prophylaxis schedule, safe infant feeding and adherence to antiretroviral drugs**

Some respondents stressed that all infants exposed to HIV should be initiated on nevirapine prophylaxis at birth, and to continue with the same for at least six weeks. A good number of respondents (77.3%,n=68) provided information to mothers about this prophylaxis, including its dosing and schedule. The majority of respondents (71.6%, n=63) reported that they provided information on immunisation to mothers on discharge from health facilities. However, 29.5% (n=26) of respondents failed to do so.

According to some respondents, the aim of ARV drug administration to breastfeeding mothers is to prevent MTCT of HIV, and promote the physical well-being of HIV-positive mothers. Most of the respondents (87.5%, n=77) reported that they were routinely offering treatment adherence counselling to HIV-positive mothers before discharge from hospital. However, about 12.5% (n=11) of the respondents did not offer this form of counselling to the mothers. The respondents stated that good infant feeding options could help to prevent malnutrition. Approximately, 62.2% (n=60) of respondents offered counselling on good infant feeding to mothers, and about 31.8% (n=28) of the respondents did not offer such counselling.

#### **4.9.5 Family planning and nutrition and its importance**

Claims were made by some respondents that educating mothers on family planning is an important intervention, as such an approach would help prevent unwanted pregnancies as well as reduce the incidence and prevalence of MTCT of HIV. Even though this is the case, the majority of respondents (63.6%, n=56) did not provide information on family planning to mothers before discharge from hospital. Added to this, most of the respondents (76.1%, n=67) also did not offer dietary advice to HIV-positive mothers, including the importance of nutrition for their physical well-being. However, a minority (23.9%, n=21) reported to have offered counselling to HIV-positive mothers on the importance of nutrition on enhancing mental and physical well-being.

#### **4.10 CHALLENGES OF POSTNATAL CARE PROVISION**

According to some respondents, the frequent early discharge of mothers from maternities in Swaziland after delivery is a function of the limited number of admission beds in the health facilities. Respondents were asked about the average time at which mothers were discharged from their health facilities after delivery. They stated that most mothers and newborns were discharged within 12–24 hours after delivery. They also mentioned that some mothers were even discharged between 6 and 12 hours after delivery. However, it was noted in the outcome of this study that mothers and their babies were sometimes admitted for prolonged periods. Respondents claimed that the length of stay was generally determined by the health status of mothers and infants.

Apart from the challenges mentioned above, it was also noted that the maternities in Swaziland were exposed to a range of other challenges. These included shortage of human resources, drugs and supplies. There is a lack of guidance on how quality PNC can be provided. A respondent reiterated:

“there is a serious shortage of guidelines regarding postnatal care to be provided to mothers and neonates”.

The in-service training and education offered in the maternities are also a concern as expressed by some respondents.

“The nurse managers determine who attend the in-service training and education. This is not determined by the need of the maternities. This is a concern”.

#### **4.11 PREPAREDNESS OF HEALTH FACILITIES TO PROVIDE IMMEDIATE POSTNATAL CARE SERVICES**

Senior midwives were asked on the preparedness of health facilities to provided quality immediate PNC. The respondents stated that the major influencing factor for the provision of quality immediate PNC was the availability of resources in health facilities. The resources include human, material and organisational. The presentation here includes monitoring and evaluation of immediate PNC services as a strategy to improve

quality immediate PNC provided by midwives to mothers and infants. In addition, the linkage of immediate PNC with communities is discussed.

#### **4.11.1 Basic requirements for provision of quality immediate PNC: human, material and organisational resources**

All of the senior midwives (100%, n=6) reported that they had midwives working in their maternities. However, 83.3% of the respondents mentioned that they were short-staffed. Of note was that 16.7% reported to be well staffed. All the study sites (100%, n= 6) had a constant PNC-related supplies, such as drugs and equipment. Examples of these include nevirapine clips, nevirapine syringe, HIV test kits (Uni-gold and Determine), disinfectants, ARV drugs (nevirapine tablets and syrup, zidovudine and lamivudine), examination bed, electricity, steriliser, and 'safe water'. It was reported by the senior midwives that all the health facilities (100%, n=6) had essential medicines. Examples of these include immunisation vaccines, intravenous fluids, antibiotics, hypertensive drugs (magnesium sulphate and Aldomet) and analgesics.

The respondents mentioned that continuity of immediate PNC services requires the availability of antenatal care cards, child welfare cards, and PNC registers. Organisational resources were available in all of the study sites. The other key organisational resource that was identified in this study was the availability of PNC guidelines to provide standard healthcare interventions. This study found that none of the health facilities had PNC guidelines.

#### **4.11.2 Monitoring and evaluation of postnatal care services**

The senior midwives stated that monitoring and evaluation of healthcare services were key activities in ensuring promotion, replication of best practice, and identification of areas for improvement. The majority of respondents (66.6%, n=4) reported that they were submitting PNC reports on a monthly basis to the Ministry of Health Monitoring and Evaluation Unit. The remaining 33.4% (n=2) failed to do so. This study found that 83.3% (n=5) of the health facilities were capturing maternal and infant deaths through maternity registers.

Another crucial quality improvement approach for PNC intervention identified in this study was having in place an effective quality assurance mechanism. However, this study found that the majority of the health facilities (83.3%, n=5) were not conducting any quality improvement activity. It was done in only one health facility. Client satisfaction was recognised by this study as a key strategy for the improvement of healthcare services. It was noted that about 33.4% (n=2) of the healthcare facilities were conducting their clientele satisfaction survey through suggestion boxes. This means that most (66.6%, n=4) of the healthcare facilities did not probably consider the perceptions of their clients in the provision of care; and this could result into the continuous provision of poor PNC without feedback from clients.

#### **4.11.3 Communications and referral modes and linkages of maternity services with the community**

The senior midwives emphasised that good and effective means of communications were to be made accessible and available in maternity units to promote communication between professionals of the healthcare facilities. The study revealed that 83.3% of the facilities had an ambulance or car to transfer clients. It was reported that all the healthcare facilities (100%, n=6) had functioning telephones. In addition, 90% (n=5) of the respondents reported that their clients were satisfied with the services they were provided. One midwife said,

“Most of my clients expressed their appreciation and this makes me to think that I am doing the right thing”.

This study found that the majority of the health facilities (83.3%, n=5) were linked to their communities through expert clients. The senior midwives reported that referrals to the levels of care in maternity units must be based on the healthcare needs of clients. This could help with the timely referral of complicated cases, and subsequent prevention of maternal or neonatal deaths.

#### **4.12 HYPOTHESIS TESTING: STATISTICAL FINDINGS**

The study used one inferential statistical test, the Kruskal-Wallis test. The latter is presented in section 4.12.1.

#### 4.12.1 Kruskal-Wallis test

The study had six null hypotheses that were tested.

H01 There is no difference between the age of midwives and their knowledge of PNC required to be provided to mothers immediately after childbirth.

The results from a Kruskal-Wallis test suggested that there was no significant difference between the age of midwives and their knowledge of PNC interventions to be offered to mothers immediately after delivery (Kruskal-Wallis test:  $\chi^2=5.974$ ,  $df=3$ ,  $p=0.113$ ). However, an inspection of the mean ranks for the groups suggested that midwives in the age group 30–39 years had the highest scores (51.32) on the provision of immediate PNC to mothers whilst midwives in the age group 29 years and younger had the lowest scores (38.79).

H02 There is no difference between the type of qualification of midwives and the knowledge of PNC required to be provided to mothers immediately after childbirth.

The study found that there was no significant difference between the type of qualification of midwives and the knowledge of PNC interventions to be offered to mothers immediately after delivery across different qualifications held by the midwives (Kruskal-Wallis test:  $\chi^2=5.498$ ,  $df=2$ ,  $p=0.064$ ). Table 4.5 presents the findings from the Kruskal-Wallis test. A close examination or inspection of the mean ranks for the groups suggested that midwives with advanced midwifery certificates had the highest scores (73.75), whilst, state-registered midwives with post-graduate certificates had the lowest scores (41.03).



**Table 4.5: Kruskal-Wallis test: the difference between respondents' qualification and knowledge of PNC interventions to be offered to mothers immediately after delivery**

Type of respondents' qualification	N	Mean rank
State-registered midwives with certificates	62	41.03
State-certified midwives with bachelor's degrees	24	51.02
State-registered midwives with advanced midwifery certificates	2	73.75
<b>Total</b>	<b>88</b>	
Kruskal-Wallis test: chi-square=5.498, df=2, p=0.064		

H03 There is no difference between the years of experience of midwives and the knowledge of PNC required to be provided to mothers immediately after childbirth.

The results from a Kruskal-Wallis test suggested that there was no significant significant difference between the years of experience of midwives and their knowledge of PNC interventions to be offered to mothers immediately after delivery (Kruskal-Wallis test:  $\chi^2=6.932$ ,  $df=3$ ,  $p=0.074$ ). An inspection of the mean ranks for the groups suggested that the group with a high number of years' experience (6 years and above) had the highest scores (63.75) while the group with lower number of years' experience (0–2 years) had the lowest scores (31.03).

H04 There is no difference between the years of experience of midwives and the knowledge of PNC required to be provided to infants immediately after childbirth.

The results from a Kruskal-Wallis test suggested that there was no significant difference between the years of experience of midwives and their knowledge of PNC interventions to be offered to HIV-exposed infants immediately after delivery (Kruskal-Wallis test:  $\chi^2=3.519$ ,  $df=3$ ,  $p=0.318$ ). An examination of the mean ranks for the groups suggested that the group with a high number of years' experience (6 years and above) had the highest scores (51.32), while the group with a lower number of years' experience (0–2 years) had the lowest (38.55).

H05 There is no difference between the institution of training of midwives and the knowledge of PNC required to be provided to infants immediately after childbirth.

The results from a Kruskal-Wallis test suggested that there was no difference between the institution of training of midwives and the knowledge on PNC interventions to be offered to infants immediately after delivery across institutions where midwives were trained ( $\chi^2=3.302$ ,  $df=2$ ,  $p=0.192$ ). A closer look at the mean ranks for the groups suggested that midwives who were trained outside Swaziland had the highest scores (55.25), whilst the group trained in the Southern African Nazarene University had the lowest scores (39.52). Table 4.6 presents the findings from a Kruskal-Wallis test.

**Table 4.6: Kruskal-Wallis test: difference between respondents' training institutions and knowledge of PNC interventions to be offered to HIV-exposed infants**

Training institution	N	Mean rank
Southern African Nazarene University	29	39.52
University of Swaziland	47	44.83
Outside Swaziland	12	55.25
<b>Total</b>	<b>88</b>	
Kruskal-Wallis test: $\chi^2=3.302$ , $df=2$ , $p=0.192$		

H06 There is no difference between the place of work of midwives across health facilities and the knowledge of PNC required to be provided to mothers immediately after childbirth.

The results from a Kruskal-Wallis test suggested that there was no significant difference between the place of work of midwives across healthcare facilities and their knowledge of PNC interventions to be offered to mothers immediately after delivery. However, a closer look at the mean ranks for the groups suggested that midwives at facility C had the highest knowledge scores (54.38), whilst midwives who were working at facility D reported the lowest knowledge scores (24.92).

#### 4.13 CONCLUSION

This chapter highlighted competencies required of midwives during the provision of immediate PNC to mothers and neonates. It also identified gaps in the knowledge and practices of midwives during the provision of immediate PNC to mothers and their newborns. The next chapter discusses the findings of the study.

## **CHAPTER 5**

### **DISCUSSION OF FINDINGS**

#### **5.1 INTRODUCTION**

The findings of this study are presented in the preceding chapter four. This chapter offers discussions of the findings using the extant literature. The findings are discussed here under headings or categories in the order in which they are presented in chapter four. These categories or headings include:

- Characteristics of respondents
- Maternal and newborn care immediate PNC services provided within 30 minutes after childbirth
- Immediate PNC counselling rendered within the first 30 minutes post-delivery
- Pre-discharge PNC for mothers and newborns including counselling
- Guidance on the provision PNC services
- Preparedness of health facilities to provide immediate PNC services
- Challenges and strategies to improve PNC provision in Swaziland

#### **5.2 CHARACTERISTICS OF RESPONDENTS**

This discussion focuses on the respondents' qualifications, years of experience working in PNC services, and capacity building activities in relation to PNC.

##### **5.2.1 Education and experience**

In Swaziland, there are two institutions for midwifery training: the University of Swaziland, and the Southern African Nazarene University. More than half of the respondents (53.4%) were trained at the University of Swaziland, 33.0% were trained at the Southern African Nazarene University, and 13.6% were trained outside Swaziland. Because these practitioners were trained in midwifery and demonstrated clinical competence, they were expected to provide high-quality immediate PNC services, a view acknowledged by the Kingdom of Swaziland's Ministry of Health (KoS, MoH

2011b:25). It is worth noting that the midwifery training in the Kingdom of Swaziland mainly assumes a didactic format. Discussions are noted in the literature sources about the role of didactic training in enhancing clinical competence of midwives. For instance, Narchi (2011:24) states that didactic training alone cannot generate clinical expertise in midwifery. This suggests that other forms or approaches to teaching and learning are needed to compliment the didactic styles frequently used in the Kingdom of Swaziland. It is for this reason that Narchi (2011:24) reiterates that midwifery is a practice-based profession, and its training requires student midwives to acquire clinical experience. The acquisition of clinical experience and theoretical knowledge in the classroom enables the student midwives on registration to be fit for purpose, practice and award. Although this is the case, it is stated that clinical judgment and the provision of quality care by midwives could also develop when these practitioners begin to test and refine both theoretical and practical knowledge in actual clinical situations under the supervision of mentors (Narchi 2011:24).

All the respondents in this study had the requisite training in midwifery, and had the acquired relevant qualifications. Examples of the qualifications gained include a post-graduate diploma certificate in midwifery, and a bachelor's of science degree in midwifery. The Swaziland Nursing Council recognises these qualifications, and hence, all the respondents were licensed to practice midwifery in in the Kingdom of Swaziland, and they are therefore expected to adhere to the essential competencies for immediate PNC (ICM 2013:1). It is critical to note that most of the respondents (78.4%) had adequate and relevant clinical experience that is necessary for the provision of quality midwifery care. The respondents in question had over two years of post-registration clinical experience. Midwives with this length of clinical experience are expected to provide quality immediate PNC to mothers and newborns. However, the provision of quality PNC services was not consistent across all the respondent midwives. This suggests that some of the midwives were more competent than others, and hence the need for ongoing in-service training for this professional group in order to enhance the skills and knowledge of the same.

### **5.2.2 In-service capacity building for midwives**

Midwifery, like all practice-based professions, is usually subjected to frequent changes because of the frequent requests for quality care provision from members of the public

and clients (Norushe, Van Rooyen & Strumpher 2004:64). Acknowledging this, there is always a need for midwives to update themselves with the best available evidence in order to provide quality care that is individualised and tailor-made to address clients' needs. It was therefore not surprising for respondents of this study to emphasise the need to be provided with the most recent quality evidence. Examples of such evidence relate to the 2013 WHO guidelines on PMTCT (WHO 2013a). The WHO guidelines (WHO 2013a) formed an integral part of the in-service training offered to midwives in the Kingdom of Swaziland. Respondents stated that the WHO guidelines (WHO 2013a) enabled them to make evidence-based clinical judgements in the delivery of immediate PNC to mothers and newborns, a view also echoed in Norushe et al. (2004:63). They also went on to state that the in-service training they attended developed their skills and knowledge of PNC services.

Despite the integration of maternal, newborn and child health services with HIV programmes (Mazia et al. 2009:254), the outcome of this revealed that most of the in-service training on PNC offered focus HIV. This is probably the reason for the high maternal deaths in the postnatal period (KoS, CSO 2015b:11, KoS, MoH 2011a:3). Taking this into account, there is a need to realign the training programmes to focus on all aspects of PNC services' not just HIV. Doing so would result in skills and knowledge development of midwives in the areas of PNC services.

### **5.3 MATERNAL IMMEDIATE POSTNATAL CARE SERVICES WITHIN 30 MINUTES AFTER CHILDBIRTH**

According to the ICM (2013:1–14), midwives are healthcare professionals with the necessary skills and knowledge of quality PNC services required for mothers and infants. Given that most maternal and infant mortalities occur during the postnatal period, clinicians, academics and researchers are repeatedly making requests for the provision of quality care during this period (UNFPA, ICM & WHO 2014:8–9). Examples of quality care provision reported in this study involve measuring and monitoring of vital signs.

### **5.3.1 Assessment of maternal vital signs**

According to the ICM (2013:11) and the WHO (2014:3), midwives have the knowledge and skills required to provide quality immediate PNC, including vital signs (temperature, pulse, blood pressure and respiration). Based on the ICM list of competencies and evidence-based guidelines (NICE 2014, WHO 2014), midwives are critically aware that the assessment of maternal vital signs is essential for the care of mothers in the postnatal period. Thus, these parameters must be measured consistently and accurately, as failure to achieve this would hinder the provision of appropriate and timely immediate PNC interventions to mothers (London, Ladewig, Ball & Bindler 2007:578; Rose and Clarke 2010:11). During the postnatal period, the mother's reproductive organs revert back to the pre-pregnancy stage (London et al.2007:578). This physiological change has the potential of increasing the mothers' risk of infection, particularly those with a weakened immune system (HIV-positive mothers) (WHO 2014:1-11). Hence, assessment and monitoring of vital signs would help in the early diagnosis of potential life-threatening conditions, such as sepsis, hypertensive disorders and postpartum bleeding during the immediate PNC period (WHO 2014:7).

Sepsis is the second largest global cause of maternal deaths (KoS, MoH 2011a:6). Maternal temperature assessment would help in the diagnosis of puerperal sepsis. Making such a diagnosis would ensure timely provision of the treatment or management of infections related to puerperal complications. However, 50% of the midwives of the present study reported that they did not offer this basic lifesaving intervention to mothers (see section 4.4.1). The question now arises, how many mothers are discharged from maternity units with unidentified infections? Although an accurate response to this question was not the focus of the present study, it is critical to state that midwives should utilise their knowledge and physical assessment skills to assess the vital signs of mothers during the immediate PNC period, an assertion echoed by the ICM (2013:1–9) and Elliott and Coventry (2012:621).

Hypervolemia is a common condition among postpartum mothers (Say et al. 2014:e327), which is usually indicated by changes in heart rate caused by heavy bleeding. Failure to closely monitor and manage such bleeding could lead to or result in a fatal outcome, namely maternal death (Say et al 2014:e327). Midwives are critically aware of the importance of pulse, and they have the skills and knowledge of this

measurement (ICM 2013:7). Even though midwives are trained professionals on the importance of pulse assessment, and how to carry it out, only a small proportion of the midwives of this study reported to routinely offer this intervention (see section 4.4.1). This has implications for practice, as failure to engage in comprehensive assessment of vital signs, like pulse rate, could lead to maternal deaths as heart or blood circulation conditions might not be recognised (Fraser & Cooper 2009:653). This suggests that there is a high risk of puerperal complications if vital signs are not accurately assessed. Such practices are against the ICM list of competencies and best practices guidelines during the immediate PNC.

The assessment of blood pressure could help in the early diagnosis of hypertensive disorders, which are reported in the literature as among the leading global causes of maternal deaths (Say et al. 2014:e327). Blood pressure assessment does not only provide an indication of blood circulation patterns, but it also indicates cellular oxygenation levels (Rose & Clarke 2010:11). Taking this into account, it is critical for midwives to monitor and analyse changes in blood pressure levels of mothers, as changes may indicate underlying pathophysiology or the body's attempts to maintain homeostasis (Rose & Clarke 2010:11). Despite this assertion, some respondents (12.5%) of this study did not offer this intervention to immediate postpartum mothers (see section 4.4.1). This means that midwives might ignore assessment of puerperal mothers' blood pressure. It is critical to state that postpartum haemorrhage alone accounts for 34% of all maternal deaths globally (KoS, MoH 2011a:7; Say et al. 2014:e327). In Swaziland, it is the leading cause of maternal deaths (KoS, MoH 2011a:7). Thus, not measuring blood pressure of mothers in the postnatal period is a serious concern and a gap in the provision of immediate PNC.

Abnormal maternal respiratory rates and changes in respiration are a broad indicator of major physiological instability in mothers in the postnatal period (Rose & Clarke 2010:9). In many cases, respiratory rate is one of the earliest indicators of maternal instability during the immediate PNC period (Lowdermilk & Perry 2006:461). The guidelines on PNC recognise the importance of monitoring maternal respiratory rates (WHO 2014:5). The respiratory rate of postpartum mothers is a vital baseline observation (Rose & Clarke 2010:11). Its accurate assessment is a fundamental part of immediate PNC (Elliott & Coventry 2010:623; WHO 2014:4).

Measuring respiratory rates serves a number of clinical purposes for postpartum mothers, such as being an early marker of acidosis (Rose & Clarke 2010:11). Respiratory rate is a sensitive indicator of critical illnesses, as an increase in the postpartum client's normal rate by even three to five breaths per minute is an early and important sign of respiratory distress and potential hypoxemia (Elliott & Coventry 2010:623). Thus, it is important to monitor respiratory rate, as this will help to indicate the postpartum health status of mothers during the immediate PNC period. The present study confirms that respiratory rate assessment is often not recorded in clinical settings (Van Leuvan & Mitchell, 2008:112–113). This omission could lead to occurrence of postpartum respiratory distress, which in turn could lead to maternal deaths.

### **5.3.2 Postpartum haemorrhage: promoting uterine contraction**

Postpartum haemorrhage is the global leading cause of maternal deaths (Say et al. 2014:e327). The best preventive strategy to avoid the occurrence of postpartum bleeding is through active management of the third stage of labour (Anderson & Etches 2007:875; ICM 2013:14). According to the WHO (2014:1-11), examples of preventive interventions include uterotonic drug administration, fundal massage and placental delivery and examination. These interventions would help in the uterine contraction processes that in turn would prevent excessive bleeding (Murray & McKinney 2006:734).

Fundal massage is one of the valuable clinical interventions for the promotion of uterine contraction (Anderson & Etches 2007:876). Implementing this intervention would help prevent or reduce the incidence of maternal deaths associated with postpartum bleeding. Despite this, a significant proportion of respondents (76.1%) of in this study indicated that they did not offer fundal massage as an essential intervention for mothers in the immediate postpartum period (see section 4.4.2.2). Not offering fundal massage may expose mothers to the risk of postpartum haemorrhage and subsequent death. Taking into account the proportion of respondents who did not support fundal massage, it is not surprising to note a high maternal mortality ratio (593 per 100 000 live births) in Swaziland (KoS, CSO 2015b:11). An approach that might help in the reduction of this mortality rate is fundal message and hence the need for its inclusion in PNC.



According to the ICM and the International Federation of Gynaecology and Obstetrics (2013:1–2), midwives should palpate the uterus of the mother immediately after the birth of the baby to check for the presence of a second baby. Only when the midwife is certain that the uterus does not contain a second baby, can the midwife administer uterotonic drugs (ICM and the International Federation of Gynaecology and Obstetrics 2013:1–2). These drugs enable the uterus to continue contracting strongly and rhythmically after childbirth (ICM 2013:9).

According to KoS, MoH (2013b:16), oxytocin is the most available and used uterotonic drug in maternity units in Swaziland. Oxytocin is also recommended as the first-line of treatment for the prevention and management of postpartum haemorrhage (Anderson & Etches 2007:876). This drug is usually administered immediately after delivery of the baby to stimulate and enable the upper segment of the myometrium (the smooth muscle of the uterus) to contract rhythmically (Anderson & Etches 2007:876). It is this contraction that constricts spiral arteries, which in turn decreases blood flow through the uterus (KoS, MoH 2013b:16). It is through this mechanism that oxytocin prevents postpartum haemorrhage (KoS, MoH 2013b:16). The administration of oxytocin after the delivery of the placenta reduces the rate of postpartum haemorrhage by 40% (Anderson & Etches 2007:876). About 13.6% of the respondents did not mention that they provide this intervention (see section 4.4.2.2). Failure to administer oxytocin exposes mothers in the postnatal stage to the risk of postpartum haemorrhage (WHO 2014:17).

Midwives are trained healthcare professionals with expertise to assist women during antenatal care, pregnancy, labour, delivery, and critical immediate PNC period (ICM 2013:1–3). The delivery and examination of the placenta is an essential PNC intervention that may sometimes reveal missing placental fragments and membranes or cotyledons. According to the WHO PNC guidelines (ICM 2013:5–9, WHO 2014:4), midwives are required to examine the placenta for completeness. However, about 29.0% of the respondents in this study (see 4.4.3) reported that they failed to conduct placental examination. Such a failure could be a function of a lack of skills or limited skills in placental delivery. Such a gap in practice could result in postpartum bleeding that might in turn lead to fatal outcomes.

### **5.3.3 Immediate postpartum early complication diagnosis: physical and vaginal examination**

The WHO PNC guidelines (WHO 2014), the ICM competencies (ICM 2013) and experts in the field of maternal, newborn and child health (such as ICM & International Federation of Gynecology and Obstetrics, NICE 2014) recommend key interventions that should be offered to mothers and newborns during the immediate PNC. Examples of these interventions include:

#### ***5.3.3.1 Physical examination***

Physical examination during the immediate PNC period helps in gathering baseline data after delivery for confirming and identifying puerperal problems, such as pallor (Asif, Leon, Orozco-Vargas, Krishnamurthy, Choi, Mercado, Merrill, Thomas, Salman, Artikov & Bourgoignie 2007:1191). Such data help midwives to make timely clinical judgements and evaluate physiological outcomes of midwifery interventions (London et al 2007:472). Physical examination is crucial for women in the immediate PNC period, where the reproductive organs revert back to the pre-pregnancy state. Many physiological processes take place during this period, and examples of these include haemostasis, uterine contractions, and breast milk production (London et al 2007:472).

The results of this study revealed that more than half (56.8%) of the respondents reported that physical examination is an important clinical intervention (see section 4.4.5), and should be offered to mothers during the immediate PNC period. The question now arises, what were the views of the other proportion of respondents in relation to physical examination? These respondents were of the opinion that physical examination should not be offered to mothers in the PNC period. This might be the case as they did not mention physical examination on the questionnaire. Failure to physically examine mothers during the immediate postpartum period could result in the development of complications (such undiagnosed pallor and puerperal psychosis) and subsequent death (WHO 2014:4). The absence of or limited provision of physical examination might be contributing to the high MMR (593 per 100 000 live births) in Swaziland (KoS, CSO 2015b:11). This is a call for the MoH, development partners, community, midwifery training institutions, and civil society organisations to take steps to prevent or reduce maternal mortality during the postnatal period.

### **5.3.3.2 Vaginal examination**

According to the Royal College of Nursing (2006:6), a vaginal or pelvic examination is clinically performed mostly for the assessment or diagnosis of vaginal bleeding, which usually contributes to postpartum haemorrhage-related deaths. Vaginal examination of mothers could also help in the identification of sexually transmitted infections (STIs), uterine and vaginal prolapse, incontinence, and vaginal trauma (tears and lacerations) (Hirayama, Koyanagi, Mori, Zhang, Souza & Gulmezoglu 2012:340-341). During the examination, midwives inspect the amount and extent of vaginal bleeding, scarring, infection, tears, tenderness, enlarged glands, especially the Skene and Bartholin's glands, which might indicate infections (Hussein, Ramani, Kanguru, Patel, Bell, Patel, Walker, Mehta & Mavalankar 2014:e87378). Effective performance of this intervention could ensure that vaginal bleeding, which is a major complication and global cause of maternal deaths is diagnosed early (Say et al 2014:e327). It (vaginal examination) could also assist with the timely management of vaginal bleeding before it could claim the lives of mothers.

The ICM (2011:14) state that midwives have the knowledge, skills and abilities to perform a focused vaginal examination of mothers, such as assessment of uterine involution, pelvic floor, vaginal walls and healing of lacerations and/or repairs. The ICM (2011) further states that midwives have the skills to diagnose, manage and refer obstetric emergencies before they become life-threatening. On the contrary, about 78% of the respondents of this study did not mention that this midwifery intervention is important for mothers in the immediate PNC period (see section 4.4.4). Only a small proportion of respondents (22%) recognised the need for vaginal examination for women in the PNC period (see figure 4.5). This has training implications, as it indicates an urgent need for midwives to be educated on this vital examination, including its benefits for mothers and midwives.

### **5.3.4 Breastfeeding support**

Research has proved that early initiation of breastfeeding, especially within the first hour after delivery could prevent or at least reduce incidence of neonatal deaths in developing countries (Himani, Kaur & Kumar 2011:100). The literature sources reveal

that breastfeeding in the first hour after birth can prevent 22% of newborn deaths (Himani et al 2011:100). The same authors state that early initiation of breastfeeding can offer the following benefits:

- **Save lives:** it saves lives by ensuring that neonates receive colostrum, which is considered the baby's first immunisation because of its high levels of vitamin A, antibodies, and other protective factors, such as immunoglobulins. Because of the presence of antibodies and immunoglobulins, colostrum protects newborns against infections.
- **Help establish breastfeeding:** Early breastfeeding promotes early newborn suckling, which is a reliable correlate of successful breastfeeding, and maintenance of the same in infancy.
- **Prevent postpartum haemorrhage:** Breastfeeding promotes uterine contractions that in turn prevent postpartum haemorrhage (Himani et al 2011:100). Swaziland has an unacceptable high neonatal mortality rate, and the gap in breastfeeding could be contributing to these deaths.

### 5.3.5 Service documentation

According to the College of Registered Nurses of Nova Scotia (CRNNS) (2012:4), documentation in midwifery is an essential component of safe, ethical and effective midwifery practice. Thus, midwives are required to document all care activities regardless of the context of clinical practice. Documentation by midwives is to include an accurate and honest account of care activities, including the times the activities were carried out and the name of the midwife who carried them out. The documentation of the activities is required to be timely and comprehensive (ICM 2013:14–19, Potter & Perry 2010:212). Documentation is an integral part of midwifery practice. This assertion is a function of the view that healthcare professionals require accurate information about postpartum mothers to develop individualised and organised comprehensive care plans (CRNNS 2012:4). Thus, any failure to accurately document care activities is associated with the risk of inadequate or sub-standard care provision of immediate PNC. This study however revealed that 36.4% of the respondents did not see the need to document immediate PNC services offered to mothers in the postnatal stage (see section 4.4.7).

## **5.4 IMMEDIATE NEWBORN CARE WITHIN 30 MINUTES POST-DELIVERY**

Newborns end their dependency on the placenta for oxygen and nutrition immediately after birth (ICM 2013:14). Therefore, the availability and timely provision of quality interventions by midwives during this period is vital, as the newborns are completely dependent on others for feeding, warmth and comfort (American Academy of Paediatrics (AAP) 2006:1444; ICM 2013:16). The critical interventions that midwives are required to offer to ensure and promote survival and good adaptation of the neonates to the extra-uterine life are discussed in the following sections.

### **5.4.1 Extra-uterine neonatal adaptation assessment: activity, pulse rate, grimace, appearance and respiration (APGAR)**

The AAP (2006:1444) states that the immediate postpartum period is a time of vital physiological adaptation of the newborn. The newborn has to adapt from being completely dependent on the mother for life-sustaining oxygen and nutrients to an independent being. One important tool by which to assess this adaptation process is the use of the APGAR score test (Harrison 2010:25). Thus, in addition to the principles of newborn adaptation to extra-uterine life (ICM 2014:16), midwives are required to have the knowledge and/or understanding of elements of assessment of the newborn (including the APGAR scoring system, or any other method of assessment of breathing and heart rate). This test (APGAR score test) comprises 5 components: pulse (heart) rate, respiratory effort, activity (muscle tone), reflex irritability, and appearance (colour). This has since become the global standardised assessment tool to assess adaptation of infants after delivery (AAP 2006:1444).

The APGAR score test helps in the assessment of the clinical status of the newborn at 1 minute and 5 minutes of age (ICM 2013:16). Clinicians have used this assessment for many years to quickly evaluate the well-being of newborns immediately after birth (Harrison 2010:25). The APGAR scores may inform the need for prompt interventions. For example, if the extremities of a neonate are bluish in colour, this may prompt the need for initiating breathing (ICM 2013:16). This is because bluish extremities of a newborn indicate poor oxygenation. Arguably, the APGAR scores provide convenient shorthand information for reporting the health status of newborns and the category or type of responses needed to address health concerns (AAP 2006:1444, WHO 2014:5).

Despite this, 14.8% of the respondents of this study did not report that they routinely conduct the APGAR score assessment to babies immediately after delivery (see section 4.5.1). This gap in midwives' practices could be contributing to the high neonatal mortality rate in Swaziland. Midwives' failure to render this vital assessment may result in delayed interventions, for example, to initiate breathing in newborns.

#### **5.4.2 Breathing initiation support**

After delivery of the neonate, air moves into the lungs for the first time. During this physiological change, there is a change in pressure in the lungs, which helps to close the foetal connections and redirect the flow of blood to the lungs (Harrison 2010:25). Birth asphyxia is largely invisible in health policy and programmes, and receives limited programmatic or research funding internationally (WHO & UNICEF 2014:1-5). Birth asphyxia is a medical condition whereby a newborn is not breathing and in poor condition at birth with an assumed association to acute intrapartum events (Wardlaw et al 2014: 2).

The ICM (2013:15) states that midwives should have the skill and ability to provide emergency measures for respiratory distress or birth asphyxia, such as newborn resuscitation and suctioning in case of airway obstruction. If a country is to attain a reduction in child mortality, midwives should ensure that neonatal breathing is initiated immediately after birth to prevent not only neonatal deaths, but also neurologic disorders (ICM 2013:14, WHO 2014:4). A simple stroke on the neonate skin can help initiate breathing (ICM 2013:15). The present study revealed that 44.3% of the respondents did not report that this is an integral part of the immediate newborn care (see section 4.5.2). This could be one of the contributing factors to the high neonatal mortality rate in Swaziland. Stakeholders (such as EGPAF, Save the Children, UNICEF, WHO & UNFPA) involved in maternal, newborn and child health in Swaziland should urgently address such gaps. Doing so will enhance the Kingdom of Swaziland's efforts in attaining a reduction in child mortality.

#### **5.4.3 Temperature conservation: skin-to-skin contact and drying the neonate**

According to Freer and Lyon (2011:127–128), hypothermia at birth is one of the important risk factors for morbidity and mortality in newborns of all birth weights and

gestational ages, because of their immature thermoregulatory system. Therefore, hypothermia needs to be prevented at birth, and the strategies for preventing hypothermia include drying and covering of the baby using warm cloths, and promoting mother and baby, skin-to-skin contact. These temperature conservation strategies can assist the neonate to conserve heat. According to Freer and Lyon (2011:127), such strategies can help reduce neonatal mortality and morbidity by 25%.

Midwives are one of the skilled professionals who are expected to have the knowledge and ability to ensure and maintain normal newborn body temperature (ICM 2011:17). However, this study revealed that 64.8% of the respondents did not mention that placing the baby shortly after delivery on the mother's abdomen is a lifesaving intervention (see figure 4.8). In addition, 58.0% of the respondents did not report that drying and covering the baby with a warm cloth is a key intervention for enabling neonates to conserve heat (see section 4.5.3). One could therefore argue that some midwives in the Kingdom of Swaziland are probably not putting into practice these lifesaving strategies. Therefore, the Ministry of Health in Swaziland needs to address this concern.

#### **5.4.4 Physical examination**

Richardson (2008:9) states that the purpose of the newborn physical examination is to assess the baby's transition from intrauterine life to extra-uterine existence, and to detect congenital malformations and actual or potential disease. According to WHO (2014:4), it is the midwives' responsibility to carry out initial physical examinations on newborns shortly after birth. This initial physical examination, the WHO (2014:4) stipulates, should include assessment of respiration, circulation, temperature, neurological status, and screening for anomalies or disease that might require emergency treatment. It is critical to prevent excessive cooling of the baby during the examination; as such degrees of cooling can lead to hypothermia, and subsequent fatal outcomes. Generally, the initial examination is followed by full or comprehensive examination. The WHO (2014:4) stresses that full or comprehensive examination is to be carried by midwives on babies within the first 24 hours, and on discharge from the maternities. It is important to note that the examination is to be carried out only during periods when the babies are not crying. This is because some reflexes, such as babkin, rooting and grasping cannot be observed when neonates are crying (WHO 2014:4). Whilst the importance of physical examination of neonates is emphasised by the WHO

(2014:4), some respondents of this study do not seem to acknowledge the role of this examination in ensuring the physical well-being of the neonates. This is because 56.8% of the respondents did not view physical examination as a critical service to be offered to neonates immediately after delivery (see section 4.5.4). This is a concern that requires attention.

#### **5.4.5 Prophylaxis provision**

The literature sources highlight that midwives are required to have adequate knowledge, skill and abilities relating to care provision in midwifery practice, including the provision of prophylaxis medication to newborns (ICM 2011:17). It is the professional responsibility of the Kingdom of Swaziland's midwives to provide prophylactic eye treatment to infants immediately after birth. The Ministry of Health of the Kingdom of Swaziland (2010a:36) states that all newborns – regardless of HIV-exposure status – are to be provided with 1% tetracycline eye ointment and vitamin K 0.5 milligram. In addition, all HIV-exposed newborns are also to be provided with I-NVP prophylaxis immediately after delivery. It is further stressed by the Ministry of Health of this Kingdom that prophylaxis (1% tetracycline eye ointment) for diseases of the eyes of the newborn, such as gonorrhoea or chlamydia is recommended, for all infants, irrespective of the HIV-exposure of the newborns (KoS, MoH 2010a:36). This is because babies are exposed to the risk of infections when passing through the birth canals of mothers, particularly in instances when the same are infected (Leifer 2008:188). . However, the present study revealed that 13.6% of the respondents did not mention that newborns are to be provided with prophylactic eye ointment (see section 5.5.5). This suggests a different approach to prophylactic treatment of the eyes of the newborns among midwives of the study sites.

The Stanford School of Medicine (2014) states that the success of vitamin K prophylaxis has been so dramatic that many practitioners have never seen an infant afflicted with the haemorrhagic disease of the Newborn, now known as Vitamin K deficient bleeding. It is important to keep in mind that infants are most at risk for the classic form of the haemorrhagic disease of the newborn (Stanford School of Medicine 2014: 1).

The prevention of MTCT of HIV is one of the key functions of midwives, and this is particularly the case in countries with high incidence and prevalence of HIV/AIDS (WHO



2013a:100). It is for this reason that the WHO (2013a:100) recommends for all neonates of HIV-positive mothers to be provided with I-NVP from birth to about 6 weeks if not breastfeeding. But if breastfeeding, the same organisation recommends for neonates to be offered I-NVP up to about a week after exposure to breast milk (WHO 2013a:100). The Ministry of Health in Swaziland adopted these recommendations because of the efficacy of I-NVP in contributing to the prevention of MTCT of HIV (KoS, MoH 2015b:21).

The efficacy of nevirapine in preventing MTCT of HIV has been widely documented. In Uganda for example, the HIVNET 012 study involving 626 women showed that nevirapine was able to reduce MTCT by 47%, with only 8.1% of infants exposed to this drug acquiring HIV at birth (Saloojee 2002). Almost all the babies of the study were breast-fed, and this suggests a prolonged exposure to HIV. Despite this, the benefits of nevirapine were realised, as a 42% reduction in transmission of HIV was noted at age 2 months (Saloojee 2002; WHO 2013a:100). Similar outcomes were observed in a study conducted in South Africa that involved 1 306 mother-infant pairs randomised to either nevirapine during labour and after delivery, or multiple doses of zidovudine and lamivudine (AZT/3TC) during labour and for one week after delivery to the mother and the baby (Saloojee 2002; WHO 2013a:100). About 40% of the neonates were breast-fed in both of the treatment arms. The result after eight weeks after birth showed no significant difference between the rate of HIV infection or death across the two treatment arms: rates of 14.3% in the simpler nevirapine arm and 12.5% in the more involved and expensive dual-therapy arm were noted (Saloojee 2002).

Given the outcomes of the studies discussed thus far, nevirapine is a cost-effective prophylaxis intervention for preventing MTCT of HIV. Despite the noted outcomes, about 39.8% of midwives in this study did not report that they gave this prophylaxis to newborns immediately after delivery (see section 4.5.5). This is a worrying practice, and it explains the reason for the continuing increase in HIV among infants in the Kingdom of Swaziland.

## **5.5 IMMEDIATE POSTNATAL CARE COUNSELLING WITHIN THE FIRST 30 MINUTES AFTER CHILDBIRTH**

It is worth reiterating that midwives are expected to provide counselling to mothers during the postnatal stage to enable the latter to understand their new roles. The counselling focuses on specific areas, such as personal hygiene, cord care, adherence to ARV drugs, infant feeding, and maternal and neonatal danger signs.

### **5.5.1 Personal hygiene**

Personal hygiene helps to prevent the acquisition and spread of infections. Mothers are at a high risk of contracting opportunistic infections, as the birth canal usually becomes bruised during the birthing process. This is particularly the case for HIV-positive mothers. Thus, not cleaning the birth canal might cause the genitals to become infected, and the infections might then ascend to the uterus leading to fatal or near fatal outcomes (WHO 2014:4). Postpartum sepsis is associated with maternal deaths.

Sepsis is the second leading cause of maternal deaths globally, and the second national cause of maternal deaths in Swaziland (KoS, MoH 2011a:6; Say et al. 2014:e327). Midwives have the professional responsibility to counsel mothers on personal hygiene in order to prevent or at least reduce the occurrence of puerperal infections (KoS, MoH 2010a:34). Over 70% of respondents of this study claimed to have offered this form of counselling to mothers on a regular and consistent basis (see section 4.6.1). Given that Sitz baths helps to promote vaginal healing and prevent ascension of infection to the uterus, information about the same is to be provided to mothers during counselling (Say et al 2014:e327).

### **5.5.2 Cord stump care**

Evidence shows that sepsis accounts for 28% of all neonatal deaths globally (Wardlaw et al 2014:2). The cord stump is considered a hotspot for the development of infections (Kinney et al 2010:e1000294). Hence, good care of the cord stump is essential for the prevention of infections, and reduction of infant mortality incidence. It is therefore critical for midwives to offer counselling to mothers during the immediate postnatal stage on care of the cord stump. A very good proportion of respondents of this study (72.7%) did

not believe that counselling on a subject of this nature is important and essential for mothers in the PNC period (see section 4.6.1). However, 27.3% of the respondents noted that they have offered such counselling to mothers during this period (see figure 4.10). This is one of the explanations for the 16% rate of neonatal deaths, as a function of sepsis, in the Kingdom of Swaziland (KoS, MoH 2011b:12).

### **5.5.3 Newborn danger signs**

The continent of Africa is considered a high risk of maternal mortality, as about 62% of women die of pregnancy-related causes (WHO, UNICEF, UNFPA, WB & UNPD 2014:16). Each day, approximately 7,700 newborns die of complications related to pregnancy and childbirth (WHO & UNICEF 2015:4). According to Say et al. (2014:e327) the causes of maternal and neonatal deaths are known. Examples of these include postpartum haemorrhage (27.1%), sepsis (10.7%), hypertension disorders (pre-eclampsia and eclampsia) (14%), abortion (7.9%) and embolism (3.2%) (Say et al 2014:e327). The major causes of neonatal deaths include sepsis or pneumonia (28%), preterm birth complications (35%), intrapartum-related complications (28%) (Wardlaw et al 2014: 2).

#### **5.5.3.1 Hypothermia**

Most newborns die of recognisable signs and symptoms (danger signs) such as hypothermia (WHO & UNICEF 2015:3–6). According to the ICM (2013:17), midwives have the required knowledge and skills to combat this global problem. If midwives were to provide information to mothers about hypothermia, neonatal mortality rates can be averted or at least reduced. The intra-uterine environment is warm and it is considered a safe environment for babies. However, babies are exposed to a cold environment during childbirth, which in essence relates to the extra uterine environment. Exposure to such an environment puts the neonates at risk of hypothermia. This is because the thermoregulatory mechanism of neonates is ineffective at regulating temperature (Harrison 2010:11). Thus, the need to keep neonates warm using warm clothes. Mothers are to be informed of the importance of keeping their babies warm. About 89% of the midwives who participated in the study did not report that they routinely rendered counselling to mothers on hypothermia (see figure 4.12). This is a concern, and such

practice is not consistent with the best practice guidance for PNC and midwives prescribed by the ICM and the WHO (2014).

### **5.5.3.2 High respiratory rate**

At birth, some neonatal physiological processes begin, such as breathing through the respiratory system. During the extra-uterine adaptation of newborns, an important measure to monitor is breathing or respiratory rate. Respiratory distress in newborns is a clinically challenging problem, as it accounts for about 4–6% of newborn mortality (Elliott & Coventry 2012:623). Given that respiratory distress can be prevented, early identification of its sign (high respiratory rate) and timely management of the same can save the lives of neonates (Elliott & Coventry 2012:623). Swaziland has a high neonatal mortality rate (KoS, CSO 2015a:11). Although this is the case, a significant proportion of the respondents (94.3%) did not routinely offer counselling on high neonatal respiratory rate to mothers in the postnatal period (see section 4.6.3). This is worrying given that high respiratory rates account for 4-6% of neonatal mortality in the world (Elliott & Coventry 2012:623).

### **5.5.3.3 Fever**

According to Wardlaw et al (2014:2), fever indicates that the human body is fighting against infections. Counselling mothers on the diagnosis and management of fever of neonates is useful for the prevention and/or reduction of mortality of this population (KoS, MoH 2010a:34). It is therefore advisable for midwives to encourage mothers during counselling to report to healthcare providers any signs of fever their babies may be experiencing. About 61.4% of respondents of this study did not report that they counselled mothers on how to manage fever of neonates if indicated (see figure 4.11). This could mean that they either forget to indicate this during the interviews or they have never talked about fever to mothers, including its management and implications on neonates. Respiratory illnesses, such as pneumonia and bronchiolitis are often associated with fever (Harrison 2010:13). Exposure to these illnesses may result in fatal outcomes of neonates (KoS, MoH 2010a:33).

#### ***5.5.3.4 Refusal to feed***

According to the Regents of the University of California (2004:153), neonates' refusal to feed could result in hypoglycaemia. Glucose is the main energy source for neonates. The newborn brain depends on glucose almost exclusively for energy and survival. Up to 90% of the total glucose consumed by neonates is utilised by their brain. Given that glucose regulatory mechanisms are sluggish in neonates, these newborns are considered susceptible to hypoglycaemia, particularly when glucose demands are increased or when exogenous or endogenous supply of the same is limited. Severe or prolonged hypoglycaemia may result in long-term neurologic damage (The Regents of the University of California 2004:153). Therefore, newborns who refuse to feed are to be attended to in a timely manner in order to prevent life-threatening physiological risks. Mothers therefore need to be provided with knowledge and skills on how to attend to neonates who are reluctant to eat by midwives during the immediate PNC period (ICM 2013:11). The majority (81.8%) of respondents of this study reported that they did not provide information to mothers on neonates' refusal to feed, and the implications of this (see section 4.6.3). This is a reflection of the midwives' practice in Swaziland.

#### ***5.5.3.5 Umbilical cord bleeding***

Any loss of blood by neonates could result in fatal outcomes. It is therefore important for midwives to inform mothers of this danger sign, including how and where to seek professional help if needed. This study revealed that the majority (69.3%) of the respondents reported that they routinely counselled mothers on umbilical cord and bleeding (see section 4.6.3). This means, 30.7% of the respondents were not offering counselling or advice on it (see figure 4.12). This indicates a differential approach by midwives to counselling on umbilical cord and bleeding. Steps, like offering training and education to midwives need to be taken to further narrow this gap in practice.

#### **5.5.4 Infant feeding**

According to Himani et al (2011:100) early initiation of breastfeeding has many benefits for the survival of neonates. It helps with motor development of the neonates. Early initiation of breastfeeding prevents neonatal and infant deaths largely by reducing the risk of infectious diseases (Himani et al 2011:100). Colostrum contains large numbers of

protective factors that provide passive and active protection of neonates from a wide variety of known pathogens, and thus prevents neonatal mortality (KoS, MoH 2010a:46).

Himani et al (2011:100) recommend exclusive breastfeeding for all infants. This is because exclusive breastfeeding prevents the ingestion of pathogenic micro-organisms through contaminated water, other fluids and foods (KoS, WHO 2010a:46). It also protects the immunologic barriers in the infant's gut from contaminants or allergenic substances in infant formula or food. Acknowledging this, midwives are required to provide information to mothers on infant feeding, including its benefits (ICM 2013:16). This study revealed that 38.6% of the respondents reported that they were not offering counselling to mothers on infant feeding (see section 4.6.4). Although the number of respondents who offered counselling in this context was significant (over 60%), more needs to be done to promote exclusive breastfeeding given its benefits.

### **5.5.5 Maternal danger signs**

Mothers in postnatal care are to be provided with comprehensive information on maternal danger signs and symptoms (ICM 2013:16). Such signs and symptoms could indicate serious immediate puerperal complications, such as postpartum haemorrhage, pre-eclampsia or eclampsia and sepsis (Lowdermilk & Perry 2006:820). The puerperal conditions are known globally as the leading causes of maternal deaths (WHO 2014:4). Early identification of the puerperal conditions could prevent millions of maternal deaths. Mothers should be made aware of the danger signs and the need to immediately report the same to health providers should they experience any of the danger signs. This is because failure or delay could result in dire consequences or death (Lowdermilk & Perry 2006:810). Awareness and knowledge of obstetric danger signs are key strategies to reduce maternal deaths (Kabakyenga, Östergren, Turyakira & Pettersson 2011:1–2). Swaziland, like many African countries, is a high-risk environment for pregnant and lactating mothers (WHO, UNICEF, UNFPA, WB & UNPD 2014:11). Therefore, empowering mothers in postnatal care with information relating to danger signs or symptoms of obstetric complications can guide them and their families to make prompt decisions in seeking care from skilled birth attendants, wherever they experience such signs.

Vaginal bleeding is one of the major indicators of postpartum haemorrhage, which is the leading cause of maternal deaths globally (Say et al 2014:e327). Postpartum haemorrhage is an emergency obstetric care concern that usually occurs during the first few hours after delivery (Say et al 2014:e327). Early detection and prompt intervention could prevent maternal deaths. For an HIV-positive mother, postpartum haemorrhage may result in a serious decrease in the haematocrit ratio of 10 or more, which might require blood transfusion (Murray & McKinney 2006:734).

Mothers should be made aware of such potential complications. The maternal danger signs highlighted in this study included vaginal bleeding, fever and chills and headache or blurred vision for which respectively 68.2%, 92% and 100% of the respondents were not offering information (see section 4.6.2). Fever and chills could be a serious indication of puerperal sepsis, which is the second global cause of maternal deaths (Say et al 2014:e327). Headache and blurred vision could signal a looming pre-eclampsia or eclampsia. Headache and or blurred vision is a major clinical reason for midwives to teach or counsel mothers, especially HIV-infected mothers, on maternal danger signs. Such a gap could be contributing to the high maternal MMR in Swaziland.

The present study augmented a study conducted among women in Ethiopia, which indicated low levels of awareness of obstetric danger signs during pregnancy, delivery and postpartum (Hailu & Berhe 2014:e83459). The Ethiopian study reported that severe vaginal bleeding (52.8%) was the most frequently mentioned complication by women. About 31.8% of the respondents did not know any maternal and newborn danger signs (Hailu & Berhe 2014:e83459). Fever (31.0%) and blurred vision (1.6%) were the least mentioned danger signs (Hailu & Berhe 2014:e83459). The low awareness of danger signs usually contributes to high levels of maternal mortality and morbidity (Hailu & Berhe 2014:e83459).

Swaziland has a high MMR of about 593 per 100 000 live births (KoS CSO 2015b:13) and a skilled birth attendance of 88% (KoS CSO, 2015a:11). This implies that there is a problem in the quality of care during labour, delivery and postpartum. Most of the African states, Swaziland inclusive, have to reduce MMR by 75% (WHO, UNICEF, UNFPA, WB & UNPD 2014:11). The latter requires well-designed, coordinated and focused strategies. One such strategy is promoting knowledge of maternal danger signs among mothers during the immediate PNC period (WHO 2014:4).

According to the WHO (2013a:102), all clients on ART should ensure a high threshold of adherence to treatment to achieve viral suppression. This will limit the risk of resistant HIV mutations (WHO 2013a:102). Health practitioners have the responsibility to provide on-going adherence counselling. This should be whenever they have contact with clients that are on ART or ARV prophylaxis. The majority (87.5%, n=77) of the respondents who were part of the present study mentioned that they provide this counselling to HIV-infected mothers (see section 4.6.2). Some mothers could be exposed to the risk of drug-resistant HIV as 12.5% (n=11) of the midwives did not indicate provision of such critical counselling (see figure 4.11). Such a lapse might result in treatment failure among HIV-positive mothers. In addition, it can lead to unnecessary and preventable risks relating to MTCT of HIV.

Infant feeding option has a potential risk of promoting MTCT of HIV. Midwives are expected to educate mothers on infant feeding options, as guided by the national guidelines (KoS, MoH 2010a:46). Exclusive breastfeeding is the recommended option for all infants (KoS, MoH 2010a:44; WHO 2013a:102). The present study revealed that 38.6% of the midwives were not offering counselling on safe infant feeding (see section 4.6.4). This could result in HIV-infected mothers mixing feeding, an approach that could enhance MTCT of HIV (KoS, MoH 2010a:46).

The interventions discussed above are to be offered while the mother is still within the labour and delivery department, within 30 minutes after delivery or childbirth.

## **5.6 PRE-DISCHARGE POSTNATAL CARE FOR MOTHERS**

Lack of space in maternity units was reported to be the reason for mothers to be discharged within 24 hours after delivery from health facilities in Swaziland (KoS, MoH 2010a:33). The present study revealed that on average mothers were discharged from health facilities within 12–24 hours after childbirth (see section 4.6.4). This may not allow midwives to observe mothers and newborns adequately in order to ascertain whether they are recovering well. On discharge, mothers in postnatal care, particularly HIV-infected mothers and HIV-exposed infants, have to be provided with quality immediate PNC services (KoS, MoH 2010a:33-46; WHO 2014:4). Midwives have to measure and record vital signs effectively, conduct physical examination, provide



prophylaxis and counselling on discharge from hospitals after childbirth to postpartum mothers, particularly HIV-infected mothers.

### **5.6.1 Maternal vital signs assessment**

Vital signs monitoring is a fundamental component of midwifery care on discharge of mothers from hospitals during the immediate PNC period (WHO 2014:4). Vital signs are essential in identifying clinical deterioration (Rose & Clarke 2010:11). It is the professional responsibility of midwives to assess these so as to diagnose or identify problems as early as possible and to manage complications promptly. Mothers with body temperature of about 38 C should be provided with prophylactic antibiotics, especially on discharge from health facilities as a high temperature could indicate infection. Another critical parameter to be assessed on discharge is the maternal pulse. Pulse assessment could help with early identification of blood circulation problems, such as a fast thready pulse, which could mean hypovolemia (Rose & Clarke 2010:11). Vaginal bleeding after childbirth contributes to maternal deaths. Severe vaginal bleeding is a life-threatening condition during the immediate postnatal period (Say et al 2014:e327). Therefore, pulse assessment is essential and forms an integral part of the discharge plan for mothers within the first 24 hours after delivery (KoS, MoH 2010a:44).

Hypertensive disorders comprise the third major contributing factors to maternal deaths. Blood pressure assessment could help in the early identification of such disorders. Changes in blood pressure measurements may indicate pre-eclampsia or eclampsia (Elliott & Coventry 2012:623). Assessing this vital sign may prevent maternal deaths or at least reduce the incidence of the same. The assessment of the breathing rate and pattern of mothers in postnatal care is vital. Any variation from the normal range could indicate a severe abnormality in many body systems, not just the respiratory system (Elliott & Coventry 2012:623). The present study revealed that 56.8% of the respondents reported that they routinely examine mothers in postnatal care for vital signs when discharging them from hospitals (see section 4.7.1).

In relation to vital signs, 88.6% of the respondents of this study mentioned that they measured temperature of mothers in postnatal care on discharge from the health facilities (see figure 4.13). About 58.0% mentioned that they routinely assessed pulse rate of mothers on discharge (see section 4.7.1). The majority (96.6%) mentioned that

they routinely measured blood pressure of postnatal mothers on discharge. Some midwives often ignore the assessment of the vital signs despite the view that they are important indicators of the health of mothers (Rose & Clarke 2010:11). Hence, not assessing the vital signs could result in unidentified maternal complications that in turn might lead to maternal deaths in communities.

### **5.6.2 Maternal physical assessment**

According to London et al (2007:472), physical examination is vital in the management of mothers in the postnatal period, especially on discharge from health facilities. Physical assessment helps in the early identification and timely management of puerperal complications. It can also help in the evaluation of the effectiveness of care, and making of timely and focused clinical judgments. Therefore, general physical assessment, including pelvic or vaginal examination and uterine contraction assessment is crucial.

General physical assessment provides a quick overall review or first impression of the mother in postnatal care. General physical assessment includes alertness, signs of acute distress, body structure/mobility (such as stands vertically, sits comfortably, gait is coordinated, walk is smooth and well-balanced, etc.) and behaviour (maintains eye contact with appropriate expressions, comfortable and co-operative, looks clean and fit, appears clean and well-groomed etc.) (London et al 2007:472). Information from this assessment of mothers in postnatal care could help with early identification of postpartum complications such as puerperal psychosis, poor hygiene, and dizziness (London et al 2007:472). About 73.9% of respondents of this study mentioned that they routinely performed such assessments (see figure 4.13). The omission of general physical assessment by the 26.1% of the respondents implied that some mothers could leave health facilities with unidentified puerperal complications.

### **5.6.3 Uterine contraction and vaginal assessment**

Another vital assessment to be performed by midwives on discharge of mothers from health facilities during the immediate PNC period, especially HIV-positive mothers, is uterine contraction assessment (WHO 2014:4). Uterine atony is one of the major common causes of postpartum bleeding. Uterine atony is common among clients with

high parity, over-distended uterus (e.g. multiple gestations, polyhydramnios), prolonged or rapid labour, use of oxytocin for induction or augmentation, and use of magnesium sulphate (Hofmeyr, Abdel-Aleem & Abdel-Aleem 2013:1). This is very important as postpartum bleeding is globally and nationally the leading cause of maternal deaths (KoS, MoH 2011a:11; Say et al 2014:e327). One diagnostic manoeuvre for postpartum bleeding is palpation of the uterus, to ascertain the extent of its contraction (Hofmeyr et al 2013:1).

The ICM (2013:15) states that midwives have the knowledge and skill to perform uterine contraction and vaginal assessment on mothers in postnatal care at the time of discharge from hospitals. Of the 88 midwives who participated in the present study, 44.5% did not mention that this was a vital and critical intervention to be routinely performed on mothers prior to being discharged from health facilities during the PNC period (see section 4.7). This professional gap in the practice of midwives is detrimental to the health of mothers, especially immune-compromised mothers. An urgent strategy by the Ministry of Health of Swaziland to change the situation is essential as mothers are at risk of complications during the PNC period, due to the perineum physiological process that occurs during birth. Midwives are expected to conduct pelvic and vaginal examinations to postnatal mothers on discharge, to help identify puerperal complications like vaginal tears. A proportion (13%) of the midwives who participated in the present study reported that they did not perform uterine contraction and vaginal examination on discharge of mothers from hospitals (see section 4.7). Hodgins, Pradhan, Khanal, Upreti and Naresh (2013:5–6) state that perineum examination is a diagnostic manoeuvre for diagnosing postpartum bleeding. Failure to perform perineum examination could lead to mothers dying of undiagnosed complications post-delivery.

#### **5.6.4 Maternal antiretroviral prophylaxis administration**

The WHO (2013a:100) states that, in the absence of any ARV prophylaxis for either the mother or the infant, the risk of HIV transmission from mother to infant among women living with HIV is 30% to 45% for breastfeeding infants and 15 to 30% for infants who are not breastfeeding. Globally, up to 40% of HIV infections in infants are due to breastfeeding (Oladokun, Talatu, Eromosele, Pius, Adeymi, Gideon, Sheu, Chinwe, Paul, Ogochukwu, Oluwafunmilayo, Sunday, Abubakar & Eucheria 2015:32–33). The risk of HIV transmission is highest in the first few months of breastfeeding (Oladokun et

al 2013:33), but the risk continues throughout the breastfeeding period. In Swaziland, all HIV-infected mothers are to given ART for PMTCT of HIV and for the promotion of their own health (KoS, MoH 2015b:103).

Mothers who are on ART or ARV prophylaxis should not skip their doses (KoS, MoH 2010a:46; WHO 2013a:100). Adherence to this medication prevents drug resistance and HIV mutations (WHO 2013a:100). It is for this reason that the Ministry of Health of the Kingdom of Swaziland (2015a:88) stipulates that women on ART or ARV prophylaxis should take the medication on a regular and consistent basis in line with the correct procedures. This could result in healthy mothers and HIV-free infants. In the present study, 48.9% of the respondents reported to be routinely providing and administering ART or ARV prophylaxis to HIV-infected mothers before discharging them from hospitals. This gap (51,1%) puts HIV-infected mothers at risk of treatment failure and transmission of HIV to their babies. Midwives' failure to provide ART or ARV prophylaxis could be a contributing factor to the incidence of paediatric HIV infection. Maternal care can never be complete without covering the care of their infants.

## **5.7 PRE-DISCHARGE NEWBORN CARE**

The present study revealed that on average, newborns are kept in health facilities for about 12–24 hours to ensure close monitoring (see section 4.6.4). The respondents of this study mentioned that early discharge of mothers from hospitals was mostly due to the unavailability of beds. This time (12–24 hours) is not adequate for proper monitoring of infants' adaptation to extra-uterine life (WHO 2014:4). As such, midwives should offer quality neonatal interventions prior to discharge from health facilities (ICM 2013:16). Hence, pre-discharge care of newborns is to include neonatal vital signs assessment, physical and cord assessment, drugs and vaccine administration.

### **5.7.1 Neonatal vital signs assessment**

Neonatal vital signs are the physiological parameters that are necessary to sustain life of the newborns (Dunlap 2011:1). They (vital signs) are integral components of neonatal care, especially during the first 24 hours of life. The assessment of vital signs in newborns is even more crucial when neonates are discharged from health facilities (WHO 2014:4). The physiological events that occur in the body on a second-to-second

basis depend on blood circulation, and this is even more complex among neonates (WHO 2014:4). The latter could indicate oxygenation and homeostasis. Midwives are required to have the skill to measure or assess vital signs of the newborns, and they are also to have the expertise to interpret the results of assessments on the basis of knowledge of age-specific variations in vital signs (ICM 2013:16).

Fever is one of the most common symptoms of illness in children, especially newborns (Dunlap 2011:3). Globally, neonatal sepsis is the second leading cause of newborn deaths (Wardlaw et al 2014: 2). Therefore, midwives have to measure infants' temperature and interpret results skilfully (ICM 2013:16). If there are variations from the normal, midwives are required to intervene timeously and appropriately (WHO 2014:4). In the present study, 94.3% of the respondents did not mention that they routinely measure infants' temperature on discharge from hospitals (see section 4.8.1). This implies that skilled birth attendants could deliver a number of neonates and still let them leave the health facilities with potentially undiagnosed infections.

Auscultation of the apical pulse in neonates for one full minute is one diagnostic and essential measurement (Dunlap 2011:3). Auscultation can help in the identification of heart-related complications. Newborn heart complications require urgent and skillful intervention and close monitoring (WHO 2014:4). Failure to diagnose such complications could result in neonatal death. It is the professional responsibility of midwives to measure and record neonatal pulse accurately on discharge from hospital (ICM 2011:17). The majority (71.6%) of respondents that participated in the study did not mention that they routinely offer such a service to neonates on discharge from health facilities (see figure 4.15). The identified gaps in practice or knowledge of midwives could result in unnecessary neonatal deaths. This gap can be addressed through coordinated and specific in-service training, an approach that the Ministry of Health of the Kingdom of Swaziland could consider.

Research revealed that respiration of neonates is usually irregular, with periods of intermittent apnoea (Dunlap 2011:3). Respirations of the neonates should be counted for one full minute (WHO 2014:4). Variations require midwives to act timeously and appropriately. The present study revealed that 70.5% of the participating midwives did not mention that they were offering this service as an integral part of the care they render to neonates, especially on discharge from health facilities (see section 4.8.1).

This is not in line with the best practices or guidelines (WHO 2014:4) on newborn care on discharge as well as the essential core competencies of midwives during the immediate PNC period (ICM 2013:16).

### **5.7.2 Neonatal physical assessment**

According to the Ministry of Health of the Kingdom of Swaziland (2010a:51), routine physical examination of the neonate is an integral part of the universal Child Health Promotion Programme (KoS, MoH 2015a:109). The importance of offering and delivering quality care to the newborns on discharge from health facilities is well advocated for in research (KoS, MoH 2015a:109; WHO 2014:4). The aim of examining the newborns physically is to detect obvious adverse conditions or abnormalities (KoS, MoH 2015b:109). This includes screening for congenital defects, developmental dysplasia of the hip, some ocular disorders (including congenital cataract), and undescended testes in boys (WHO 2014:4). Midwives should therefore conduct a full physical examination for all infants on discharge from health facilities to rule out the above-mentioned complications. It is against guidelines for 33.0% of the midwives who participated in the present study to report that they did not conduct physical examination on the newborns prior to discharge (see section 4.8.2). This could imply that some infants leave health facilities with undiagnosed complications that could eventually lead to costly conditions, and fatal outcomes.

### **5.7.3 Cord assessment**

Neonatal infections resulting from poor cord care and poor cord assessments account for approximately 36% of neonatal mortality worldwide (Mullany, Darmstadt & Tielsch 2006:665–666). Cord stump infection may result in systemic infections (WHO 2014:4). In Swaziland and in other developing countries, little is known about the risk factors of umbilical cord infection, whereas unhygienic practices around the time of birth are a likely determinant of infection (Mullany et al 2006:665–667). Umbilical cord infections are likely to continue during the neonatal stage, as long as practices during the postnatal period do not reduce exposure of the umbilical cord stump to potentially dangerous pathogens. The freshly cut umbilical cord is a prime site for bacterial colonisation (Mullany et al 2006:665–667).

Cord assessment by midwives helps in the early identification of infection, as signs like redness, swelling and foul odour could indicate sepsis on the newborns' cord stump (WHO 2014:5). The ICM (2013:17) states that midwives ought to perform this assessment. However, the present study revealed that 37.5% (n=33) of the midwives did not mention that they were routinely conducting cord assessment (see figure 4.15). Mullany et al (2006:203–204) found that infections of the cord were occurring in approximately 5–6% of newborns in southern Nepal, and such infections are associated with a number of care-taking practices. Infection of the cord stump can lead to severe neonatal complications like septicaemia, which usually leads to neonatal death, if not properly managed medically.

#### **5.7.4 Drugs and vaccine administration**

Research has resulted in the improvements in medical science, including the statutory recommendations of drugs and vaccines administration to neonates (WHO 2014:4). Immunisation is recommended for all infants in spite of their HIV-exposure status. The WHO (2013a:100) recommends that neonates born of HIV-infected mothers should be given nevirapine.

The Kingdom of Swaziland has also adopted the recommendation by the WHO to administer primary immunisations to infants regardless of HIV-exposure (KoS, MoH 2015a:109; WHO 2014:4-5). All infants should receive Bacillus Calmette–Guérin (BCG) vaccine (against tuberculosis) and the polio vaccine after birth. A proportion of 13.6% of the midwives who participated in the present study did not mention administration of BCG and polio immunisations as part of the essential package of neonatal healthcare services to be rendered to all infants on discharge from hospitals (see section 4.8.3). This renders the HIV-exposed infants to be at risk of being infected by HIV and opportunistic infections (KoS, MOH 2015a:109). Midwives' failure to administer immunisations can lead to the development of tuberculosis among infants, especially HIV-exposed neonates.

In addition to BCG and polio immunisations, the HIV-exposed infants have to be given nevirapine (KoS, MoH 2015b:109). Infant nevirapine given twice daily has been proved to be effective in PMTCT of HIV, and use of infant nevirapine for the duration of breastfeeding has shown reduction transmission rates of HIV (WHO 2013a:101). Since

Swaziland adopted the use of I-NVP approach, MTCT rates of HIV have been reduced to less than 5% (KoS, MoH 2015a:16). Midwives have the knowledge of PMTCT of HIV. Therefore, midwives have to administer this prophylaxis to infants. Surprisingly, 51.1% of respondents in the present research reported not to be offering infant nevirapine to HIV-exposed infants on discharge (see section 4.8.3). This gap does not only promotes MTCT of HIV, but may also result in increased neonatal deaths due to HIV infection and opportunistic infections.

## **5.8 PRE-DISCHARGE POSTNATAL CARE COUNSELLING**

The fact that mothers are discharged within 24 hours after delivery from hospitals requires that women be provided with comprehensive information on maternal and newborn care. Comprehensive information on hygiene, cord care, newborn danger signs, adherence to ARV drugs, infant feeding, maternal danger signs, prophylaxis and the immunisation schedule, PNC visits, the importance of nutrition and family planning is critical. Such information will enable these mothers to be on watchful of the danger signs. It is the professional role of the midwives to offer counselling to mothers on discharge from health facilities. The counselling could help in empowering mothers in the postnatal stage for their new roles and responsibilities as “nursing mothers”; who also need to be nursed.

### **5.8.1 Hygiene**

Globally, about 10.7% of mothers die due to sepsis (Say et al 2014:e327). Mothers should be taught the practices that would prevent puerperal infections. Such practices include good hygiene practices. During the birthing process, the perineum is subject to tears, bruises and lacerations. These could allow pathogens to enter the body, which could result in septicaemia. The latter is a life-threatening condition (Say et al 2014:e327). But good personal hygiene would easily prevent such complications.

The HIV-infected mothers are generally at risk of developing opportunistic infections (KoS, MoH 2015a:58). They need to be advised on the importance of prevention of opportunistic infections, and they need to be encouraged to practice good personal hygiene, especially perineum care. Personal hygiene might help in the prevention of some diseases, like ascending infection to the uterus, which may result in uterine



infection (WHO 2014:6). The present study revealed that 12.5% of the midwives did not report that counselling on the importance of good personal hygiene to mothers on discharge from hospital is an essential immediate PNC service (see section 4.9.1). The present study corroborated with the study conducted by Dlamini (2013:181) in which the mothers were not counselled on hygiene, which indicated a sub-standard PNC on discharge from hospitals thus reflecting some degree of incompetence or a weakness of the midwives. This omission by midwives could promote the occurrence of preventable puerperal infections, including vaginitis.

### **5.8.2 Cord stump care**

At the time of discharge from health facilities, mothers should be encouraged and made aware of the importance of keeping the cord stump clean. Paediatricians recommend that the cord stump must be cleaned with alcohol, although others warn against this because alcohol irritates the skin and sometimes delays healing (Hodgins et al 2013:5–6). Given that the cord stump, should be kept dry the WHO (2014:4) and Hodgins et al (2013:5–6) recommend for the cord stump to be exposed to air as often as possible, as this allows its base to dry. A dry base of the cord stump will decrease the amount of time that is required for healing (Hodgins et al 2013:5–6).

Mothers should be educated on the importance of allowing the cord stump to heal naturally (Hodgins et al. 2013:5–6; KoS, MoH 2015a:109). The present study revealed that 19.3% of the respondents did not mention that this intervention was routinely offered to mothers in the postnatal stage on discharge from health facilities (see section 4.9.1). This exposes newborns to death from preventable infections.

### **5.8.3 Newborn danger signs**

Newborn danger signs include hypothermia, high respiratory rate, fever, refusal to feed and bleeding umbilical cord. Most of the observable newborn dangers signs may indicate neonatal complications. However, the majority of respondents (87.5%) did not offer counselling on hypothermia (see section 4.9.3). This omission exposes babies to die of excessive heat loss, which is a preventable condition (Wardlaw et al 2014:2). Fever is another newborn danger sign, and 44.3% of the respondents reported that they were not offering this counselling to mothers on discharge from hospitals (see section

4.9.3). In relation to the need to alert mothers on infants' refusal to feed as a danger sign, 72.7% of the respondents reported that counselling on this subject was not routinely offered to mothers prior to discharge from the health facility (see section 4.9.3).

A slight blood loss and cord infection from newborns can be detrimental (WHO 2014:4). Mothers need to observe for deviations from normal temperature (37 degree Celsius). If bleeding and cord infection occur mothers should seek medical intervention urgently. The majority of respondents in this study reported that they were not offering counselling on the danger of bleeding of newborns (see section 4.9.3). This suggests that many mothers could go home with no information on danger signs, and newborns could die of danger signs without any medical help. Most of the time newborn danger signs (such as infection and fever) are not distinctively different from the maternal danger signs.

#### **5.8.4 Maternal danger signs**

Promoting awareness of the health implications relating to the postpartum care period of mothers would result in improved health status of the mothers (Okour, Alkhateeb, & Amarin 2012:11). It was estimated that 15% of pregnant women who experience complications are at risk of developing poor, yet preventable, postpartum outcomes (Okour et al 2012:11). Enabling postpartum women to recognise early signs and symptoms of postpartum complications is a primary step towards seeking timely obstetric care before lives of mothers or their babies are endangered (Kabakyenga, Östergren, Turyakira & Pettersson, 2011:1–2). Reports indicate that several women, owing to a lack of understanding regarding important early danger signs and symptoms, may not regard puerperal complications as abnormal (Kabakyenga et al 2011:1–2).

A large proportion of mothers and their families does not recognise many early signs and symptoms of the leading causes of maternal deaths, such as eclampsia and sepsis (Kabakyenga et al 2011:1–2). Failure to identify these signs may lead to a delayed decision in seeking care, which was reported to be a contributing factor in 30–77% of all maternal deaths (Kabakyenga et al 2011:1–2). Health education on postpartum danger signs and symptoms targeting women of reproductive age and increased awareness and recognition of complications might motivate women (mothers) to seek timely

support and improved referral to health services (Pembe, Urassa, Carlstedt, Lindmark, Nyström & Darj 2009:1–4).

The ICM (2011:14) states that midwives are to counsel mothers on postpartum danger signs. In the present study, 48.9% of the respondents did not mention that they were routinely teaching mothers on vaginal bleeding when discharging them from hospitals (see section 4.9.2). The majority of respondents (88.6%) reported that they were not educating mothers upon discharge from hospital on indications of fever and chills (see section 4.9.2). About 90.9% of the respondents reported that they were not offering information on indications of headache and/or blurred vision. The present study confirms a study in Burkina Faso, which found that 55% of all maternal deaths were due to a lack of awareness about danger signs and symptoms (Kabakyenga et al 2011:1–2). This knowledge gap may contribute to delayed decisions in seeking care, which is reported to be a contributing factor in 30–77% of all maternal deaths (Kabakyenga et al 2011:1–2).

#### **5.8.5 Adherence to antiretroviral drugs**

The WHO (2013a:112) states that adherence to ART is important for sustaining HIV suppression, reducing the risk of drug resistance, improving the overall health and quality of life, and decreasing risk of HIV transmission. On the other hand, poor adherence is the major cause of therapeutic failure (KoS, MoH 2015b:84). Good adherence to ART is critical. In the case of HIV infection, loss of virologic control is a major consequence of non-adherence (KoS, MoH 2015b:84). Good adherence contributes to viral suppression and may also result in CD4+ T-lymphocyte count recovery (increase) and improved clinical outcomes (KoS, MoH 2015b:84; WHO 2013a:113).

Provision of on-going counselling on adherence to ART by healthcare providers is one of the many key strategies to promote adherence to treatment. Therefore, it is important that HIV-infected mothers in the postnatal period are provided with information on ART, including the goals of therapy (achieving and maintaining viral suppression, decreasing HIV-associated morbidity and mortality, and PMTCT of HIV, importance of strict adherence to ART, and the potential for the development of drug resistance as a consequence of suboptimal adherence) (WHO 2013a:100–116). The intention is not just

the provision of information, but to also ensure that the mothers understand the information provided. The present study found that 12.5% of the respondents reported that they were not routinely offering continuous adherence counselling to HIV-infected mothers on discharge from hospitals (see section 4.9.4). This gap in midwives' practice exposes mothers to dangers that may result in poor adherence to therapy and drug resistance, loss of future treatment options and promotion of MTCT of HIV. Good adherence to ART and safe infant feeding may lead to reduced chances of MTCT of HIV among lactating HIV-positive mothers (KoS, MoH 2015b:109).

### **5.8.6 Safe infant feeding**

The WHO (2001:8) recommends exclusive breastfeeding for the first six months of life, and the introduction of nutritionally adequate and safe complementary (solid) foods at six months together with continued breastfeeding up to two years of age or beyond. Exclusive breastfeeding for six months is beneficial to the health of the infant and mother (KoS, MoH 2015b:109). The key benefit is protection against gastrointestinal infections, which is observed not only in developing, but also in industrialised countries (KoS, MoH 2015b:109; WHO, UNAIDS, UNFPA & UNICEF 2010:6). Furthermore, exclusive breastfeeding protects the newborn from acquiring infections and reduces newborn mortality rates (WHO, UNAIDS, UNFPA & UNICEF 2010:6). The risk of neonatal mortality due to diarrhoea and other infections can increase in infants who are either partially breastfed or not breastfed at all (KoS, MoH 2015b:110).

Breast milk provides newborns with the relevant nutrients at the required quantity (WHO, UNAIDS, UNFPA & UNICEF 2010:6). It is recommended that mothers who are living with HIV breastfeed their babies exclusively for the first six months of life (KoS, MoH 2015a:109). Breast milk is also an important source of energy and nutrients, and reduces mortality rates among children who are malnourished (Dlamini 2013:167; KoS, MoH 2015a:109, WHO, UNAIDS, UNFPA & UNICEF 2010:6). The present study revealed that 31.8% of the midwives could have exposed mothers to poor infant feeding practices, like mixed feeding (see section 4.9.4). Generally, mixed feeding is associated with poor outcomes, like MTCT of HIV among HIV-infected mothers who are breastfeeding their infants (KoS, MoH 2015b:108).

### **5.8.7 Immunisation and prophylaxis schedule**

In Swaziland, all babies born of HIV-positive mothers should receive infant nevirapine for at least six weeks if not breastfed or up to one week after exposure to breast milk (KoS, MoH 2015b:108-109). The Ministry of Health of the Kingdom of Swaziland states that all babies exposed to HIV should be started on co-trimoxazole at the age of six weeks. It is the midwife's responsibility to educate mothers on this prophylaxis (KoS, MoH, 2015b:112). Co-trimoxazole is effective in the prevention of opportunistic infections among HIV-infected infants (KoS, MoH 2015a:112). About 84.1% of the respondents who participated in the present study were not offering such vital information to HIV-infected mothers (see section 4.9.4). This failure could enable mothers not to seek help for prophylaxis treatment. Midwives are knowledgeable about prophylaxis (ICM 2011:14). Infant nevirapine has to be started immediately after birth by all infants born of HIV-positive mothers (KoS, MoH 2015a:109). The present study found that 20.5% of the respondents reported that they were not providing information on this prophylaxis, which is consistently noted in literature sources to be effective in preventing MTCT of HIV (see section 4.9.4).

In addition, mothers should be educated on the PNC visits as stipulated or guided by the national HIV management guidelines (KoS, MoH 2015a:112). The guidelines state that mothers should visit health facilities at 7–14 days, 6 weeks, and 10 weeks after birth (KoS, MoH 2015a:112). These visits allow mothers and their babies to be assessed for postpartum adaptation, identification of puerperal problems (if any), and immunisation. This study found that 29.5% of the midwives were not providing education on the national immunisation schedule (see section 4.9.4). PNC visits allow provision of ART or ARV prophylaxis administration, on-going adherence counselling and HIV testing for the baby as well as virologic assessment for the mother (KoS, MoH 2015a:112). This study focused on the 7 days and 6 weeks PNC visits. The majority of respondents (84.1% and 71.6%) reported to be providing such information on the PNC visits. This is a good practice as it can promote early identification of maternal and neonatal complications.

### **5.8.8 Nutrition and its importance**

The human body requires good nutrition for nourishment. This is even more the case for HIV-infected and breastfeeding mothers (KoS, MoH 2015a:106). Good nutrition can improve the mothers' overall quality of life, as it strengthens the immune system of the same to fight against disease, manage HIV symptoms and complications, process medications, manage the side-effects of medication, and lastly reduce the chances of MTCT of HIV, particularly among HIV-positive mothers (KoS, MoH 2015a:111). The HIV-positive mothers in postnatal care should be educated on the importance of eating a diet high in vegetables, fruits, whole grains and legumes, choosing lean, low-fat sources of protein and limiting sweets, soft drinks and foods with added sugar (KoS, MoH 2015a:112). It is important that mothers are counselled on the value of eating additional balanced meals made of proteins, carbohydrates and a little good fat in all meals and snacks (KoS, MoH 2010f:109–115). In the present study, the majority of the respondents (76.1%) in the study sites were not educating mothers on the importance of nutrition (see section 4.9.5). This could lead to unnecessary neonatal HIV infection and maternal complications.

### **5.8.9 Family planning**

The provisions of accessible and affordable family planning services, skilled birth attendants as well as provision of emergency neonatal and obstetric care are the key strategies to reduce maternal deaths (KoS, MoH 2015b:109–112). It was estimated that the provision of family planning methods alone could reduce maternal deaths by 30% (Smith, Ashford, Gribble & Clifton 2009:5). The increasing unmet needs for family planning among women of reproductive ages (15–49 years) in Swaziland is 15.2% (KoS CSO 2015a:11). This should provide reason for midwives to educate mothers, especially HIV-infected mothers, on family planning methods during PNC, particularly on discharge from health facilities. Family planning services are free in public health facilities. Family planning could assist the country towards the achievement of MDG 5 (75% reduction of MMR). Of the midwives who participated in this study, 63.6% did not mention that they regularly provided information on family planning services to HIV-positive mothers on discharge from hospitals (see section 4.9.5). This could be the reason why Swaziland has an increasing unmet need for family planning (KoS, CSO 2015a:11). The present study augmented the results of a study by Dlamini (2013:184),

which reported that as many as 34.1% of the respondents (N=372) were put at risk of unplanned pregnancies and HIV re-infection, because midwives did not advise or educate them on available and accessible family planning options.

## **5.9 GUIDANCE ON POSTNATAL CARE PROVISION**

Guidelines of care are an important means of quality service delivery in nursing. They place the patient at the centre of the delivery of care, and direct activities so that the right person performs the right job effectively at the right time (Pelzang 2010:913–914). Guidelines by WHO (2014:12) enhance the improvement of continuity of care and integration of health professionals collaborating on behalf of their clients. This minimises the movement of clients through the hospital, provides autonomy to clients, and empowers staff members to plan and execute their work in ways that are most responsive to clients' needs (Pelzang 2010:913–914).

According to Pelzang (2010:914), guidance of care in the provision of immediate PNC responds precisely to each mother's needs, wants and preferences. Furthermore, guidelines of care assist mothers in postnatal care with abundant opportunities to be informed and involved in care decision-making. These guidelines by WHO (2014:1-67) help midwives to deliver more holistic care, enhance communication skills between relatives, clients and healthcare providers, and shift the emphasis from body specific care to total holistic care. Other advantages of guidelines of care include facilitation of a team approach, as well as reflection of quality of care, learning and sharing of skills and abilities among health professionals (Pelzang 2010:914).

Good governance of health systems is seen in the demonstration of its effectiveness, efficiency and quality to users, the community and funders (Pelzang 2010:914). This includes the development of guidelines of care, especially in maternal, newborn and child health services. Such approaches help in ensuring quality and improving standards in healthcare services (Pelzang 2010:913–914). The present study revealed that 89.8% of the respondents of this study reported that in their work stations there were no guidelines of care that were guiding the provision of immediate PNC services (see section 4.10). This finding could mean that mothers in the postnatal care period of the continuum of care receive incomplete immediate PNC services from midwives. Such a gap could result in the delay of identification and mismanagement of puerperal

complications, which could be the reason for the gaps identified by this study during the critical immediate PNC period.

## **5.10 THE CHALLENGES AND POSSIBLE STRATEGIES FOR IMPROVING POSTNATAL CARE PROVISION**

Health systems are faced with a number of challenges, especially in sub-Saharan Africa (AHWO 2009:7). Challenges include a severe shortage of human resources for health, drugs and supplies to name but a few. The case for Swaziland is complex and unique. Swaziland has a high maternal mortality ratio of about 593 per 100 000 live births and a high infant mortality rate of about 79 per 1 000 live births despite a 88% hospital delivery and 97% ANC visit by pregnant women (KOS CSO 2015b:11). These indicators show that there is a gap somewhere in the continuum of care. The present study found that there are several areas of improvement in the provision of immediate PNC by midwives to mothers and newborns (see section 4.10).

Midwives who participated in this study were asked about the challenges they were facing regarding provision of immediate PNC. A number of challenges were reported (see section 4.10). These included uncoordinated in-service training, resulting in most of the training being HIV-related. This bias affects key maternal, newborn and child health-linked training, which in turn could affect the quality of the provision of immediate PNC. Poor supportive supervision was another major problem, which implies that inexperienced midwives cannot be mentored to sharpen their midwifery skills. This challenge may result in the provision of erratic or poor quality PNC, which may lead to puerperal complications.\

The unavailability of guidelines for reference on care to be offered is a critical gap. Guidelines are useful for the standard provision of evidence-based care. A lack of such guidelines could result in fragmented care provided to clients. The challenges mentioned could lead to unaccountability of PNC and a poor understanding of current evidence. The lack of PNC guidelines could lead to the provision of substandard immediate PNC. The challenge of space or infrastructure in most of the maternity units in Swaziland results in early discharge of mothers after delivery. This practice exposes mothers and their infants to dangers, such as the development of postpartum



complications at home. It was noted that some mothers were discharged from health facilities within 24 hours after delivery (see section 4.8).

Continuous improvements on the immediate PNC to reduce or prevent unnecessary maternal and newborn deaths are a global, regional and national responsibility (WHO 2014:1–2). The respondents mentioned that if the quality of immediate PNC is to be improved, development of immediate PNC guidelines with clear steps to follow was to be prioritised. Guidelines would help midwives, especially newly recruited midwives, on the package of care to be provided during the immediate postnatal period. The PNC guidelines would also help in preventing gaps in the provision of care, which in turn could lead to the alleviation of maternal and neonatal deaths. The recruitment of addition of staff was highly recommended, as well as a structured and well-coordinated in-service training (see section 4.10). The recruitment of more staff was thought to improve the time each midwife would have with a client, which in turn could improve the quality of care provided. In order to provide quality care, basic equipment should also be available. The selected health facilities were assessed on whether they had the basic human, organisational and material resources to provide quality immediate PNC services to mothers and their infants. Below is a detailed discussion on the preparedness of health facility to offer immediate PNC services.

## **5.11 PREPAREDNESS OF HEALTH FACILITIES TO PROVIDE IMMEDIATE POSTNATAL CARE SERVICES**

The major influencing factor for the provision of quality immediate PNC is the availability of basic equipment in health facilities (Morestin et al 2009:6). Such equipment includes human, material and organisational resources. The discussion here includes monitoring and evaluation of immediate PNC services as a strategy to improve quality of immediate PNC provided by midwives to mothers and infants.

### **5.11.1 Human resources for provision of quality immediate postnatal care**

Morestin et al (2009:3) refer to human resources as the professionals responsible for obstetric care. During immediate PNC, the availability of human resources has a major influence on the quality of services provided. If the quality of immediate PNC is to be attained, ensuring that midwives are available and accessible to render quality PNC is a

prerogative (Morestin et al. 2009:3). Midwives are responsible for the provision of PNC globally and nationally (UNFPA, ICM & WHO 2014:1–3). They (midwives) would be productive if they have the relevant qualifications, knowledge and skill to render quality care (ICM 2013:1–19). Human resources management is crucial in ensuring the steady availability of experienced midwives and in defining their responsibilities, motivating and retaining them.

The present study noted that all of the senior midwives (n=6) who participated in this study reported that midwives were available in the study settings (see section 4.11.1). A large proportion of the respondents (83.3%) mentioned that they were severely short-staffed. Of note is that 16.7% reported to be well staffed. The shortage of staff could result in an increased workload among midwives. This could lead to the provision of substandard care. The Ministry of Health of Swaziland needs to address such staffing problems to ensure quality care provision. However, this gap does not imply that midwives are to provide sub-standard PNC services. The shortage of staff requires close monitoring and evaluation. The Ministry of Health of the Kingdom of Swaziland therefore needs to consult with relevant stakeholders to address identified staffing challenges.

### **5.11.2 Monitoring and evaluation of postnatal care services**

Monitoring and evaluation are two distinct but interrelated and essential activities in the field of midwifery or in healthcare. According to the United Nations Development Programme (UNDP) (2009:81–83), monitoring is defined as the ongoing review of interventions to determine whether they are producing the outcome according to plan and targets and whether any adjustments may be needed so that they can achieve their intended goals. It is therefore imperative to state that proper monitoring includes a coordinated and focused reporting system (UNDP 2009:81–83). This component of healthcare assesses the protective effect of policies, programmes, practices, partnerships and procedures on maternal, newborn and child health issues, including immediate PNC. Effective monitoring and evaluation mechanisms are able to assess the quality of PNC and response interventions and whether they are achieving their objectives; highlight changes in the environment that affect maternal neonatal and child mortality. Monitoring and evaluation programme can further help in the identification of good practices, derive lessons from operational experience and can help improve

performance. It can encourage team building, foster transparency and enhance accountability to maternal and neonatal mortality rates.

In 2005, the Ministry of Health in Swaziland established a Monitoring and Evaluation Unit. This unit receives service data from health facilities. The Ministry of Health, Monitoring and Evaluation Unit helps in the identification of gaps and areas of improvement as well as scaling up of best practices (KoS, MoH 2013a:26). Of the six facilities where the study was conducted, 33.4% (n=2) were not submitting PNC reports to the respective unit (see section 4.11.1). This may lead to unidentified gaps in the provision of PNC, including immediate PNC rendered to mothers and their infants.

Another crucial quality improvement approach in health intervention is having in place an effective quality assurance mechanism (UNFPA 2014:4). Quality assurance mechanism is where multi-disciplinary teams meet to take stock of their health interventions. This is a useful approach if we are to reduce maternal and neonatal deaths as well as eliminate paediatric HIV infection in Swaziland. The majority of respondents (83.3%) did not conduct this quality improvement activity (see section 4.11.1). It was only done in one health facility. This could lead to the continuous provision of sub-standard PNC. Assessment of client satisfaction is another way that can be useful in the improvement of health services. This study found that 66.6% of the study sites were not assessing their clients' satisfaction with the immediate PNC services. This could mean that bad practices can be repeated over and over again to different clients without being addressed. For accountability and review of cases, maternal and neonatal deaths are to be recorded. This would allow facilities to identify gaps, good practices and areas of improvement in the manner they provided care to those mothers and infants who happen to die while being cared for. Most (83.3%) of the study sites reported that they were reporting on all maternal and neonatal deaths (see section 4.11.1).

### **5.11.3 Linkages of maternity services with the community**

The integration and linkages of PMTCT of HIV into a range of health programmes in countries with a high prevalence of HIV, like Swaziland, is a good approach to adapt. As such, there has been a new international commitment to ensuring 'universal access' to SRH and HIV services (UNFPA, WHO & IPPF 2012:1). New efforts are needed to

encourage and assist more people to learn their HIV status. Maternal and child health services, family planning services, youth services and STI treatment services provide useful opportunities to reach large numbers of people with information about HIV, and to offer counselling and testing (Republic of Kenya, Ministry of Health [RoK, MoH] 2006:11–15).

Linkage of sexual, reproductive and maternal health, and PMTCT of HIV programmes could result in more people accessing HIV testing (IPPF, UNFPA & WHO 2014:6–7). Communities are key stakeholders in maternal, newborn and child health services and they are at the foundation of affordable, equitable and effective healthcare, and are at the core of the success of reduction of maternal and neonatal deaths in Swaziland, as outlined in the National Sexual and Reproductive Health policy of 2013 (KoS, MoH 2013a:14). Swaziland has a well-defined national health policy focused on improving SRH services and systems through efficient and effective health management systems (KoS, MoH 2013a). However, there has not been a breakthrough in improving community involvement in health issues.

The community systems are an untapped resource as far as the improvement of health services is concerned. The result has been deteriorating trends in health status, high rates of lost to follow up, and poor adherence of individuals to ART (KoS, MoH 2013a:15; RoK, MoH 2006:2–3). Good health service linkage between health facilities and communities intends to improve the health status of communities (RoK, MoH 2006:2–3). It can strengthen health facility–community linkages through effective decentralisation and partnership for the implementation, monitoring and evaluation of health programmes, including immediate PNC services (RoK, MoH 2006:2–3). This could empower communities to realise their rights for accessing quality care progressively. It was comforting that 83.3% of the health facilities participating in the present study were linked with their communities through expert clients (see section 4:11). It is not clear if Swaziland has involved communities in maternal, newborn and child health as the country still has high maternal and infant mortality rates (see section 4:11).

#### **5.11.4 Availability of medical supplies, drugs and equipment**

It has been widely reported that a shortage of drugs and medical supplies for maternal health is a common challenge facing many health systems in low- and middle-income countries (Morestin et al 2009:6). Research shows that the unavailability of medical supplies, drugs and equipment is the major reason for the provision of poor quality maternal health services and subsequent maternal deaths in developing countries (Mkoka, Goicolea, Kiwara, Mwangi & Hurtig 2014:2). The provision of quality emergency obstetric care is a cost-effective intervention for reducing maternal deaths (Mkoka et al 2014:2). The concept of emergency obstetric care (EmOC) is based on the assumption that maternal complications are unpredictable and that obstetric complications can occur in around 15% of deliveries (Mkoka et al 2014:2). When such complications occur, maternal mortality could be prevented in a setting where skilled birth attendants, drugs and medical supplies needed for EmOC are available.

According to Mkoka et al (2014:2), policy makers or researchers do not commonly mention the shortage of drugs and medical supplies when addressing the causes of poor maternal health services. Research on quality PNC mostly addresses the need for skilled birth attendants and for the referral system to provide quality PNC (Mkoka et al 2014:2). Furthermore, the provision of obstetric care coverage has been evaluated against the presence of physical infrastructure, such as the number of health centres, without taking into account the actual care provided at these facilities (Mkoka et al 2014:2). This could lead to the perception that the coverage of PNC has improved theoretically, while in practice the accessibility and utilisation of these facilities is limited due to shortage of drugs and medical supplies (Morestin et al 2009:6). There is a need for improved access to maternal health drugs and supplies, and challenges within the health systems that prevent access to these supplies have to be addressed.

All the health facilities where the study was conducted were well equipped with the basic medical supplies, drugs and equipment to provide quality immediate PNC. These included nevirapine clips, nevirapine syringes, HIV tests (Uni-gold and Determine), disinfectants, ARV drugs (nevirapine syrup, zidovudine and lamivudine), examination beds, electricity, a steriliser, and clean water. In terms of essential medicines, all of the health facilities (n=6) where the study was conducted had all the necessary immunisations, intravenous fluids, antibiotics, hypertensive drugs (magnesium sulphate

and aldomet) as well as analgesics. This confirms the outcome of a study by Mazia et al (2009:257) that generally all facilities in Swaziland have the capacity to provide quality PNC. These findings are in line with the Service Availability Mapping Report of the Ministry of Health of the Kingdom of Swaziland (KoS, MoH 2010b:69; KoS, MoH 2011a:39) which showed that basic equipment availability was more than 90% in all of the facilities.

### **5.11.5 Communication and referral modes**

A number of maternal and neonatal deaths can be prevented if functional referral systems were in place to allow postpartum mothers and neonates to reach appropriate health services when complications occur (RoK, MoH 2006:2–3). If countries are to succeed in reducing maternal deaths, they should establish proper referral systems as a core component of maternal, newborn and child health services (Nyamtema, Urassa & Roosmalen 2011:1–2). The importance of referral in an obstetric emergency is related to the unpredictability of postpartum complications and their potential to progress rapidly to become severe and life-threatening (Hussein, Kanguru, Astin & Munjanja 2012:e1001264).

The three delays provide a conceptual framework of the factors influencing the timely arrival to appropriate care in obstetric emergencies (Hussein et al 2012:e1001264). The three delays are:

- delays in the recognition of the problem and the decision to seek care in the household
- delays in reaching the appropriate facility
- delays in the care received once the woman reaches the facility

The delay of interest in this review was the delay relating to the delay in the care received once the women reaches the health facilities.

Hussein et al (2012:e1001264) state that delays occur in accessing health services in Africa. Such delays include difficult geographical terrain, costs of transport, lack of telephones and vehicles, suboptimal distribution and location of health facilities, and poor decision-making by health professionals. Therefore, means of communication

should be made accessible and available in maternity units to promote easy communication between professionals and other health facilities (Morestin et al 2009:6). It was found that 83.3% of the health facilities of this study had an ambulance or car to transfer clients (see section 4.11.3). This could help in the transfer of clients from a level one facility of care (clinics) to tertiary health facilities. The availability of transport could further prevent maternal and neonatal deaths.

#### **5.11.6 Organisational resources**

For continuity of immediate PNC services, antenatal care cards, child welfare cards, and PNC registers are important (Morestin et al 2009:7–8). All the study sites reported that they had all of these resources (see section 4.11). The present study corroborated the outcome of a study by Mazia et al (2009:257) which found that generally all facilities in Swaziland had the capacity to provide quality PNC at the time of their research. However, this study found a gap that none of the facilities had immediate PNC guidelines. This is a key organisational resource in the provision of quality immediate PNC as it helps in the provision of standard health interventions. Lack of such resources could result in the provision of poor quality immediate PNC that in turn may result in maternal and neonatal complications.

#### **5.12 CONCLUSION**

This chapter discussed the results of the study. The findings on the competencies of midwives during the provision of immediate PNC revealed gaps in the provision of immediate PNC to mothers and their infants. These findings call for urgent attention on the competencies of midwives and the provision of quality immediate PNC in Swaziland. Strategic inventions need to be undertaken; these involve adaptation of internationally approved evidence-based guidelines and conceptual framework. Globally, there are evidence-based guidelines available that reputable agencies, such as the WHO and the National Institute for Health and Care Excellence have published to guide midwives' practice during the provision of immediate PNC. Therefore, there may not be a need for countries to develop PNC guidelines as they may adapt the existing guidelines. The WHO recommends that countries without PNC guidelines can adapt the latest compiled global PNC guidance. The latter formed the basis for the researcher to facilitate the adaptation of the guidelines on immediate PNC for mothers and their infants and conceptual framework for the implementation of PNC in Swaziland. This process is discussed in the following chapter.

## **CHAPTER 6**

### **IMPLICATIONS FOR POSTNATAL CARE IN SWAZILAND, LIMITATIONS, RECOMMENDATIONS AND CONCLUSION**

#### **6.1 INTRODUCTION**

In the preceding chapter, discussions of the findings of the study were presented. The results of this study have offered insights into the competencies of midwives during the provision of immediate PNC in the selected maternities in Swaziland. The study revealed gaps in the knowledge and practice of midwives during the provision of immediate PNC to mothers and their infants. The review of the literature resources revealed that Swaziland does not have comprehensive PNC guidelines (see section 2.11). This chapter therefore focuses on the adaptation of PNC guidelines and conceptual framework for the provision of quality PNC in Swaziland. To enhance the reader's understanding of the process of PNC guidelines and conceptual framework adaptation processes, this chapter commences with the process of PNC guidelines adaptation, followed by the process of the conceptual framework derivation. The latter is followed by the limitations, recommendations and conclusion of the study.

#### **6.2 GUIDELINES AND CONCEPTUAL FRAMEWORK ADAPTATION PROCESS**

The findings of the study serve as the impetus for the researcher of this study to adapt international evidence-based PNC guidelines as well as a conceptual framework for the implementation of PNC in Swaziland. The PNC guidelines and conceptual framework would enhance the provision of quality immediate PNC. These documents (adapted PNC guidelines and conceptual framework) provide guidance that enables SRHU, stakeholders in maternal child health as well midwives to ensure the provision of quality immediate PNC; and this could prevent or at least reduce maternal and neonatal deaths. It was viewed that the lack of postnatal care guidelines and conceptual framework in Swaziland was the contributing factor to the high MMR (593 per 100 000 live births), despite the high (88%) skilled birth attendance and 88% hospital deliveries (KoS, CSO 2015a:9–11).



The PNC guidelines and the conceptual framework can provide guidance in the provision of quality immediate PNC and neonatal care in Swaziland's maternities. Organising structures that are well developed facilitates the improvement of practice among healthcare professionals (College of Emergency Medicine, Federation of Royal Colleges of Physicians and Manchester Metropolitan University 2010:12–13). The next section of the thesis focuses on the adaptation of the PNC guidelines and derivation of the conceptual framework.

### **6.2.1 The guidelines adaptation process**

The process of adapting the WHO (2014:1-67) guidelines on PNC involved systematic discussions with representatives from the nursing schools, SRH unit, and other maternal, newborn and child health experts from non-governmental organisations (NGOs) and clinicians. During the discussions the results of a situational analysis on maternal and infant mortality ratios for Swaziland (KoS, CSO 2015b:11) was presented. The presentation included the MMR and infant mortality ratio, causes of the mortalities as well as the time when the deaths occur (KoS, CSO 2015b:11; KoS, MoH 2011a:7–13). The results of the systematic review on the availability of PNC guidelines were presented in section 2.11 of this report. Prior to that, the latest WHO recommendations on PNC were presented (see section 2.10). The team of experts under the leadership of the Ministry of Health in Swaziland appreciated the presentation. It was agreed that since the WHO has released new recommendation on PNC (WHO 2014:1–14) and the fact that Swaziland did not have such guidelines; the WHO PNC guidelines should be adapted.

#### ***6.2.1.1 Guideline Development Group***

Maternal and neonatal experts constituted the Guidelines Development Group (GDG). According to WHO (2014:9) convening an effective and skilfully GDG is the first and most important step in producing an evidence-based guideline. The GDG had to agree on the adaptation process, consider evidence and adapt the PNC guidelines. Therefore, it was important that the membership of the GDG had to be broad and multi-professional, but also be appointed for the duration of the guideline adaptation process. The researcher approached the SRH Programme Manager in the MoH of Swaziland, to share the findings of the study and highlighted the implications of the findings. The

researcher further presented the findings of a systematic review on guidance of immediate PNC in Swaziland (see section 2.7). The WHO 2014 PNC guidelines were also discussed. It was agreed that due processes would be followed for the WHO 2014 PNC guidelines to be adopted.

The process of adopting the PNC guidelines was outlined. It involved the establishment of the GDG. The membership of the GDG included individuals who were committed to the task, and its composition was influenced by people's expertise in maternal and neonatal health, nursing, gynaecology/obstetrics, public health, midwifery, SRH and HIV. Below is the membership:

- Two senior SRH officials from MoH in Swaziland, one assumed the role of the chair of GDG, and the other assumed the role of the project manager
- Four regional SRH mentors, these were midwives
- Four MCH experts from non-governmental organisations
- Two practicing clinicians
- Two midwifery academics, one from each of the midwifery training institutions in Swaziland
- One representative from the Swaziland Nursing Council
- The researcher, who assumed the role of the scribe or secretary

#### ***6.2.1.2 Evidence retrieval and synthesis process***

The researcher informed the GDG that the process of literature review had been conducted, however, the membership of the GDG was encouraged to bring additional evidence, which could improve the guidelines. The secretary of the GDG mentioned that the internet including UNFPA, the Joint United Nations Programme on HIV/AIDS (UNAIDS), the WHO, UNICEF and EGPAF websites were searched. Furthermore, academic libraries were searched, and Swaziland government documents were manually searched. The researcher presented the analysis of the literature retrieved from the varied sources. The analysis included the systematic review of PNC guidelines in Swaziland (see section 2.7), and the new WHO 2014 PNC guidelines. The presentation highlighted the situational analysis of MMR, IMR, and the timing of the mortalities, highlighting the need to focus on provision of quality PNC immediately after

childbirth, the first 24 hours post-delivery, where about 60% of maternal and neonatal deaths occur (Aryal et al 2013:1; Ziyane & Thwala 2010:16).

It was decided that the presented data was sufficient to inform the adaptation of the new WHO (2014) PNC, as the country did not have PNC guidelines (KoS CSO 2015b:11). However, members were encouraged to bring additional evidence, as the GDG was critically aware that the literature review would not provide all the necessary information required for the adaptation of the guidelines. There was consensus among members of the GDG to adapt the WHO 2014 PNC guidelines, which was informed by latest and relevant evidence (WHO 2014:9).

### ***6.2.1.3 Guideline Development Group Meetings***

The GDG held eight meetings between June 2014 and December 2014. The chairperson of the GDG guided each of these meetings in terms of the task or project (adapting the WHO 2014 PNC guidelines). The key topics covered in the guidelines were identified at the first meeting. The chairperson, in agreement with the GDG, established topic groups and each topic group was tasked to undertake the guideline adaptation process for that specific topic. Examples of topic groups included timing of discharge from a health facility after birth, number and timing of postnatal contacts, assessment of the baby, exclusive breastfeeding, cord care, other postnatal care for the newborn, assessment of the mother, PNC counselling, iron and folic acid supplementation, and prophylaxis. Each topic group was required to identify review questions to guide the identification and interrogation of the evidence relevant to the topic of the guidelines.

In addition, each topic group had to meet differently to work on their sections. These processes led to the development of a draft-adapted guidelines per topic. These drafts were presented in the GDG meetings. Members of the GDG provided feedback and topic group members were given time to incorporate the changes proposed by the GDG. The final draft was presented to the GDG, and it was approved. The chairperson stated that the draft has to be presented to the Sexual Reproductive Health Inter-Agency Technical Coordination Committee.

### 6.2.1.4 Adoption of the adapted-guidelines

The researcher with the support of the chairperson of the GDG presented the draft-adapted guidelines to the relevant structure (Sexual Reproductive Health Inter-Agency Technical Coordination Committee in Swaziland). The committee provided feedback, and changes were incorporated to the guidelines as suggested by the committee. A final meeting of the GDG was held and the adapted guidelines were presented and approved by the group. Table 6.1 presents the adapted guidelines for the provision of immediate PNC to mothers and their infants in Swaziland.

**Table 6.1: Immediate postnatal care guidelines for mothers and neonates**

Time period	Intervention
WHILE THE MOTHER IS ON THE DELIVERY BED	<ul style="list-style-type: none"> <li>• Quickly assess the baby for APGAR.</li> <li>• Place the baby in skin-to-skin contact on the mother's abdomen.</li> <li>• Clamp and cut the cord approximately 2–3 minutes after the baby's birth or cessations of pulsation, whichever comes first.</li> <li>• Thoroughly dry the baby and cover the baby, including the head.</li> <li>• Palpate the uterus to make sure no other baby is present.</li> <li>• Administer an uterotonic drug.</li> <li>• Deliver and place the placenta in a receptacle provided (e.g. kidney basin).</li> <li>• Massage the fundus of the uterus through the woman's abdomen until the uterus is contracted (firm).</li> <li>• Expel clots from the uterus.</li> <li>• Inspect and repair lacerations or tears (if necessary) of the lower vagina and perineum.</li> <li>• Repair episiotomy (if one was performed).</li> <li>• Examine the placenta and membranes for completeness and abnormalities.</li> <li>• Estimate blood loss.</li> <li>• Assist the woman and baby to begin breastfeeding within the first hour after birth.</li> <li>• Measure the mothers' vital signs:               <ul style="list-style-type: none"> <li>○ blood pressure</li> <li>○ temperature</li> <li>○ pulse</li> <li>○ respirations</li> </ul> </li> <li>• Instil 1% tetracycline eye ointment in the child's eye.</li> </ul>

Time period	Intervention
	<ul style="list-style-type: none"> <li>• Inject vitamin K 0.5 mg intramuscular to the child.</li> <li>• Administer infant nevirapine.</li> <li>• Document all findings and care provided.</li> </ul>
<p>WHILE THE MOTHER IS ON THE DELIVERY BED AND CONTINUE DURING THE TIME OF TRANSFER TO THE POSTNATAL WARD</p>	<p><b>Midwives should provide comprehensive information to HIV positive mothers immediately after delivery. This should include:</b></p> <ul style="list-style-type: none"> <li>• Proper hygiene by use of saline sitz baths.</li> <li>• Cord care.</li> <li>• Counsel on new-born danger signs: <ul style="list-style-type: none"> <li>○ hypothermia</li> <li>○ high respiratory rate</li> <li>○ fever</li> <li>○ refusal to feed</li> <li>○ bleeding umbilical cord</li> </ul> </li> <li>• Adherence to ARV drugs.</li> <li>• Infant breastfeeding.</li> <li>• Monitoring of vaginal bleeding.</li> <li>• Fever and chills.</li> <li>• Headache or blurred vision.</li> </ul>
<p>WHILE MOTHER–INFANT PAIR IS STILL ADMITTED IN POSTNATAL WARD</p>	<p><b>Maternal interventions</b></p> <ul style="list-style-type: none"> <li>• Measure vital signs: <ul style="list-style-type: none"> <li>○ measure blood pressure;</li> <li>○ measure temperature;</li> <li>○ count pulse; and</li> <li>○ count respirations.</li> </ul> </li> <li>• Assess extent of uterus contraction.</li> <li>• Conduct physical examination.</li> <li>• Conduct pelvic examination.</li> <li>• Assess vaginal wall.</li> <li>• Assess vaginal discharge for colour, smell and amount.</li> <li>• Administer analgesics.</li> <li>• Documents all findings and care provided.</li> </ul> <p><b>New-born assessment</b></p> <ul style="list-style-type: none"> <li>• Measure vital signs: <ul style="list-style-type: none"> <li>○ temperature</li> <li>○ pulse</li> <li>○ respirations</li> </ul> </li> <li>• Conduct physical examination.</li> <li>• Assess sucking reflexes.</li> <li>• Assess cord.</li> <li>• Documents all findings and care provided.</li> </ul>
<p>AT DISCHARGE FROM HOSPITAL</p>	<p><b>Maternal interventions</b></p> <ul style="list-style-type: none"> <li>• Measure vital signs: <ul style="list-style-type: none"> <li>○ measure blood pressure</li> <li>○ measure temperature</li> </ul> </li> </ul>

Time period	Intervention
	<ul style="list-style-type: none"> <li>○ count pulse</li> <li>○ count respirations</li> <li>● Assess extent of uterus contraction.</li> <li>● Conduct physical examination.</li> <li>● Conduct pelvic examination.</li> <li>● Assess vaginal wall.</li> <li>● Assess vaginal discharge for colour, smell and amount.</li> <li>● Administer analgesics.</li> <li>● Document all findings and care provided.</li> </ul> <p><b>New-born assessment</b></p> <ul style="list-style-type: none"> <li>● Measure vital signs: <ul style="list-style-type: none"> <li>○ temperature</li> <li>○ pulse</li> <li>○ respirations.</li> </ul> </li> <li>● Conduct physical examination.</li> <li>● Assess sucking reflexes.</li> <li>● Assess cord.</li> <li>● Administer immunisations (BCG, polio).</li> <li>● Administer infant nevirapine.</li> <li>● Document all findings and care provided.</li> </ul>
TAKE HOME MESSAGES	<p><b>Provide comprehensive information on:</b></p> <ul style="list-style-type: none"> <li>● Proper hygiene by use of saline sitz baths.</li> <li>● Cord care.</li> <li>● Counsel on new-born danger signs: <ul style="list-style-type: none"> <li>○ hypothermia</li> <li>○ high respiratory rate</li> <li>○ fever</li> <li>○ refusal to feed</li> <li>○ septic umbilical cord</li> </ul> </li> <li>● Adherence to ARV drugs</li> <li>● Infant breastfeeding.</li> <li>● Maternal danger signs: <ul style="list-style-type: none"> <li>○ vaginal bleeding</li> <li>○ fever and chills</li> <li>○ headache or blurred vision</li> </ul> </li> <li>● Immunisation schedule</li> <li>● Co-trimoxazole prophylaxis counselling</li> <li>● NVP syrup schedules and dosing</li> <li>● PNC visit at 3–7 days</li> <li>● PNC visit at 6 weeks</li> <li>● Safe infant feeding</li> <li>● Importance of mother's nutrition</li> <li>● Family planning</li> </ul>

(Adapted from WHO 2014:1–67).

Some of the identified gaps in the competencies of midwives during the provision of immediate PNC in this study require a multi-sectoral approach. The multi-sectoral approach is urgent to enable the country to reach or attain the targets of the MDGs, especially 4, 5 and 6. The approach should be in a well-coordinated and focused manner. The researcher adapted a conceptual framework (see section 6.2.2) for the implementation of quality immediate PNC in Swaziland.

## **6.2.2 The derivation process of the conceptual framework**

The findings of this study offer insight into the competencies of Swazi midwives during the provision of immediate PNC to mothers and their infants. The identified gaps in the knowledge and practice of midwives during the provision of immediate PNC require the involvement of multiple stakeholders. This study revealed that there were no differences in the knowledge and provision of immediate PNC to mothers and infants across years of experience, training institution as well as qualifications of midwives. Moreover, it was noted in the study that midwives with a high number of years of experience (6 years and more) (see section 4.12) had the highest knowledge scores (see section 4.12) whilst midwives with a low number of years in experience (0–2 years) reported the lowest scores. This could mean that the curriculum used in midwifery training institutions in Swaziland is not competence-based as outlined by the ICM (KoS, MoH 2011b:25). This challenge requires the involvement of several stakeholders.

### ***6.2.2.1 Why a conceptual framework?***

There is need to increase focus and efforts on performance measurement in the delivery of maternal, newborn and child health services, especially those linked to MDG 4, 5 and 6. This requires new or revised and focused strategies to be centred on the various relationships between organisational structures, clinical practices, and patient outcomes (Handler, Issel & Turnock 2001:1235). A new re-envisaged focus has to be evidence-driven. The Programme of Action of the International Conference on Population and Development Report of the United Nations (United Nations [UN] 2014:12–15) pioneered this need. The Agency for Healthcare Research and Quality supported the research agenda, as well as efforts toward performance measurement supported by accrediting bodies such as the National Committee for Quality Assurance

and the Joint Commission on Accreditation of Healthcare Organisations (Handler et al 2001:1235). Such initiatives require that the government of Swaziland through its Ministry of Health adapt and derive a unified conceptual framework for the provision, monitoring and evaluation of maternal, newborn and child health services, including immediate PNC. This is crucial to enhance the quality of maternal, newborn and child health, thus the improvement of individual client outcomes, including mothers in the postnatal period and their neonates (Handler et al 2001:1235).

At the time this study was conducted, there were no conceptual frameworks in the country to allow an examination of the performance of the public health delivery system and the relationship between the practice of public health and population outcomes. It is assumed that the lack of a conceptual frameworks has contributed to the high maternal (593 per 100 000 live births) and infant mortality (79 per 1000 live births) rates, against well-performing indicators such as high (88%) skilled birth attendance and 97% antenatal care attendance among pregnant women (KoS, CSO 2015a:11). Without a conceptual framework that outlines and guides essential investments for the achievement of reduced maternal and neonatal mortality rates, it would be difficult to attain the targets of the MDGs. Therefore, it is imperative that a conceptual framework be at least derived to help close the identified gaps revealed in this study, regarding the competencies of midwives during the provision of immediate PNC to mothers and infants. This will provide a scientific base for the government of Swaziland, especially its Ministry of Health, to improve the health system performance. It will also clearly articulate the various components of the public health system that require much investment and attention.

### ***6.2.2.2 Meaning of a conceptual framework***

Polit and Beck (2008:126) define a conceptual framework as an abstract generalisation that offers a systematic explanation about how phenomena are interrelated. This definition implies that a conceptual framework has two related but distinct purposes: explanation and prediction. This could be illustrated in the following example. A conceptual framework may provide explanations of how specific habits, such as eating junk foods with no exercise, are related to outcomes like the development of obesity. It is worth mentioning that this definition includes the descriptive element of conceptual frameworks (Polit & Beck 2008:126). On the other hand, Creswell (2009:51) defines a



conceptual framework as a set of constructs that can thoroughly describe a single phenomenon. Again, this definition is also limited as it only focuses on describing phenomena.

Walker and Avant (2011:61) define a conceptual framework as an internally consistent group of relational statements that presents a systematic view about a phenomenon and which is useful for description, explanation, prediction and prescription or control. The present study adopted this definition because of its comprehensiveness and relevance to the improvement of healthcare system performance.

### ***6.2.2.3 Elements of a conceptual framework***

Conceptual frameworks are made up of distinct but interdependent elements. These elements are concepts and statements. Concepts are the basic building blocks of conceptual frameworks (Polit & Beck 2008:127). This implies that concepts serve as potent means of understanding and explaining the world in which we live. They allow people, especially researchers, to gain insight into their experiences and their surrounding environments.

The second building block for conceptual frameworks is statements. According to Walker and Avant (2011:60), statements are the relationships between concepts. This means that statements in the context of conceptual framework development could assume relational or non-relational forms. Relational statements indicate the direction of relationships. In some instances, a phenomenon of 'none relationship' may exist, meaning that the occurrence of one concept says nothing about or has no effect on the occurrence of another (Walker & Avant 2011:60). Associated with relational statements are the non-relational ones, which, according to Walker and Avant (2011:60), are employed to clarify or make explicit meanings in conceptual frameworks. This means that conceptual frameworks are sets of concepts and statements. Polit and Beck (2008:143) state that conceptual frameworks consist of relevant concepts and statements that are systematically organised to offer clear meanings of relationships.

#### ***6.2.2.4 The approaches to conceptual framework development***

According to Walker and Avant (2011:58), the development of a conceptual framework is a process that is guided by three interrelated approaches: derivation, synthesis and analysis. Derivation concerns the steps theorists may take to transpose and re-structure any of the elements of a theory from one context or situation to another. Synthesis, on the other hand, relates to actions that theorists may employ to put together pieces of disjointed information to form a meaningful whole with the view of formulating a conceptual framework.

Analysis is the final approach to conceptual framework development, and is about examining concepts, statements and their relationships to each other (Leshema & Trafford 2007:95–98). Adopting this approach, allows for concepts and statements to be refined, in other words to develop a better understanding of the phenomenon being examined. Analysis, as an approach, is applicable especially in situations where there is a body of extant and relevant literature to allow for the dissection of the whole into its component parts to understand the same better, as asserted by Leshema and Trafford (2007:95–100). During the process of conceptual framework development the above mentioned approaches may have to be repeated on several occasions before achieving a well formulated conceptual framework.

#### ***6.2.2.5 Conceptual framework adaptation: Its application***

The framework proposed in this study was developed through the derivation approach of conceptual framework development. The derivation process for the adaptation process of the conceptual framework included synthesis and analysis. Synthesis was used for the generation of concepts from both the extant literature and study findings. The analysis involved a close examination of the concepts identified for both similarities and differences and clustering those that were similar into thematic categories. These categories and their relationships are illustrated in the proposed conceptual framework (see figure 6.1).

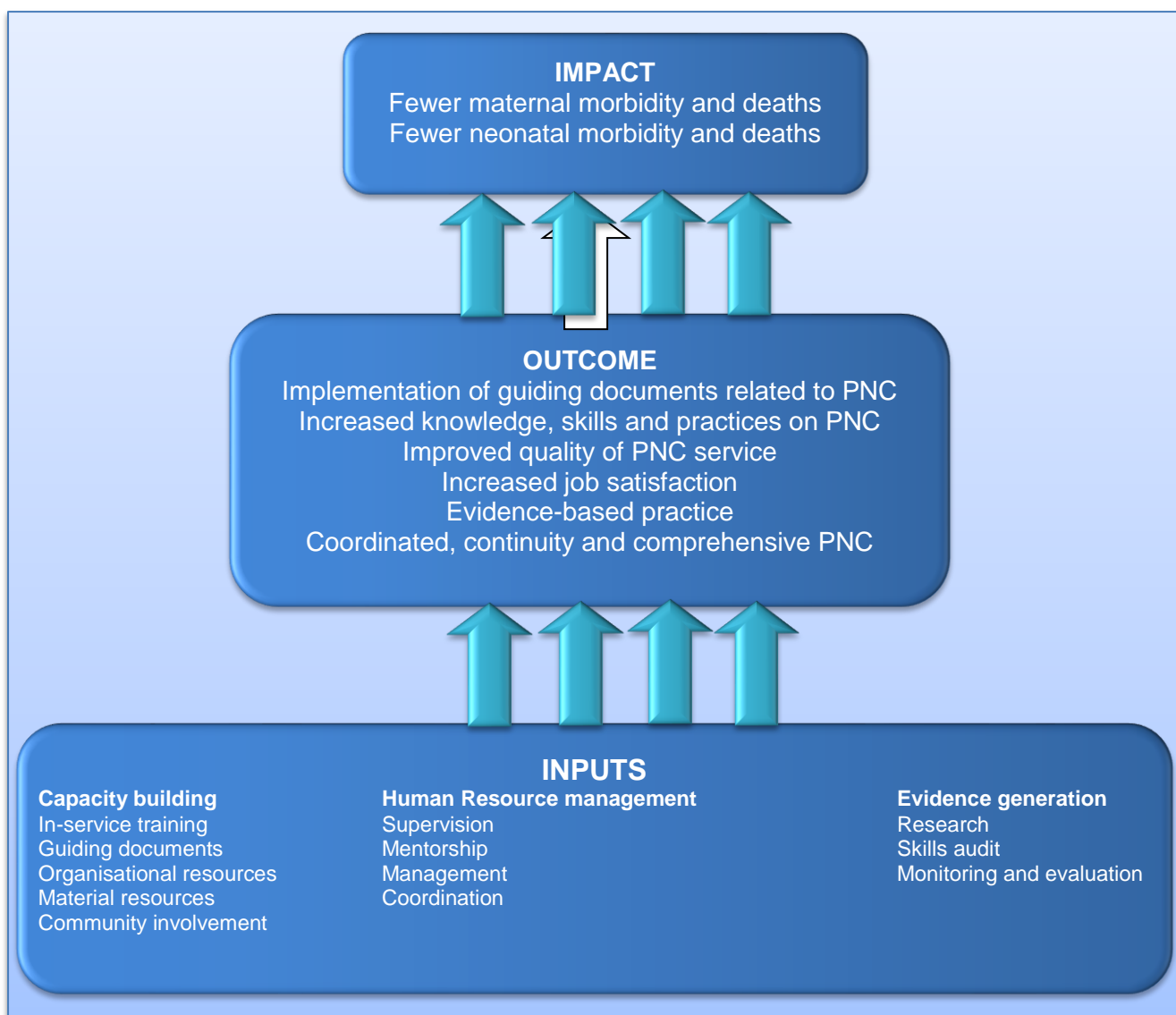
The adaptation process was in conjunction with an expert panel from the SRHU of the Ministry of Health and international NGOs working in maternal, newborn and child health agenda in Swaziland. This process was based on the findings of the present

study regarding the competencies of midwives during the provision of immediate PNC to mothers and infants.

The conceptual framework has three main components: inputs, outcome and impact. The first component emphasises that in order to achieve desired results, one must invest towards those results, and thus it is called inputs (essential investments). This includes capacity building (in-service training, availability of guiding documents, organisational resources, community involvement and material resources), human resource management (supervision, mentorship, management and coordination of healthcare) and evidence generation (research, skills audit and monitoring and evaluation). Moreover, supportive supervision and mentorship can improve the knowledge and practices of midwives during the provision of immediate PNC, especially to HIV-positive mothers and HIV-exposed. This is because didactic learning alone cannot generate clinical expertise in midwifery (Narchi 2011:24).

Skills audit assessment and effective monitoring and evaluation could help in improving the quality of immediate PNC (UNDP 2009:81–83). The latter requires clinical experience to allow midwives to test and refine both theoretical and practical knowledge in actual clinical situations (Narchi 2011:24). Teaching competence-based curriculum to midwives, effective leadership and management by nurse managers as well as provision of in-service training could further influence the knowledge, attitudes and practices of midwives (ICM 2013:1). In-service trainings could influence midwives' knowledge, skills and competency during the provision of immediate PNC, especially to HIV-positive mothers and HIV-exposed infants.

The above could lead to the second component of the conceptual framework, the outcome. If proper inputs or investments could be made in maternal, newborn and child health, there might be rapid implementation of guiding documents related to PNC, increased knowledge, improvement of skills and practice, work satisfaction among healthcare professionals as well as well-coordinated and effective management of the health system. In addition, it might lead to evidence-based practice by midwives. If these could be achieved, the reduction of maternal and neonatal morbidity and mortality deaths could be averted or at least reduced. This will be an impact, which is the last component of the conceptual framework. Figure 6.1 presents the conceptual framework.



**Figure 6.1: Conceptual framework for provision of quality immediate PNC by midwives**

(Adapted from Morestin et al 2009:1–13)

In-order to achieve the desired impact, a multi-stakeholder approach is essential (UNFPA, WHO & IPPF 2012:1). The present study identified a number of stakeholders to help in the implementation of the conceptual framework for provision of quality PNC by midwives in Swaziland.

#### **6.2.2.6 Stakeholders for the implementation of the conceptual framework**

The conceptual framework has components that require a multi-stakeholder approach, particularly the first component (inputs or investments). This could help expedite the

progress towards improving and addressing the gaps identified in the study. The Ministry of Health (MoH) is a priority ministry in the government of Swaziland. It is tasked with provision of overall policy direction for all stakeholders in the health delivery, to ensure a strong and effective advocacy role in inter-sectoral action in health (Government of Swaziland 2014a). The MoH has to mobilise and allocate resources to all providers in the health delivery services, and ensure relevant and adequate information for co-ordination and management of health services. The MoH is expected to provide regulatory frameworks for all providers of health services, including monitoring and evaluation of health services in Swaziland (Government of Swaziland 2014a). This conceptual framework re-affirms the importance of the overall role, direction as well as coordination of health services to ensure sustainability, leadership and transparency by the MoH.

The SRHU is a programme of the MoH commissioned to implement and address maternal neonatal child health issues in Swaziland (Government of Swaziland 2014a). There are several programmes that make up the SRHU. These include safe motherhood, a family planning programme, adolescent sexual reproductive health, social mobilisation and community linkages programme and SRH commodity security. This is aimed at reducing the disease burden on the Swaziland population, which may be sexual reproductive-related, and includes reaching the targets of the MDG 4, 5 and 6. In addition to the above roles and responsibilities, the present study proposes that the SRHU should ensure timely and quality implementation of the SRH policy, guidelines and standard operating guidelines for maternal, newborn and child health.

The SRHU has to provide supportive supervision and mentorship to help close the gaps as discussed. Furthermore, it has the responsibility of providing leadership and coordination at programme level to ensure quality interventions are provided to clients in a well-coordinated manner. The present study proposes that this unit be the central point to the improvement of immediate PNC services. Moreover, SRHU has the responsibility of coordinating partners, the midwifery and nursing regulatory body, midwifery training institutions and health facilities, including the community.

Development partners are to provide financial and technical assistance to governments, NGOs and other institutions. This includes advocating for development at all levels. Development partners promote good standards, practices, policies and guidelines that

maximise the health of citizens (Government of Swaziland 2014a). Development partners are principle-governed. These principles include integrity, support and collaboration. Development partners support governments to meet international, regional and national targets. MDGs are the guiding principles for target setting. The proposed framework proposes that such partners should provide expertise in the design and delivery of quality immediate PNC. This should be consistent and according to well-defined strategies, services and communication to achieve best strategic results or indicators. The conceptual framework will ensure the highest performance against benchmarks, most efficient application infrastructure, and maximised system-wide and resource mobilisation. Development partners should be linked directly to the directorate of MoH, while providing quality and effective technical and financial support to SRHU and other implementation partners.

The Swaziland Nursing Council is accountable to the Ministry of Health in Swaziland (Government of Swaziland 2014a). Therefore, the Swaziland Nursing Council –

- promote professional excellence and quality nursing and midwifery care
- protect the public trust by ensuring that nurses and midwives who wish to practice nursing and midwifery in the Kingdom of Swaziland are eligible and qualified to meet licensure and other practice requirements

The objectives of the Swaziland Nursing Council are to promote, preserve and protect the community health safety and welfare by and through the effective control and regulation of the practice and education of nursing and midwifery (Government of Swaziland 2014a). This is to ensure that any person practicing nursing and/or midwifery, as defined in the Swaziland Nursing Council Act (Government of Swaziland 2014a), or using the title of registered nurse, certified midwife, nurse specialist, or nursing assistant shall be licensed (Government of Swaziland 2014a).

The framework depicted in figure 5.2 proposes that, in addition to the above, the Swaziland Nursing Council should ensure that midwifery training institutions teach the ICM competence-based curriculum (Government of Swaziland 2014a). The Swaziland Nursing Council should regularly evaluate the curriculum used in the training institutions. Moreover, the Swaziland Nursing Council should conduct skills assessment, to ascertain the competencies of midwives (Government of Swaziland 2014a).

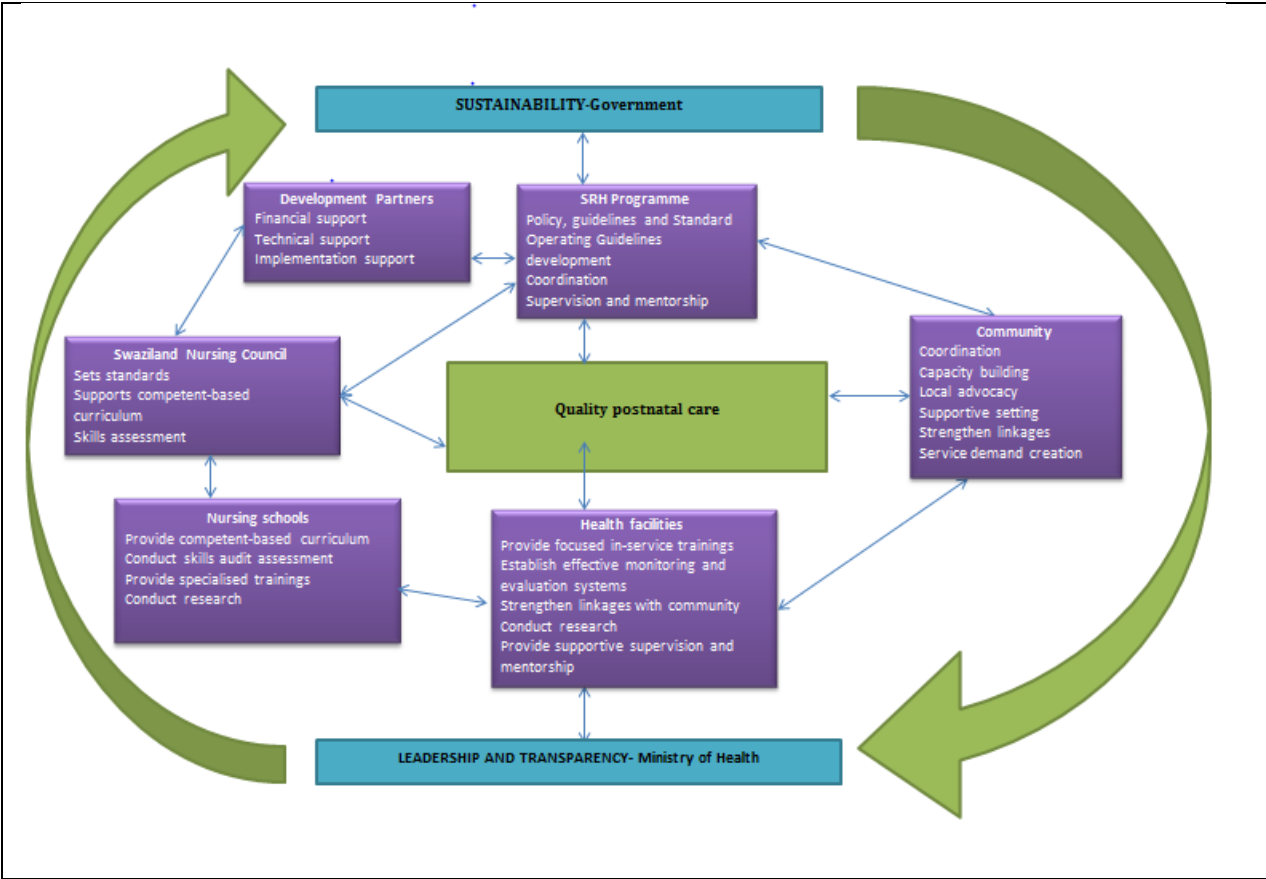
Training institutions should teach the competence-based curriculum (KoS, MoH 2011b:25). This should include both theory and practicum. Such teaching will result in the training of competent midwives, who can demonstrate the ability to perform the functions of a midwife. It will also allow midwives to perform their roles and responsibilities in a safe, reliable and efficient manner within the scope of practice as defined by the Nurses and Midwives Act of Swaziland. Moreover, midwifery schools should conduct skills audit assessment and research related to knowledge, skills and practices in midwifery (KoS, MoH 2011b:25). The present study proposes that the evidence from the conducted studies should enable schools to provide specialised in-service training as needed. This will ensure that gaps are identified and attended to in a timely and effective manner.

Swaziland has achieved the WHO recommendations that health facilities should be within a radius of 8 kilometres (KoS, MoH 2013a:10). The framework for quality provision of PNC by midwives (see figure 5.1) suggests that health facilities should provide quality maternal, newborn and child health services. This should be the result of a well-coordinated, managed and focused in-service training. Administrators and midwives in health facilities should establish effective monitoring and evaluation systems toward the provision of quality PNC services. It cannot be emphasised enough that health facilities should strengthen linkages with the community while providing supportive supervision and mentorship to newly recruited professionals. Healthcare professionals should conduct research, especially clients' satisfaction surveys, to avoid repeating problems over and over again.

Community involvement is a very important aspect of public health programmes (KoS, MoH 2013a:23; UNFPA, WHO & IPPF 2012:1). Members of the community should therefore always be capacitated and consulted in developing public health programmes. Community involvement should be used to generate not only ideas for revitalisation of public health projects and their implementation, but also ideas to improve existing maternal, newborn and child health features further. Revitalisation can be facilitated and enhanced by finding out what the community needs, what will benefit the community, what has been tried in the past, and what could be done to improve past ideas. Community members may have special issues or concerns that, if incorporated into maternal, newborn and child health programmes at the outset, may help to reduce the

likelihood of challenges to risk assessment results and potential remediation or revitalisation plans. Only an informed community can be part of the decision-making process, which then will lead to a sustainable revitalisation of maternal, newborn and child health, especially immediate PNC. Community members, especially key community gatekeepers, can contribute to the revitalisation planning process.

The present study proposes that within the community there should be coordination structures for maternal, newborn and child health issues. This should be done with the help of the SRHU. These structures should also be capacitated so that they can be advocates for maternal, newborn and child health. This will ensure a supportive environment and strengthened linkages, while promoting service demand, uptake and retention in maternal, newborn and child health services. Figure 6.2 presents the mapped stakeholders and their responsibilities.



**Figure 6.2: Mapped stakeholders and their responsibilities**

The conceptual framework and the above mapped stakeholders could enable the Ministry of Health in Swaziland to achieve its corporate goals by improving decision



support objectives, business processes and resource mobilisation. The mapped stakeholders could help the Kingdom of Swaziland in ensuring a well-coordinated and focused SRH work as it strives hard to meet the global, regional and national targets.

### **6.3 LIMITATIONS OF THE STUDY**

The results of this study cannot be generalised to the whole of Swaziland with caution, as it was conducted in only six health facilities. However, its outcomes generated huge insight into PNC. During the course of the study, there was a strike in one of the study sites. This could have led to incorrect information provided by the respondents. The issues of space to conduct interviews in a confidential manner were a challenge. Some respondents were reluctant to sign the consent form for participating in the study for fear of being identified, despite being assured of confidentiality.

### **6.4 RECOMMENDATIONS**

Based on the findings, the researcher makes the following recommendations to improve the quality of immediate PNC rendered to mothers and newborns.

#### **6.4.1 Postnatal care services**

To improve the quality of PNC rendered to mothers, the Ministry of Health, especially the SRHU, should do the following:

- Provide evidence-based programming that would encourage donor agencies to support the provision of integrated maternal, newborn and child health services. Comprehensive supervision and mentorship should be provided to midwives, particularly those working in maternity units, to ensure that quality interventions are provided to clients across the continuum of pregnancy, labour, and delivery, and postpartum.
- Conduct training needs assessment and skills audit in collaboration with partners, midwifery schools and regulatory bodies and provide evidence-based in-service training and/or specialised training in PNC to ensure that a competent midwifery workforce is maintained.

## **6.4.2 Nursing and midwifery schools**

Nursing and midwifery schools should do the following:

- Engage partners and regulatory bodies to review evidence on the competencies of midwives in line with the midwifery curriculum. This will ensure that midwifery schools teach a competence-based curriculum (as approved by the Swaziland Nursing and Midwifery Council) to equip graduates with knowledge and skills necessary to render quality maternal, newborn and child health services.
- Constantly advocate to development partners for continuous support for capacity building among midwifery lecturers for their abilities to teach relevant and evidence-based programmes.

## **6.4.3 Midwifery practice**

To improve midwifery practice, it is important to ensure that the Swaziland Nursing Council:

- Advocates for midwifery training institutions to teach the Swaziland Nursing and Midwifery competence-based curriculum in order to meet the global expectations while also ensuring that midwives offer quality immediate PNC services.
- Implement the adapted guidelines and conceptual framework to urgently improve the quality of immediate PNC care in Swaziland.
- Develop or establish standards and conduct skills assessment to ascertain the competencies of practicing midwives in Swaziland, including provision of in-service training to update knowledge and skills related to maternal, newborn and child health among skilled birth attendants.

## **6.5 RECOMMENDATIONS FOR FURTHER RESEARCH**

The researcher recommends further research to be conducted in the following areas:

- a mixed method study to determine the accuracy and the skills of midwives during the provision of PNC services in Swaziland

- a longitudinal study to evaluate the outcomes of HIV-exposed infants, whose mothers attend PNC services

## **6.6 CONCLUSION**

It was noted in this study and extant literature that effective provision of postpartum care during the first 48 hours after delivery to the mother and her newborn could prevent or reduce morbidity and mortality. The researcher acknowledges that there is a need for multi-sectoral effort that requires clear guidelines to improve the competencies of midwives in Swaziland. Thus, adoption of the proposed guidelines and conceptual framework developed from the outcome of this study could reduce or alleviate maternal, neonatal and infant mortalities in Swaziland. The Kingdom of Swaziland has to put more effort into reducing maternal and neonatal deaths. This study is a useful tool in supporting this country in its race or efforts towards reducing maternal and neonatal deaths.

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# **ANNEXURES**

**INTERVIEW GUIDE FOR MIDWIVES**

Questionnaire code:
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**SECTION A: BIOGRAPHIC INFORMATION**

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**A. How old are you in years?**

What is the number of years since your initial midwifery training?

- 0-2 years
- 2-4 years
- 4-6 years
- 6 years and above

**B. What is your qualification?**

- State registered midwife with certificate
- State certified midwife with Bachelor's degree
- Advanced midwife with Certificate

**C. Where were you trained?**

- SANU or NCN
- UNISWA
- Outside Swaziland

**IN SERVICE CAPACITY BYUILDING FOR MIDWIVES**

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***D. Do you attend to in-service trainings?***

- Yes
- No

***E. If yes, when last did you attend such?***

- 0-1month
- 1-6 months
- 6months-1year
- 1 year and above

***F. Can you list trainings you have attended, while working in the maternity***

**DO NOT READ RESPONSES. RECORD ALL THAT ARE MENTIONED.**

- Psychosocial support for Children and Adolescent
- Emergency Obstetric and Neonatal Care
- Nurse Led Antiretroviral Therapy Initiation in Swaziland
- TB/HIV co-infection training
- HIV counseling and testing
- ART/IMAI clinical training, management of child illness
- Prevention of Mother To Child Transmission of HIV
- Syndromic management of sexual transmitted infections.
- The Care and Treatment of HIV-infected children
- Post-natal care

Any other, specify.....  
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Additional

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**SECTION B: KNOWLEDGE AND PRACTICE OF IMMEDIATE POSTNATAL SERVICES**

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*1. Please list as much as you can, essential maternal postnatal care interventions you are providing to HIV infected mothers immediately after delivery within 30 minutes after childbirth.*

**DO NOT READ RESPONSES. TICK ALL THAT ARE MENTIONED.**

**Maternal interventions**

- Palpates the uterus to make sure no other baby is present
- Administers a uterotonic drug
- Deliver and place the placenta in a receptacle provided (e.g., kidney basin)
- Massage the fundus of the uterus through the woman’s abdomen until the uterus is contracted (firm)
- Expel clots

- Inspects and repairs lacerations or tears (if necessary) of the lower vagina and perineum
- Repairs episiotomy (if one was performed)
- Examines the placenta and membranes for completeness and abnormalities
- Estimates blood loss
- Assists the woman and baby to begin breastfeeding within the first hour after birth
- Measure blood pressure
- Measure temperature
- Count pulse
- Count respirations
- Documents all care provided

**Write other mentioned interventions**

- A. ....
- B. ....
- C. ....
- D. ....
- E. ....

Additional notes.....

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**2. Please list as much as you can, essential newborn care interventions you are providing to HIV-exposed newborns immediately post-delivery (within 30 minutes after childbirth)**

**New-born Assessment**

**DO NOT READ RESPONSES. RECORD ALL THAT ARE MENTIONED**

- Quickly assess the baby for APGAR. At 1minute and 5 minutes
- Wipe excess mucus from mouth
- Place the baby in skin-to-skin contact on the mother’s abdomen
- Thoroughly dries the baby and cover the baby, including the head
- Clamps and cuts the cord approximately 2-3 minutes after the baby’s birth or cessations of pulsation, whichever comes first
- Conduct quick physical examination
- Instil 1% tetracycline eye ointment to the child
- Injected Vitamin K 0.5mg intramuscular to the child
- Administered infant nevirapine
- Documents all findings
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Additional services mentioned.....  
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Document additional observation.....  
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**3. What information do you give to HIV positive mothers immediately after delivery within 30 after childbirth:**

**DO NOT READ RESPONSES. RECORD ALL THAT ARE MENTIONED**

- Proper hygiene
- Cord care
- Counsel on new-born danger signs tick mentioned
  - Hypothermia
  - High respiratory rate
  - Fever
  - Refusal to feed
  - Bleeding umbilical cord
- Adherence to antiretroviral drugs
- Infant breastfeeding
- Monitoring of vaginal bleeding
- Fever and chills
- Headache or blurred vision
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Additional information mentioned.....  
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**SECTION C: KNOWLEDGE AND PRACTICE OF PRE-DISCHARGE POSTNATAL CARE SERVICES FOR MOTHERS**

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*Please list as much as you can essential postnatal care services you are offering to HIV-infected mothers on discharge from hospital.*

**DO NOT READ RESPONSES. TICK ALL THAT ARE MENTIONED**

**Maternal interventions**

- Measure blood pressure
- Measure temperature
- Count pulse
- Count respirations
- Assess extent of uterus contraction
- Conduct physical examination
- Conduct pelvic examination
- Assess vaginal wall
- Assess vaginal discharge for colour, smell and amount
- Administer analgesics
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Additional services mentioned.....  
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**Please list as much as you can essential postnatal care services you are offering to HIV-exposed newborns on discharge from hospital.**

**New-born care**

- Measure temperature
- Count pulse
- Count respirations
- Conduct physical examination
- Assess sucking reflexes
- Assess cord
- Administer immunizations (BCG,Polio)
- Administer infant nevirapine

Additional services mentioned.....  
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**What information do you give to HIV positive mothers on discharge from hospital?**

**DO NOT READ RESPONSES. TICK ALL THAT ARE MENTIONED**

- Proper hygiene by use of saline sitz baths
- Cord care
- Counsel on new-born danger signs
  - Hypothermia
  - High respiratory rate
  - Fever

- Refusal to feed
- Septic umbilical cord
- Adherence to antiretroviral drugs
- Infant breastfeeding
- Monitoring of vaginal bleeding
- Fever and chills
- Headache or blurred vision
- Immunization Schedule
- Cotrimoxazole prophylaxis counselling
- NVP syrup schedules and dosing
- Postnatal care visit at 7- 14days
- Postnatal care visit at 6 weeks
- Safe infant feeding
- Importance of your nutrition
- Family planning

Additional information mentioned.....  
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**SECTION D: OPEN-ENDED QUESTIONS FOR RESPONDENTS TO RESPOND TO QUESTIONS IN THEIR OWN WORDS**

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*Do you have challenges in providing immediate postnatal care services in your hospital? TICK THE ANSWER.*

Yes

No

*If yes, can you please list those challenges in following categories?*

***In-service***

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***Supervision***

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***Guidelines***

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**What can be done to improve PNC services in your facility?**

***In-service***

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***Supervision***

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**Guidelines**

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**Any other information you can share on immediate postnatal care**

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**From you experience how do your clients view your interpersonal skills as midwives?**

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**What is the average time a postnatal woman (normal vaginal delivery) spends in your facility? And what are contributing factors to that?**

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**Do you frequently monitor HIV-infected mothers and their newborns within the first 24 hours post-delivery?**

- Yes
- No



If yes, how frequently?

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What PNC services do you provide during your monitoring? **Record all what is mentioned**

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If you do not monitor HIV-infected mothers and their newborns within the first 24 hours post-delivery, why?

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Any other information you can share on immediate postnatatal care

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**QUESTIONNAIRE FOR SENIOR MIDWIFE PER STUDY SITE**

**Structure**

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1. Do you have midwives in the maternity unit?

a) Yes

b) No

2. Do you submit monthly PNC reports to the MoH (M&E unit)?

a) Yes

b) No

3. Do you have any quality assurance mechanism in place?

a) Yes

b) No

4. Is the bio-medical unit working well?

a) Yes

b) No

c) Other specify.....

5. How are your maternity services linked with the community?

a) Through Rural health motivators

b) Through Expert clients

c) Not linked at all

d) Other specify.....

6. Where do you order your PNC supplies?

a) CMS

b) Regional health office

c) Development partners

d) Other specify.....

## Outcome

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7. Do you have strategies to capture Maternal Mortality Ratio during immediate PNC in your facility?

a) Yes

b) No

8. If yes, how do you capture this.....

9. Do you have strategies to measure neonatal mortality rate?

a) Yes

b) No

10. How do you measure your client satisfaction?

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## Human resources

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Item	Please tick if reported to be available	Comments
Midwives		

## Material resources

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Item	Please tick if seen	Comments
NVP syrup		
NVP clips		
NVP Syringe		
Cotrimoxazole tablets		
Isoniazid tablets		
Cotrimoxazole syrup		
Isoniazid syrup		

<b>Item</b>	<b>Please tick if seen</b>	<b>Comments</b>
Zidovudine tablets		
Lamivudine tablets		
BCG vaccine		
Polio drops		
DPT vaccine		
Vitamin A		
Thermometers		
Sphygmomanometer		
Intra venous fluids		
Uterotonic drugs (e.g Oxytocin)		
Analgesics		
Magnesium Sulphate		
Antibiotics (e.g amoxyl, Benzathine Benzylpenicillin, Metronidazole etc		
Hypertensive drugs (e.g Mytheldopa,		
Disinfectants (e.g polyvidone iodine, chlorine base compound, chlorhexidine etc)		
Examination bed		
Safe water		
Electricity		
Laundry		
Steriliser		
Functioning telephone		
Ambulance		
Car to evacuate referrals		
HIV determine		
HIV unigold		
PCR-DNA TESTS		

**Organizational resources**

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Item	Please tick if reported available	Comments
Patient cards		
Child welfare cards		
Postnatal register		
MoH postnatal guidelines		
Central Medical Stores ordering forms		
Minutes for quality assurance meetings		
Trainings attendance list		
MOH PMTCT guidelines		

Any other supplies mentioned for postnatal care

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## Annexure C Letter seeking consent from the Ministry of Health of Swaziland

P. O. Box 7946  
Mbabane

5<sup>th</sup> November 2013

The Chairperson  
The Scientific and Ethical Committee  
Ministry of Health  
P. O. Box 5  
**MBABANE**

Dear Sir/Madam

**RE: Request to conduct a study to HIV positive mothers and their infants in selected health facilities.**

I am a first year Doctoral Degree student at the University of South Africa. In partial fulfilment of the requirements of the programme, I am required to conduct a research project. My research topic is "The knowledge, attitudes and practices of midwives during the provision of immediate postnatal care interventions to HIV-positive mothers and their infants. a Swaziland analysis".

The study sites are Mbabane Government Hospital (Maternity), Mkhuzweni Health Centre (maternity), RFM Hospital (maternity), Good Shepherd Hospital (maternity), Matsanjeni Health Centre (maternity) and Hlathikulu Government Hospital (maternity). I intend to conduct a face to face interview following a questionnaire. Confidentiality and anonymity will be achieved by not putting names of subjects on the data collecting tools, but instead codes will be used. Verbal and written consents will be required from subject to express their willingness to participate in the study. Respondents will be informed that they have a right to choose to either participate or not in the research. . I therefore request for permission to conduct the research study.

Your consideration of my request will be greatly appreciated.

Yours Faithfully

  
Bongani Robert Dlamini



## Annexure D Letter of approval from the Ministry of Health of Swaziland

Telegrams:  
Telex:  
Telephone: (+268 404 2431)  
Fax: (+268 404 2092)



MINISTRY OF HEALTH  
P.O. BOX 5  
MBABANE  
SWAZILAND

### THE KINGDOM OF SWAZILAND

**FROM:** The Chairman  
Scientific and Ethics Committee  
Ministry of Health  
P. O. Box 5  
Mbabane

**TO:** Mr. Bongani Dlamini  
Principal Investigator

**DATE:** 13<sup>th</sup> February 2014

**REF:** MH/599C/ FWA 000 15267/IRB 0000 9688

**The Knowledge, Attitudes and Practices of Midwives during the provision of immediate Postnatal Care Interventions to HIV-positive Mothers and their Infants. A Swaziland Analysis.**

The committee thanks you for your submission to the Swaziland Scientific and Ethics Committee, an Expedited review was conducted.

**In view of the importance of the study and the fact that the study is in accordance with ethical and scientific standards, the committee therefore grants you authority to conduct the study. You are requested to adhere to the specific topic and inform the committee through the chairperson of any changes that might occur in the duration of the study which are not in this present arrangement.**

The committee requests that you ensure that you submit the findings of this study (Electronic and hard copy) to the Secretariat of the SEC committee.

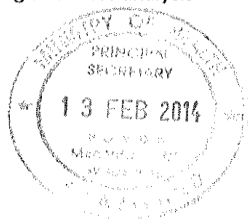
**The committee further requests that you add the SEC Secretariat as a point of contact if there are any questions about the study on 24047712/24045469.**

The committee wishes you the best and is eagerly awaiting findings of the study to inform proper planning and programming to use for analysis

Sincerely,

Handwritten signature of Dr. S.M. Zwane.

**Dr S.M. Zwane**  
DIRECTOR OF HEALTH SERVICES  
(THE CHAIRMAN)  
cc: SEC members



**Annexure E Consent form for a research respondent**

I.....on this day.....of ..... 2014 confirm that I was fully informed of the research project, I am aware that my privacy will be safeguarded and that all the information I share with the researcher will be confidential. I am also aware that I can withdraw from participation at any stage of the interview and that this will not negatively influence the health care given to me. I know that I do not have to suffer any harm or injury during the research process. The information that I give to the researcher should be solely used for research purpose and my identity shall be protected.

_____	_____	_____	_____
<b>Name of Respondent</b>	<b>Date</b>	<b>Time</b>	<b>Signature/Thumb</b>
<b>Print</b>			