

Implementation of the Basic Antenatal Care approach: A tailored practice framework for eThekweni District, KwaZulu-Natal

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Nursing in the Faculty of Health Sciences at the Durban University of
Technology

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Declaration

This is to certify that the work is entirely my own and not that of any other person, unless explicitly acknowledged (including citation of published and unpublished sources). The work has not previously been submitted in any form to the Durban University of Technology or to any other institution for assessment or for any other purpose.

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Abstract

Globally antenatal care is advocated as the cornerstone for reducing children's deaths and improving maternal health. The World Health Organization designed and tested a Focussed Antenatal Care model for the developing countries to improve their quality of antenatal care services. South Africa has not successfully implemented this approach, referred to by South Africa as the Basic Antenatal Care approach.

A convergent parallel mixed methods design was used to assess how the Basic Antenatal Care approach was implemented in the eThekweni district. Data were collected from 12 Primary Health Care clinics using observations, retrospective record reviews and semi-structured interviews conducted with pregnant women. The quantitative data was analysed using version 21.0 of the Statistical Package of Social Services and qualitative data was analysed using Tech's method of data analysis.

The Basic Antenatal Care approach was not being successfully implemented in the Primary Health Care clinics. Several aspects of planning, people, processes and performance were not done according to the Basic Antenatal Care Principles of Good Care and Guidelines. Although good communication was observed between the clinic staff members and the referral institutions, communication problems existed between the Primary Health Care clinics and the Emergency Medical Rescue Services and also with the pregnant women. Antenatal care and delivery plans and the midwives' counter checking of maternity charts were not recorded. Some pregnant women had positive perceptions about the antenatal care services but others had negative perceptions. Recommendations pertaining to institutional management and practice, nursing education and research were made.

A tailored practice framework and an implementation guide were developed based on setting and client-specific factors to facilitate the implementation of the Basic Antenatal Care approach. The framework highlights the importance

of cooperation between management and administration, in-service education and skills development departments/units and the operational level. Effective implementation of the Basic Antenatal Care approach could help to reduce South Africa's high maternal and neonatal mortality rates. Thus the tailored practice framework and implementation guide, developed as part of this study, could help to improve maternal and neonatal health-related outcomes in South Africa.

Dedication

This study is dedicated to my late mother, Tabisile Paulina Mzelemu, with sincere gratitude for all the love and care that she gave to me as her only daughter and the lessons that she taught me in life.

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Luke 6: 38 A good measure, pressed down, shaken together and running over, will be poured into your lap. For with the measure you use, it will be measured to you.

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Chapter Outline

Chapter	Title	Content description
1	Overview of the study	<ul style="list-style-type: none"> • Orientation to the study, research background, overview of the research problem, aims and objectives, research questions, significance of the study.
2	Literature Review	<ul style="list-style-type: none"> • An in-depth review of the literature related to the topic under investigation to give the researcher information on what is published or discussed in the literature about the subject. • Selection and discussion of the theoretical framework that was used to guide the study.
3	Research Methodology	<ul style="list-style-type: none"> • Theoretical foundation and the overall plan and research procedures for addressing the research question, objectives including the ethical considerations, validity and reliability. Application of the theoretical framework.
4	Presentation of Results	<ul style="list-style-type: none"> • Presentation and interpretation of the research findings. • Data conversion: Quantitising qualitative results.
5	Discussion of Results	<ul style="list-style-type: none"> • Discussions of research findings. • Triangulation of the study result. • Mixing/ converging of the two data sets. • Conclusions and recommendations based on the research findings. • Limitations of the study.
6	Development of the Best Practice Framework	<ul style="list-style-type: none"> • Presentation of the best practice framework. • Guide for implementation of the practice framework.

Glossary of Terms

Advanced midwife: It is an advanced practice nurse who have received additional training in midwifery and therefore regarded as expert in the field of midwifery (Nieminen, Mannevaara and Fagerstro 2011: 661).

Advanced practice nurse: Nieminen, Mannevaara and Fagerstro (2011: 661) define advanced practice nurse as a registered nurse that has the expert knowledge required, the ability to make complex decisions and the clinical competence for expanded work description, whose character is formed by the context and/or the country where they have the right to work.

Antenatal care: This is the health care that is rendered to the pregnant women throughout pregnancy until child birth and is aimed at detecting those problems which already exist or those that can develop in the pregnant woman and her unborn child (Pattinson 2007: 5)

Antenatal care visit: A visit is when a person goes to see someone or something for a specific purpose, such as to give or receive professional advice (Hornby 2010: 1611). Therefore, antenatal care visit is when a pregnant woman goes to a PHC clinic to receive ANC health services.

Approach: An approach is defined in The Free Dictionary (n.d.) as the procedures and techniques characteristic of a particular discipline or field of knowledge and a means or manner of procedure, especially a regular and systematic way of accomplishing something.

Basic Antenatal Care: Basic Antenatal Care is the minimum level of ANC that every pregnant woman should receive. This care has been simplified to a bare minimum so that every clinic sister should be able to perform it (Pattinson 2005b: 1).

Chi-square goodness-of-fit-test: Chi-square goodness-of-fit-test is a univariate test, used on a categorical variable to test whether any of the response options are selected significantly more/less often than the others (Burns and Grove 2009: 690).

Client: A client is a person that is dealt with by social or medical services (Hornby 2010: 262). In the current study client shall mean a pregnant woman who presents at the PHC clinics for antenatal care services.

Client specific factors: A factor is defined (Hornby 2010: 526) as one of several things that cause influence. According to (Hornby 2010: 1430), specific means detailed and exact; connected with one particular thing only. Therefore, client specific factors are those factors that are peculiar or specific to the client. In the current study client specific factors would include views of pregnant women identified during the interviews regarding how the ANC services should be provided.

Clinic: A clinic is defined by Hornby (2010: 263) as a place or hospital department where outpatients are given medical treatment or advice, especially of a specialist nature. In the current study the clinic staff shall mean all health care workers in the clinic including the support staff such as clerks and lay counsellors.

Clinic staff: Staff is defined by Hornby (2010: 1448) as all the people employed by a particular organisation. In the current study the clinic staff shall mean all health care workers employed in the PHC clinic including the support staff such as clerks and lay counsellors.

Convergent: Hornby (2010: 320) describes convergent as when things come together from different directions so as eventually to meet at a certain point/place. In the current study convergent shall mean coming together of the two strands of the study (quantitative and qualitative) allowing for mixing of the information from the two data sets at one point of the study which in the current study took place during the interpretation and discussion of the results from the two data sets.

Conversion: Hornby's (2010: 320) definition of conversion is when something is changed from one use, function, or purpose to another. In the current study conversion shall mean transforming the results from their original form to the other which in the current study included transforming the qualitative data into quantitative data (Quantitising qualitative data).

Culture: Oakland (2005: 32) defines culture as a belief that pervades the organisation about how business should be conducted and how employees should behave and should be treated. In the current study culture shall mean the general atmosphere that prevails at the clinic between staff and between staff and the clients.

Framework: This is a particular set of rules, ideas, or beliefs which you use in order to deal with problems or to decide what to do (Collins English Dictionary n.d). In the current study a framework will include the particular set of ideas or beliefs used to implement the Basic Antenatal Care approach.

Fisher's exact test: Fisher's exact test is a statistical procedure used to test the significance of the difference in proportions, used when the sample size is small or cells in the contingency table have no observations (Polit and Beck 2013: 754).

Implementation: The process of putting a decision or plan into effect (Hornby 2010: 753). Implementation is further clarified as the realisation of an application, or execution of a plan, idea, model, design, specification, standard, algorithm, or policy. To implement a system successfully, a large number of inter-related tasks need to be carried out in an appropriate sequence. In the current study implementation shall mean putting the BANC approach into effect.

Inference: This is the use of inductive reasoning to move from specific case to general truth (Burns and Grove 2009: 704), the process of making sense out of the results of data analysis which includes the entire dynamic journey from idea to data and to results in an effort to make sense of data by connecting the dots (Polit and Beck 2012: 653).

Maternity case record card: A record card is a piece of card or file that you use to keep a record of information (Collins' Dictionary n.d). Therefore, a maternity case record card is a card that is used to record and keep health care information during pregnancy, labour and puerperium.

Maternal mortality rate: This is the number of resident maternal deaths within 42 days of pregnancy termination due to complications of pregnancy, childbirth, and the puerperium in a specified geographic area (country, state, county, etc.) divided by total resident live births for the same geographic area for a specified time period, usually a calendar year, multiplied by 100,000 (Centre of Disease Control and Prevention (CDC 2007).

Midwife: A person who, having been regularly admitted to a midwifery educational programme, duly recognised in the country in which it is located, has successfully completed the prescribed course of studies in midwifery and has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery. The midwife is recognised as a responsible and accountable professional who works in partnership with women to give the necessary support, care and advice during pregnancy, labour and the postpartum period (International Confederation of Midwives 2001: 1).

Midwifery: This is the profession or work of a midwife (Hornby 2010: 936).

Neonatal mortality rate: The ratio of the number of deaths of the new born children in the first 28 days of life to the number of live births occurring in the same population during the same period of time, further divided into early neonatal death (that happening within seven days) and late neonatal death (that happening after seven days but within 28 days) (CDC 2007).

Primary Health Care: Primary Health Care is essential health care based on practical, scientifically sound and socially acceptable methods and technology. It is made universally accessible to individuals and families in the community through their full participation and at a cost that the community and the country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination (World Health Organization and United Nations International Children's Emergency Fund [UNICEF] 1978).

Primary Health Care clinic: This is a clinic that provides comprehensive quality health care including promotive, preventive, curative, rehabilitative and palliative services at a level that is below the hospital level (National Department of Health [NDoH] 2001: 7).

Quantitising: This is the process of coding and analysing qualitative data quantitatively (Polit and Beck 2012: 763).

Routine visit: (Hornby 2010: 1291) defines routine as something that is done or that happens as a normal part of a situation or process. In the current study routine visit shall refer to the ANC care visits scheduled for all pregnant women.

Setting specific factors: The setting refers to a set of surrounding, the place at which something happens (Hornby 2010: 1351). Therefore, setting specific factors refers to those factors that are applicable and specific to a place which in the current study are specific to the PHC clinics and or the eThekweni District.

Successful implementation of BANC: According to Hornby (2010: 1491) successful means achieving your aim or what was intended. Therefore, successful implementation of the BANC approach means being able to implement the BANC approach according to the guiding documents which are the BANC Handbook (Pattinson 2007) and the Principles of Good Care and Guidelines (Pattinson 2005a).

Tailored practice framework: Tailored means custom made (Hornby 2010: 1520); practice means carrying out or performing a particular activity (Hornby 2010: 1148) and a framework refers to a structure of a particular system; a set of beliefs, ideas or rules that is used as the basis for making a judgement and/or decision (Hornby 2010: 594). Therefore, a tailored practice framework is the broad overview, outline or structure that is custom made for performing a particular activity. In the current study a tailored practice framework shall mean a framework that is specific to eThekweni District.

Total Quality Management: Total Quality Management (TQM) is a comprehensive and structured approach to organisational management that seeks to improve the quality of products and services through ongoing refinement in response to continuous feedback (Oakland 2008: 29).

Triangulation: a process and/or outcome which involves the combination and comparison of multiple data sources, data collection and or analysis procedures, research methods and inferences that occur at the end of the study (Teddlie and Tashakkori 2009: 32-33).

Wilcoxon Signed Ranks test: A non-parametric test used to test, in this study, whether the average value is significantly different from a value of 3 (the central score). This is applied to Likert scale questions. It is also used as an alternative to the paired t-test.

Acronyms

Acronym	Full word/sentence
ADM	Advanced Midwife
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal care
ART	Anti-retroviral treatment
ARV	Anti-retroviral drugs
ATT	Tetanus toxoid
BANC	Basic antenatal care
BP	Blood pressure
CARMMA	Campaign for the Accelerated Reduction of Maternal Mortality in Africa
CHC	Community Health Centre
CHIP	Child Health Problem Identification Programme
CINAHL	Cumulative Index to Nursing and Allied Health Literature
DENOSA	Democratic Nurses Organisation of South Africa
DHS	District Health System
DOH	Department of Health
DUT	Durban University of Technology
EBSCO	Elton B. Stephens Co
EM	eThekweni Municipality
EN	Enrolled nurse
ENA	Enrolled nursing assistant
EMRS	Emergency Medical Rescue Services
ERIC	Education Resources Information Centre
FANC	Focused antenatal care
GP	Gauteng Province

Acronym	Full word/sentence
HAST	HIV, AIDS, STI and TB
Hb	Haemoglobin
HEAT	Health Education and Training
HIV	Human Immune Deficiency Virus
HST	Health Systems Trust
ICM	International Confederation of Midwives
ICN	International Council of Nurses
IMCI	Integrated Management of Childhood Illnesses
ISMP	Institute for Safe Medication Practices
IREC	Institutional Research Ethics Committee
JHPIEGO	Johns Hopkins Program for International Education in Gynaecology and Obstetrics
KZN	KwaZulu-Natal
KZNPA	KwaZulu-Natal Provincial Administration
MDG	Millennium Development Goals
MDS	Managing Access to Medicines
MMR	Maternal mortality rate
MNCWH	Maternal, neonatal, children's and women's health
MNH	Maternal and neonatal health
MOU	Midwives' obstetric units
MRC	Medical Research Council
NCCEMD	National Committee for Confidential Enquiry into Maternal Deaths
NDoH	National Department of Health (of South Africa)
NHI	National Health Insurance
NMR	Neonatal mortality rate
NSDA	Negotiated service delivery agreement
OECD	Organization for Economic Cooperation and Development
PHC	Primary Health Care

Acronym	Full word/sentence
PMTCT	Prevention of mother-to-child transmission (of HIV)
PMR	Perinatal mortality rate
PNC	Postnatal care
PIIP	Perinatal Problem Identification Programme
PRN	Professional nurse
RDP	Reconstruction and Development Programme
Rh	Rhesus factor
PEPFAR	President's Emergency Plan for AIDS Relief
PNC	Postnatal Care
RHRU	Reproductive Health Research Unit
RPR	Rapid Plasma Reagent
RSA	Republic of South Africa
SANC	South African Nursing Council
SEAD	Strategic Evaluation Advisory and Development
SPSS	Statistical Package of Social Services
SSA	Sub Saharan Africa
STI	Sexually transmitted infection
SEAD	Strategic Evaluation, Advisory and Development
SWOT	Strengths, weaknesses, opportunities and threats
TB	Tuberculosis
TQM	Total Quality Management
UNAID	Joint United Nations Programme on HIV/AIDS
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
WHO	World Health Organization

CHAPTER 1 : OVERVIEW OF THE STUDY

1.1 INTRODUCTION

This chapter provides the introduction to and background of the study, in order to create an understanding of the rationale underlying the current study.

1.2 BACKGROUND

Basic Antenatal Care (BANC) is an approach that is used in the public health institutions of South Africa to provide health care services to pregnant women according to the National Department of Health (NDoH). The approach is listed as one of the priority interventions for reducing maternal and child mortality in this country (NDoH 2012a: 9). South Africa's NDoH introduced the BANC approach in 2007 and advised that all health facilities providing antenatal care (ANC) services should have adopted this approach by the end of 2008 (NDoH 2008a: 63). The NDoH provided training for the lead trainers from all the provinces and made available various documents such as a handbook, guidelines and guides for facility managers (Pattinson 2005a; 2005b; 2007). The lead trainers were expected to cascade the training into their respective provinces and to institute and facilitate the implementation of the BANC approach.

Implementation of BANC in the eThekweni district commenced as a pilot project in the health facilities in the Northern sub-district in 2007 and was rolled out to the other three sub-districts in 2008 involving all the health institutions that were providing ANC services. These included hospitals, midwives' obstetric units (MOUs), community health care centres (CHCs) and the Primary Health Care (PHC) clinics. The findings of the study that was conducted by Ngxongo (2011: 31), revealed that out of 59 Municipal PHC clinics, (46%, n=27) were successfully implementing the BANC approach. Several positive factors, prevailing in the facilities that were successfully

implementing the BANC approach, were identified as contributing to such successful implementation of the BANC approach (Ngxongo 2011: 74).

However, some prevailing challenges were also identified, revealing that although some facilities were successfully implementing the BANC approach, there remained room for improvement in order to achieve full success (Ngxongo and Sibiyi 2013a: 5-7).

1.3 GOALS OF ANTENATAL CARE

Ekabua, Ekabua and Njoku (2011: 1) describe ANC as an umbrella term used to describe the health care and procedures that are carried out to and for the pregnant women. It is health care that is rendered to the pregnant women throughout pregnancy until the child's birth and is aimed at detecting already existing problems and/or problems that can develop during pregnancy affecting the pregnant woman and/or her unborn child (Pattinson 2007: 5). This author further states that this is done through screening, diagnosing and managing or controlling the risk factors that might adversely affect the pregnant women and/or the pregnancy outcome. The care includes various screening tests, diagnostic procedures, prophylactic treatments, some of which are done routinely, and others are provided to the women based on identified problems and risk factors.

The majority of preventable deaths during pregnancy and childbirth have been attributed to poor ANC (National Committee for Confidential Enquiry into Causes of Maternal Deaths [NCCEMD] 2005: 13). According to this committee, non-attendance of ANC clinics carries an approximately four times increased risk of maternal deaths compared with the general pregnant population who attend ANC clinics. The provision of adequate ANC is advocated by most authors worldwide as the cornerstone for maternal and perinatal care. The detection of high-risk pregnancies (Hoque, Hoque and Kader 2008: 66), through ANC has been advocated as a good tool for reducing maternal and perinatal mortality rates.

ANC benefits both the mother and the baby. According to Pattinson (2007: 5) the purpose of ANC is to screen, diagnose and manage or control the risk factors that might adversely affect the pregnant woman and/or the pregnancy outcome. Snyman (2007a: 7) attests to this by saying: “The quality of health care that a pregnant woman receives during ANC has an impact on the health of the woman and on the outcome of pregnancy.” Maternal and perinatal death rates remain the major challenge of health care in South Africa and reported maternal deaths had increased by 20% during 2005-2007 triennium when comparing it to the 2002-2004 triennium ([NCCEMD 2009: 26). The NDoH developed a 5-year macro plan for the health sector, detailed in Outcome 2 of the Negotiated Service Delivery Agreement (NSDA) of 2010-2014 (NDoH 2012b: 20). The NSDA includes maternal, neonatal, child and women’s health (MNCWH) in the four outputs of the macro plan which the health sector is expected to achieve. These are: (a) increasing life expectancy, (b) decreasing maternal and child mortality, (c) combating HIV and AIDS and (d) decreasing the burden of disease from tuberculosis and strengthening health system effectiveness (NDoH 2012e: 20).

Ekabua, Ekabua and Njoku (2011: 1) highlight the four major goals of ANC as being: (a) promotion and maintenance of the physical and social health of the mother and the baby, (b) detection and management of complications during pregnancy, (c) development of birth preparedness and complication readiness plan and (d) preparation of the women for normal puerperium. The World Health Organization (WHO) identifies ANC as one of the most widely used strategies to improve maternal and child health (WHO 2003: 1). It is one of the worldwide strategies towards achievement of millennium development goals (MDG) numbers 4 and 5, which are to reduce child deaths by 75% and improve maternal health by 50% by 2015 (NDoH *et al.* 2007a: 6-7).

Three South African reports, namely the Saving Mothers report by the NCCEMD, Saving Babies report for the Perinatal Problem Identification Programme (PPIP), and Saving Children report for the Child Health Problem Identification Programme (CHPIP) review the healthcare provided to the

mothers, babies and children in South Africa (Bradshaw, Copra, Kerber, Lawn, Moodley, Pattinson, Patrick, Stephen and Velaphi 2008: 2). The findings of these reports highlight avoidable causes of the deaths of mothers, babies and children and make recommendations to improve the quality of care provided to mothers, babies and children at the time when they need it most. All three committees highlight, in their triennial reports, the importance of ANC for reducing maternal, perinatal and children's deaths. Bradshaw *et al.* (2008: 2) further emphasise that addressing the health challenges should involve strengthening the provision of health care packages within the continuum of care and recognise that the effectiveness of each package depends on whether it provides high-impact, evidence-based interventions and also on the coverage and quality of the service rendered. ANC can screen for, detect and thus prevent many maternal complications that might occur before childbirth and could significantly improve the outcomes for unborn infants (Pattinson 2007: 5).

The one document by the NCCEMD, which might appear old but which conveys a very important message for South Africa, is the Saving Mothers Policy and Management Guidelines for Common Causes of Maternal Deaths (NCCEMD 2001: 6). This policy document (NCCEMD) highlights that one of the major areas of substandard care identified in South Africa is the poor initial assessment of patients during ANC visits. The authors attribute this to the fact that the midwives are trained in the traditional method of history taking, clinical examination and special investigations when assessing patients. This might make it difficult to assimilate the multiple abnormalities found and to formulate a management plan for a patient with multiple organ disease, the very type of cases described in the maternity mortality reports (NCCEMD 2001: 6).

South Africa can address the problem of the constantly rising maternal and perinatal mortality rates because the majority of avoidable provider-related maternal deaths can be avoided through providing proper and good quality ANC services (Chandni, Hodgson and Hayen 2014: 94). Midwives, the key

providers of ANC services, requested for a programme based on the principles used in the Integrated Management of Childhood Illnesses (IMCI) programme with flow diagrams and protocols (Pattinson 2007: i). The NDoH (2012a: 9) identified BANC as the ideal approach to ensure that quality and effective ANC is provided.

1.4 APPROACHES TO ANTENATAL CARE

Several approaches to ANC are used in different countries including the traditional approach, goal-directed ANC, Focussed ANC (FANC) and the BANC approach. Whilst some countries structure and develop their own approaches to suit their unique circumstances, other countries might simply adopt an approach existing elsewhere. This could create problems if the situations in the two countries differ. Developing countries (like South Africa, Botswana, Swaziland, Kenya and Zimbabwe) adopted ANC programmes modelled on the approaches used in developed countries (Villar, Carroli, Khan-Neelofur, Piaggio and Gulmezoglu 2007: 2). These approaches use risk assessments to identify women who are likely to experience complications during their pregnancies and assume that more clinic visits imply better pregnancy outcomes. In these approaches, scarce resources of developing countries might be devoted to women with high risk pregnancies implying that women with low risk pregnancies might not receive optimal care (The Free Library 2007: 1). This approach has been challenged by the WHO (Mathole, Lindmark and Ahlberg 2005: 385). The Maternal and Neonatal Programme (2004: 1) argues that frequent ANC visits are often logically and financially impossible for women to manage and place additional burdens on the healthcare system. Frequent ANC visits do not necessarily improve pregnancy outcomes (Ekabua, Ekabua and Njoku 2011: 3). The WHO realised that traditional ANC programmes, meant for developed countries, were poorly implemented and largely ineffective when used in developing countries (The Free Library 2007: 1).

Until 2007, South Africa used the traditional approach to ANC. Historically; this traditional ANC service model was developed in the early 1900s. This

model assumed that frequent ANC visits, and classifying pregnant women into low and high risk groups by predicting potential obstetric complications, was the best way to care for the mother and the foetus (Ethiopia Health Education and Training [HEAT] Module 2004: 1). The use of the traditional ANC approach in South Africa was prescribed by the South African Nursing Council (SANC 1991: 3) in the scope of practice for midwives (Regulation R2598 of 1987 as amended by Regulation R260 of 1991). The SANC prescribed that the midwives should ensure that pregnant women attend ANC clinics once a month until 28 weeks' gestation and thereafter every fortnight until 36 weeks' gestation. Thereafter a pregnant woman should continue attending the clinic at PHC level every week until her baby is born or until she reached 42 weeks' gestation whichever comes first. Should the woman not give birth by 42 weeks' gestation, she had to be referred for hospital management (SANC 1990: 2). With this approach, a pregnant woman could have up to 12 ANC visits conducted at a PHC clinic level during one pregnancy. This is one of the aspects that have been challenged by the WHO (Pell, Menaca, Were, Afrah, Chatio, Manda-Taylor, Hamel, Hogson, Tagbor, Kalilani, Ouma and Pool 2013: e53747).

The traditional ANC approach was replaced by the FANC approach which is a goal-oriented ANC approach that was recommended by researchers during 2001 and adopted by the WHO in 2002 (Ethiopia HEAT Module 2004: 1). The WHO designed and tested a FANC package that included only counselling, examinations, and tests serving an immediate purpose and having a proven health benefit as an ideal approach to be used by developing countries (WHO 2002: 6). In the FANC approach, the WHO recommends reducing the number of ANC visits to four, and this has not been found to pose risks to the health of mothers or babies (WHO 2002: 1). The FANC approach recognises that every pregnant woman is at risk of experiencing complications, and therefore emphasises that all pregnant women should receive the same basic care and monitoring for complications (Maternal and Neonatal Health [MNH] Programme 2004: 1). However the WHO emphasises that once a pregnant woman has been identified to have high-risk factors she should be referred to

a higher level of care (WHO 2002: 6). The WHO therefore, advocates that after the initial assessment, pregnant women should be categorised into two groups: those who have low risk factors who should follow the FANC reduced number of ANC visits approach and those who have high-risk factors who should be referred for hospital management of their pregnancies (WHO 2002: 7). The Maternal, Child and Women's Health Unit of the KwaZulu-Natal (KZN) Department of Health, reviewed and revised its ANC guidelines on the basis of the WHO's model of FANC to improve the quality of ANC provided at the clinics in the KZN province (Population Council 2008: 5).

According to the MNH Programme (2004: 4), the FANC approach is one of several essential maternal and neonatal care interventions that are evidence-based and that build on global lessons learned about saving the lives of mothers and new-born babies. The FANC approach also includes a classifying form designed to assist ANC health care providers to identify women who have conditions requiring treatment and more frequent monitoring. It also includes classifying forms needed to implement the package and instructions for its use (WHO 2002: 7-10).

The WHO provided key recommendations which form standards for maternal and neonatal care service delivery, providing guidance for assisting countries to improve the health and survival of women and new-born babies during pregnancy, childbirth and the postnatal period and can be modified to suit the circumstances of a specific country (WHO 2007: 4). These WHO provisions allow each country, intending to adopt the FANC approach, to modify the guidelines to suit the circumstances of the specific country. The WHO indicates that it might be necessary, when introducing the FANC package in practice (depending on the specific country), that the country's national clinical standards and guidelines for ANC might require updating, the pre-service training curricula in ANC and in-service training for ANC providers and their supervisors might need to be modified, and a plan for implementing changes with regard to medications, equipment, and supplies to implement the package should be assessed (WHO 2007: 4).

South Africa adopted and modified the FANC model to suit the South African circumstances and referred to it as the BANC approach (Beksinska, Mullick, Kunene and Mosery 2012; Pattinson 2005a). This followed the realisation by the NDoH that the traditional ANC approach was not working well for South Africa. In 2007, the NDoH advised that all health facilities providing ANC services had to adopt the BANC approach by the end of 2008 (NDoH 2008a: 63).

1.5 THE NEED FOR A NEW APPROACH TO ANTENATAL CARE IN SOUTH AFRICA

South Africa has a burden of high maternal and perinatal mortality rates and therefore needs to work very hard to address this problem. The number of reported maternal mortalities had increased by 20% during the 2005-2007 triennium compared to the 2002-2004 triennium (NCCEMD 2009: 26). The constant rise in maternal and perinatal mortality rates resulted in South Africa's inclusion of the MNCWH programme as one of the priority programmes in the ten year strategic plan for the country (NDoH 2010: 23). The majority of the provider-related preventable deaths in South Africa have been attributed to poor ANC.

According to the Saving Babies Report 2008-2009, improvement in access to good quality ANC services could make a major contribution towards reducing perinatal and child deaths (NDoH, *et al.* 2010: xii). The Saving Mothers Report 2008-2010 indicates that a total of (16.6%, n=713) of women who died during this triennium did not attend ANC clinics and (7.0%, n=300) attended ANC clinics infrequently (NCCEMD 2012: 20). The Saving Mothers' Report indicates that the avoidable causes of maternal deaths included a number of health provider-related issues such as poor initial assessments, problems with recognising problems, delays in referring the pregnant women to different healthcare facilities causing pregnant women to be managed at inappropriate healthcare levels, incorrect management, substandard management/care and failure to take actions when abnormalities were found (NCCEMD 2012: 21).

Whilst the BANC approach is adapted from the WHO's FANC model, it is also designed similar to the IMCI programme (Pattinson 2007: i). This decision was taken in response to the midwives' request for an ANC programme that has flow diagrams and protocols similar to the IMCI programme. The midwives hoped that having such a programme would assist them to render safer and better quality health care to the pregnant women (Pattinson 2007: i). It is for this reason that the BANC approach is sometimes referred to as the integrated management of pregnancy and childbirth (Pattinson 2007; Mhlanga 2012).

The NDoH also identified BANC as an ideal approach to ensure that quality and effective ANC is provided (NDoH 2012a: 9). The implementation of BANC is seen as a positive measure to improve the quality of ANC in PHC clinics (Snyman 2007a: 10). Effective and quality ANC could assist South Africa to address the problem of constantly increasing maternal and perinatal mortalities. Snyman (2007a: 11) stated that the BANC quality improvement package is designed to assist ANC-related clinical management and decision making at PHC level. This author conducted a qualitative study to assess the effectiveness of the BANC package for improving the quality of ANC services rendered at PHC facilities. With the implementation of the BANC approach, the organisational changes required at facility level for the improvement of ANC services are facilitated with tools like the integrated flow charts for pregnant women's management, referral protocols and checklists. This could potentially have a positive impact on the outcomes of pregnancies (Snyman 2007a: 79).

1.6 THE BASIC ANTENATAL CARE APPROACH (BANC)

Pattinson (2005a: 1) describes the BANC approach as the minimum level of ANC that every pregnant woman should receive. Every aspect of the BANC approach has been developed from the best research evidence and only aspects of ANC that have been shown to be effective are included in the BANC approach (Pattinson 2005a: 1). The BANC approach does not intend to replace any existing programme but aims to combine all resources and to

facilitate their use (Pattinson 2005a: 1). The BANC approach was introduced as a quality improvement strategy based on the belief that good quality ANC could reduce maternal and perinatal mortalities and improve maternal health aiming to achieve MDGs 4 and 5 (NDoH 2008a: 12). This then led to the introduction of the BANC approach in the PHC clinics. Thus the BANC was an approach being used in South Africa to render ANC services during the time of the current study.

The BANC approach has been simplified to the bare minimum so that ANC services can be provided by every PHC clinic's midwives (Pattinson 2005a: 1). Because the BANC approach is a modified version of the FANC approach, it has many characteristics similar to the FANC approach. These include the approach focusing on early ANC attendance by all pregnant women and on limiting the total number of ANC visits to a minimum of four or five visits per pregnancy for low risk women. This requires that ANC services should be provided daily at every facility frequented by pregnant women so that the first ANC visit takes place as soon as the pregnancy has been confirmed or the very first time that a pregnant woman visits a health facility (Pattinson 2005a: 5). If a pregnant woman is brought into the health system early, her health problems could be detected and managed or controlled early and treatment then has a greater chance of success. Pattinson (2005a: 5) also states that all pregnant women with high risk factors should be referred to the next level of care so that nurses at PHC level have sufficient time to attend to women with low risk factors. Every site where pregnant women make contact with health services should be utilised because if all PHC clinics are providing BANC, then ANC could be started as soon as the pregnancy had been confirmed (Pattinson 2007: 7).

The BANC approach requires that two sets of checklists be used for recording purposes during ANC visits: one checklist to record the first visit and the other to use during subsequent follow-up visits. Pattinson (2005a: 3) recommends that before commencing implementation of the BANC approach, each facility has to develop its own specific protocols for the management of obstetric

conditions which must be in line with the South African National Maternity Care Guidelines and should be displayed in the facility. All the protocols should be counter-signed by the head of the obstetric unit from the hospital to which the facility refers the women with high risk factors or complications during pregnancy. The protocols should be reviewed annually. Regular auditing of the ANC service should be an on-going process to ensure continuous improvement based on identifying and addressing potential shortcomings (Pattinson 2007: 11).

The BANC approach focuses on the quality rather than the quantity of visits, with special emphasis on the fact that every visit should be goal directed (NDoH 2008b: 39). The approach is included in the list of strategies provided by the NDoH to achieve MDGs 4 and 5 which are to reduce perinatal deaths and improve maternal health by 2015 (NDoH 2007b: 6-7). A baseline audit of the ANC service and an analysis of the strengths, weaknesses, opportunities and threats (SWOT) of the facility should be conducted before commencing the implementation of the BANC approach. This enables the midwives to compile a realistic plan and process map for the implementation of the BANC approach (Pattinson 2007: 48). Documents such as the handbook, guidelines and facility manager's guides are available to be used by the midwives during the implementation of the BANC approach (Pattinson 2007: i). According to the BANC handbook, each clinic should have one or more supervisors to perform the clinical supervision and the administrative tasks (Pattinson 2007: 12). The manager is responsible for providing supportive supervision to the staff members in order to ensure that the clinic's programmes are implemented successfully (Pattinson 2007: 12).

1.7 PROVISION OF ANTENATAL CARE SERVICES ACCORDING TO THE BASIC ANTENATAL CARE APPROACH

Guidelines on how to conduct ANC visits are detailed in the Basic Antenatal Care Principles of Good Care and Guidelines (Pattinson 2005a). These guidelines have been adapted from a guide for essential practice by the WHO titled "Pregnancy, Childbirth, Postpartum and New-born Care" (Pattinson

2005a: 1). According to the BANC Principles of Good Care and Guidelines, the principles of good care include communication, workplace and administrative procedures, universal precautions, and cleanliness and organisation of ANC visits (Pattinson 2005a: A1).

It is stated in the guidelines that communication, privacy and confidentiality during examination and counselling should be ensured at each ANC visit (Pattinson 2005a: A2). The importance of service hours, availability of equipment and drugs, record keeping, and infection prevention and control are highlighted as part of the workplace and administrative procedures (Pattinson 2005a: A3). The guidelines describe how the ANC visits should be organised highlighting that ANC should always begin with rapid assessment and management. All pregnant women, except those with high risk factors, should have four to five routine ANC visits.

A pregnancy status and birth plan chart, which should be used to assess the pregnant women at each of the four ANC visits, is provided (Pattinson 2005a: C2). The chart is used during the first ANC visit to prepare the birth and emergency plan and reviewed and modified according to the need at each subsequent ANC visit. “Ask, check, look listen and feel” criteria should always be followed during assessments of pregnant women. All pregnant women should be screened for pre-eclampsia, anaemia, foetal growth and post maturity at all ANC visits (Pattinson 2005a: C3-C6). All women should also be screened for syphilis, Human Immunodeficiency Virus (HIV) and Rhesus factor (RH) (Pattinson 2005a: C7-C8). All routine investigations, including the rapid plasma reagent (RPR) test, haemoglobin (Hb) level test, HIV and RH tests should be done using rapid test kits. The guidelines highlight the importance of responding to observed signs and/or problems reported by the pregnant women and contain a guide on how to respond to these signs (Pattinson 2005a: C9-C13).

Standard preventative therapy, including tetanus toxoid injections, iron preparations and calcium supplements, should be issued to all pregnant women at each ANC visit (Pattinson 2005a: C14). A guide is included on how

to advise women about nutrition and self-care (Pattinson 2005a: C15). The guidelines highlight the importance of preparing individualised ANC and delivery plans for each woman at the first ANC visit and that the plans should be reviewed during each subsequent visit and adjusted based on the identified needs. The plan should be prepared in consultation with the woman concerned. This ensures that the woman is involved in her own care. The plans should also include transport arrangements, infant feeding options and future contraception. A description of how the first and the follow-up visits should be conducted is provided (Pattinson 2005a: C14).

The guidelines state that the first ANC visit should take place as early in pregnancy as possible, before 12 weeks' gestation, preferably at the confirmation of pregnancy (Pattinson 2005a: C19). During the first ANC visit, all women should be classified for BANC using the classifying form/first visit checklist provided. Only women with low risk factors should follow the BANC approach. All women with risk factors should either be referred to an appropriate level of care or follow a specially prepared schedule based on the risk factors identified. Four follow up visits should be scheduled at 20, 26, 32 and 38 weeks' gestation. Specific times are scheduled for performing repeat routine tests such as Hb, HIV and RPR and these times coincide with specific routine follow up visits. It is therefore important to schedule the follow-up visits as specified by the BANC guidelines in order to ensure the correct timing of repeat tests.

Pattinson (2007: 12) suggests that each PHC clinic should have one or more people in the role of ANC supervisor to ensure clinical and administrative supervision. The clinical supervisor should be the person with most ANC skills and should check each pregnant woman's ANC card at the first visit and again at the 32 weeks' visit to ensure that the clinic provides adequate care (Pattinson 2007: 47).

All information regarding pregnancy and consultation should be recorded in an ANC card which should not be filed at the clinic but which should be kept by the pregnant woman. The woman is advised to always carry the ANC card

with her, wherever she goes, and to produce the card each time she visits any healthcare institution. This practice facilitates communication between the different healthcare providers involved in the care of women during pregnancy and childbirth (Pattinson 2007: 11).

1.8 RESEARCH PROBLEM

The findings of Ngxongo's (2011: 68) study revealed that not all facilities in the eThekweni district were successfully implementing the BANC approach. According to Ngxongo and Sibiyi (2013a: 5) midwives face various challenges during the implementation of the BANC approach. These included shortages of staff, lack of cooperation from referral hospitals, insufficient in-service training, transport problems of specimens to laboratories, inadequate material resources, lack of management support and the unavailability of BANC guidelines. Some PHC clinics that attempted to resume implementation of the BANC approach failed to sustain the programme and reverted to the traditional approach to ANC (Ngxongo 2011: 68-69).

According to Beksinska, Kunene and Mullick and Mosery (2012: 297), more than 90% of women in South Africa have access to ANC services. A total of 83.5% of the women who died during pregnancy or childbirth during the 2008-2010 triennium attended ANC (NCCEMD 2012: 20). The question that still needs to be answered is why do women continue to die despite ANC attendance if ANC is the key to the reduction of maternal deaths? Can these deaths be attributed to poor quality ANC services or is ANC not the key as advocated by most authors? Assessing how the BANC approach was being implemented and gaining the views of the pregnant women regarding the ANC that they had received, afforded the researcher opportunities to gain insight into areas of the BANC approach that needed to be strengthened.

1.9 RESEARCH AIM

The aim of the study was to develop a tailored practice framework which is an individualised nursing intervention approach based on settings and pregnant

women's specific factors to facilitate the implementation of the BANC approach in line with the provisions of the BANC Principles of Good Care and Guidelines.

1.10 RESEARCH OBJECTIVES

The objectives of the study were to:

- Assess the implementation of the BANC approach in the PHC clinics in eThekwini district.
- Analyse pregnant women's ANC records for evidence of application of the BANC principles of good care and guidelines in eThekwini district.
- Describe the perceptions of pregnant women regarding ANC that was provided in the PHC clinics that were implementing the BANC approach in eThekwini district.
- Develop a tailored practice framework for eThekwini district, which is an individualised nursing intervention approach based on settings and pregnant women's specific factors to facilitate the implementation of the BANC approach in line with the provision of the BANC Principles of Good Care and Guidelines.

1.11 RESEARCH QUESTIONS

The following questions had to be answered in order to achieve the study objectives:

- Were BANC principles of good care and guidelines being implemented in the PHC clinics in eThekwini district?
- Which BANC guidelines, if any, were evident in the pregnant women's ANC records in eThekwini district?
- What were the perceptions of the pregnant women about the healthcare services that were rendered in the PHC clinics that were implementing the BANC approach in eThekwini district?
- What would be the practice framework which would facilitate the implementation of the BANC approach in line with the provisions of

the BANC Principles of Good Care and Guidelines in eThekweni district?

1.12 SIGNIFICANCE OF THE STUDY

The intended assessment of how the BANC approach was being implemented could identify strengths and limitations that would be useful when developing the best practice framework. The researcher would develop a best practice framework that could facilitate the implementation of sustainable BANC services. It is believed that the framework would benefit the pregnant women by ensuring a focussed approach to service delivery. The framework will provide a guide for the midwives to facilitate the implementation of the sustained BANC approach. The country/district will benefit from the study because the framework, if adopted, could assist with the successful implementation of the BANC approach not just in KZN but throughout South Africa and thus the goal of the country to improve maternal health and reduce perinatal and maternal mortalities could be achieved.

Other developing countries, in a similar situation to South Africa, could also benefit from implementing the framework if it has demonstrated improved maternal and perinatal outcomes in South Africa. The study contributes to the scholarly field of new information on the use of a mixed method inquiry to assess the implementation of a health programme and on how such information could guide the development of the practice framework.

1.13 SUMMARY

In this chapter the researcher highlighted what is ANC, the various approaches to ANC and their uses. An approach that is used in South Africa, namely the BANC approach, was described and the reasons why it was adopted were discussed. It is evident from the information provided that several challenges still exist with the implementation of the BANC approach. In the next chapter, the researcher intends to substantiate this information with relevant literature and also to compare and contrast the situation of the

eThekwini district in the KZN province of South Africa with situations in other countries in order to emphasise the importance of and the need for the current study.

CHAPTER 2 : LITERATURE REVIEW

2.1 INTRODUCTION

Chapter 1 presented the background and rationale for the study. The focus in the previous chapter was to describe ANC and why the approach to ANC was changed from the traditional to the BANC approach. Chapter 2 presents various findings from relevant literature sources that were reviewed to support the importance of conducting the current study and of adopting a theoretical framework used to guide the study. Since the BANC approach is the strategy for and by the NDoH, various documents, including policies and guidelines from the NDoH, were used to support the importance of conducting the current study. Although some of the documents are old, their inclusion is deemed necessary since they highlight the attempts and strategies that South Africa had adopted over the years in an attempt to improve the quality of life for the people of the country, including the pregnant women. Limited literature sources addressed the BANC approach because the concept BANC is only used in South Africa, and it is also a fairly new concept which was introduced in 2007. The literature search used to support the study took into consideration the ANC models that were developed in line with the WHO FANC model, as the BANC model incorporates many principles of the FANC model.

2.2 STRATEGIES USED TO SEARCH FOR RELEVANT LITERATURE

The choice of search strategy is essential in order to obtain high quality reviews. A literature search was conducted before commencement of the study over a period of 12 months, using different scholarly search engines. Various World Wide Web search engines were used in order to ensure a thorough and broader search for relevant literature. These included Academic Search Complete, Cumulative Index to Nursing and Allied Health Literature (CINAHL) Plus with Full Text, EBSCO Host, Education Resources Information

Centre (Eric) on EBSCO Host platform, Google scholar, medical literature on-line (Medline) with full text, South African (SA) e-publications, Science Direct and the NDoH website. Although electronic databases have gained so much popularity that researchers have increasingly become less reliant on the traditional library to search for literature, in the current study the value of using libraries to search for books and journals was not overlooked. Several books, journals and government documents were accessed from the library of the Durban University of Technology (DUT).

Prior to the literature search; the researcher had to decide on a plan to gather information. The plan included the development of key search terms which directed the researcher toward literature largely covering the topic under study. The search terms included using obvious key words related to the research topic such as: ANC, BANC, FANC, MNCWH, Maternal and perinatal mortality, PHC, approaches to ANC and quality. In order to yield maximum results when conducting the literature search, each term was used independently and also combined with one of the other key terms to try and broaden the search parameters. The literature search was conducted at different stages of the research process.

Furthermore, the reference lists of key articles were scrutinised to assist in identifying other relevant articles. In order to provide a complete overview of available knowledge and resources, peer reviewed and non-peer reviewed journals and materials on the World Wide Web were used. Titles, in case of doubt, abstracts were assessed to determine the suitability for inclusion in the literature review. The NDoH web site was visited in order to review various documents, policies and guidelines related to the subject.

2.3 MATERNAL AND PERINATAL MORTALITY RATE IN SOUTH AFRICA

A healthy woman's pregnancy ought to end with a live birth but, in Sub Saharan (SSA) countries pregnancy and child birth could imply periods of pain, fear, suffering and sometimes death (Adekoya and Aluko-Arowolo 2012: 4372). Developing countries are characterised by high maternal mortality

rates (MMRs) due to attitudes that ANC might be unnecessary, lack of access to ANC and post-natal care (PNC) as well as the absence of strategic interventions and institutionalised government policies. This renders maternal mortality an ongoing major public health issue in developing countries. This situation explains the growing global commitment to reducing the unacceptably high maternal and perinatal mortality rates in developing countries (Adekoya and Aluko-Arowolo 2012: 4372).

More than half a million women, the majority from the developing countries including South Africa, die from pregnancy-related causes every year with at least one woman dying from pregnancy and childbirth-related causes every minute (Iyaniwura and Yussuf 2009: 112). A total of 99% of the 536 000 women who die every year in the world due to causes related to pregnancy, childbirth, or postpartum occur in developing countries (United Nations International Children's Emergency Fund [UNICEF] 2009: 6). The majority of these maternal deaths could be avoided if women had access to quality medical care during pregnancy, childbirth, and the postpartum period (Assafaw 2010: 1). High quality accessible healthcare has made maternal deaths a rare event in developed countries. For example, in North America the risk is only 1 in 3 2003 yet the risk of maternal death for a pregnant woman in developing countries is 1:48births (Nikiema, Kameli, Capon, Sondo and Maritn-Prével 2010: 67-75). The possible reason for the sustained high MMRs in South Africa, Botswana, Swaziland, Kenya and Zimbabwe might be the impact of the HIV/AIDS epidemic (Moodley 2011: 6).

Whilst ANC attendance is high in South Africa and has remained over 90% since 1998, the MMR which is one of the indicators for evaluation of the quality of MNCWH services has not declined over the last 10 years. In 2003 the deaths per 100 000 live births was 165, an increase from 135.6 per 100 000 in 2002 (Beksinska, Kunene and Mullick 2006: 299). A total of 4 867 maternal deaths were reported in the 2008-2010 triennium. This number is higher than any number of maternal deaths that had ever been reported in the previous years in South Africa (NCCEMD 2012: 26). Maternal health services

and the improvement of maternal mortality are internationally acknowledged as priority issues for health service development; and maternal mortality is a fairly specific indicator of health system's functioning (Parkhurst, Penn-Kekana, Blaauw, Balabanova, Danishevski, Rahman, Onama and Ssengooba 2005: 128). According to Parkhurst *et al.* (2004: 130), reducing maternal deaths requires all elements of a health system to function in co-ordination where skilled attendants are embedded in the functional networks.

In terms of maternal and perinatal outcomes, South Africa scores poorly compared to other upper-middle income countries, despite doing relatively well in terms of process indicators such as ANC attendance rates. Despite a large international focus on delivering cost-effective technical interventions, South Africa, like some other middle and low income countries, seem unable to establish systems that effectively provide the required solutions (Parkhurst *et al.* 2004: 130). The two targets for MDG number 5 to improve maternal health are (1) to reduce by three-quarters, between 1990 and 2015, the MMR and (2) to achieve by 2015; universal access to reproductive health services (United Nations 2013). Beksinska, Kunene and Mullick (2006: 300) suggest that there is a need to critically analyse other indicators besides ANC attendance. These authors argued that besides a relatively high attendance of ANC, the timing of the first ANC visit and services rendered during ANC visits are also important if quality of ANC care is to be achieved.

The 2008-2010 Saving Mothers' Report identifies three conditions that contribute to the majority of preventable maternal deaths, namely non-pregnancy-related infections, obstetric haemorrhage, and complications of hypertension during pregnancy (NCCEMD 2012: iii). These conditions comprise 66.7% of possible and probable preventable maternal deaths. The three conditions have many common preventable factors, which are mostly related to the knowledge and skills of the healthcare providers and the challenges within the healthcare system (NCCEMD 2012: v). This highlights the importance of access to health care for pregnant women. Adequate ANC and skilled obstetric assistance during birth are important strategies that could

significantly reduce maternal mortality and morbidity rates. ANC provides an avenue to provide pregnant women with information, treat existing social and medical conditions and screen for risk factors (Pattinson 2007: 5).

2.4 THE NEED FOR AND IMPORTANCE OF ANTENATAL CARE

ANC is the most important method for the early detection of pregnancy-related problems, a critical element for reducing MMR and for providing pregnant women with a broad range of promotive and preventive health services. One of the most important functions of ANC is to offer health information and services that can significantly improve the health of pregnant women and their infants (Agus and Horiuch 2012: 2). ANC is the mainstay of healthcare for pregnant women. Its purpose is to maintain the best positive state of health of the mother and foetus by screening for actual and potential problems as early as possible and by instituting appropriate referral or management procedures. It is also essential that those involved in ANC ensure that advice is made available to the pregnant woman and her partner. In South Africa, the entry point for ANC services is at PHC clinics where the services are provided by the midwives and ADMs.

A midwife is defined by the International Confederation of Midwives (ICM 2011: 1) as a person who, having been regularly admitted to a midwifery educational programme, duly recognised in the country in which it is located, has successfully completed the prescribed course of studies in midwifery and has acquired the requisite qualifications to be registered and/or legally licensed to practise midwifery. According to the Nursing Act No. 33 of 2005 the midwives are either enrolled or registered depending on the training that he/she has undergone (South Africa 2005). Registered midwives have a basic training as professional nurses while enrolled midwives do not. Therefore, the scope of practice for the registered midwives is different from that for enrolled midwives and also the regulations relating to the conditions under which the two groups carry on their practice are different (SANC 1990; SANC 1991).

The advanced midwives are advanced practice nurses who have received additional training in midwifery and are therefore regarded as experts in the field of midwifery. Nieminen, Mannevaara and Fagerstro (2011: 661) define advanced practice nurses as registered nurses who have the required expert knowledge, the ability to make complex decisions and the clinical competence for expanded work descriptions, whose character is formed by the context and/or the country where they have the right to work. According to Nieminen, Mannevaara and Fagerstro (2011: 662), the clinical competences of advanced practice nurses, do not merely consist of advanced skills for assessing and meeting the needs of the patients but also the creation of safe and trustful relationships with the patients and collaboration with colleagues. They are prepared for advanced nursing practice by virtue of knowledge and skills obtained through a post-basic or advanced education programme of study acceptable to the State Board of Nurse Examiners. This description of role of the ADMs by Nieminen, Mannevaara and Fagerstro (2011) support the purpose and rationale of the ADM qualification by SANC as detailed in the qualification framework. According to SANC (2005: 1) the primary purpose of ADM qualification is to produce competent, independent and critical thinking midwife who is able to provide scientific, safe and comprehensive quality midwifery care (SANC 2005: 1). Because of the advanced midwives' added midwifery skills and knowledge they are more likely to be able to provide a higher standard of care than midwives with only basic midwifery training. The absence of advanced midwives could have negative influences on the quality of ANC services rendered.

Various categories of staff members, who according to the SANC work under the direct supervision of professional nurses/midwives, are involved in the provision of ANC services. These include the enrolled nurses (ENs) which is detailed in regulation R1648 as amended by R482 and the enrolled nursing assistants (ENAs) which is detailed in regulation R1649 as amended by R480 (SANC 1973 as amended by SANC 1978). In the current study all the categories of staff members, who were providing ANC, were observed as they were providing ANC services.

ANC is also an opportunity to inform women about the danger signs and symptoms for which immediate assistance should be sought from a healthcare provider (Agus and Horiuch 2012: 2). For the majority of women pregnancy presents the first opportunity to make contact with the healthcare system. Therefore, ANC is an important entry point for different programmes and for the provision of integrated healthcare. ANC offers an opportunity to screen, diagnose, manage and/or prevent several conditions such as tuberculosis (TB), sexually transmitted infections (STIs), maternal and neonatal tetanus, and nutritional deficiencies (Lincetto, Moollebeseane-Anoh, Gomez and Munjanja 2006: 56). These authors further state that because ANC covers increasingly multipurpose roles, it is one of the most widespread health services providing a means of distribution for other packages like rolling out antiretroviral therapy (ART).

A number of studies highlight that quality ANC is the key to reducing maternal and child mortality rates but, these studies also show the importance of limiting the number of scheduled ANC clinic visits to ensure quality ANC (Villar *et al.* 2007; WHO 2002; Mathole, Lindmark and Ahlberg 2005). Non-attendance of ANC clinics carry an approximately four times increased risk of maternal deaths compared with the general pregnant population (NCCEMD 2006: 13). In spite of efforts taken nationally and locally, South Africa, including the KZN province, continues to report high maternal and perinatal mortality rates (Hoque, Hoque, and Kader 2008: 66). While South Africa's reported maternal deaths decreased from 189.5 per 100 000 births in 2009 to 132.9 per 100 000 in 2012/13; the country is still far from meeting international commitment to reduce maternal mortality to 38 deaths per 100 000 births by 2015 as part of the global MDGs (Cullinan 2013), and KZN was amongst South Africa's poor performing provinces.

Previously, access to maternal health services was a major problem for rural and black communities in South Africa. This was addressed successfully with the introduction of the District Health System (DHS) (NDoH 1995). The political transition of South Africa in 1994 brought about many positive

changes. The most encouraging one was the introduction of free maternal and child (age < 6 years) healthcare which later expanded to include free PHC services for all (African National Congress 1994). This significantly increased access to health care services especially for previously disadvantaged communities. The principles of equitable and humane health service delivery details various steps that need to be considered for ANC, and merely attending health facilities is insufficient for obtaining the desired goals of favourable pregnancy outcomes (Lehmann 2008: 164). Results of studies suggest that investment in the quality of care is most important in ANC (Nyamtema, Bartsch de Jong, Urassa, Hagen and Van Roosmale 2012; Saronga, Duysburgh, Massawe, Dalaba, Savadogo, Tonchev, Dong, Sauerborn and Loukanova 2014; Oladapo, Iyaniwura and Sule-Odu 2008). Few studies carried out in South Africa highlight the importance of the quality of ANC during pregnancy (Yengo 2009; Andrew, Pell, Angwin, Auwun, Daniels, Mueller, Phuanukoonnon and Pool 2014; Snyman 2007a). In particular, studies focusing on this topic in KZN are very limited (Hoque, Hoque and Kader 2008; Ngxongo 2011; Ngxongo and Sibiya 2013a, 2013b, 2013c).

2.5 GLOBALISATION TRENDS REGARDING APPROACHES TO PROVIDING ANTENATAL CARE SERVICES

The WHO realised that ANC programmes in developing countries were poorly implemented and largely ineffective and therefore designed and tested the FANC model (Villar *et al.* 2007: 2). The approach is defined by what should be done during each ANC visit (Lincetto *et al.* 2006: 54). The WHO justified the fact that FANC took away screening for risk factors because research had discredited the “risk approach,” stating that the approach failed to predict which women would develop complications during pregnancy and delivery. The FANC includes only counselling, examinations, and tests that serve an immediate purpose and have proven health benefits (WHO 2002: 6). The WHO recommends reducing the number of ANC visits to four, and this has not been found to pose a risk to the health of mothers or babies (Villar *et al.*

2007: 2). FANC recognises that every pregnant woman is at risk of developing complications during pregnancy and/or during the baby's birth, and therefore maintains that all pregnant women should receive the same basic care and monitoring for complications (MNH Programme, 2004: 369).

The MNH Programme (2004: 4) suggests that FANC is one of several essential maternal and neonatal care interventions that are evidence-based and building on global lessons learned about what works to save lives of mothers and new-born babies. The WHO recommends the FANC approach as an ideal model for developing countries. However, it might be necessary, depending on the specific country, that the National Clinical Standards and Guidelines for ANC should be updated, the pre-service ANC training curricula and in-service training for ANC providers and their supervisors modified (WHO 2001: 18). A thorough assessment and plan for making changes in drugs, equipment, and supplies should be carried out before implementation of the package in specific healthcare facilities (WHO 2001: 42). FANC includes a classifying form to help providers identify women who have conditions requiring treatment and more frequent monitoring and was designed as an aid for ANC providers. It also includes the forms and checklists needed to implement the package and instructions for their use (WHO 2001: 23).

2.6 ANTENATAL CARE SERVICES IN AFRICAN COUNTRIES

A study was conducted by the Population Council and Partners on the implementation of ANC services in Ghana, Kenya and South Africa. This study's findings reveal that a FANC approach, which also emphasised the quality of care over the actual number of clinic visits, is acceptable but difficult to implement because of scarce resources and high staff turnover rates at certain health facilities (WHO 2002: 93). The approach to ANC in these countries is referred to as goal directed ANC. According to Johns Hopkins Program for International Education in Gynaecology and Obstetrics (JHPIEGO) (2003: 269), goal-directed ANC involves gathering information in such a way that certain complications are either detected early or ruled out.

Collecting information in this way forces the provider to look critically at all of the parameters that are being checked, and to decide if they mean that the woman's pregnancy is evolving normally or that she is experiencing a complication that needs to be managed. JHPIEGO (2003: 269) maintains that the quality of ANC could be improved by having goal-directed care, not only because providers process the information they gather, but also because this way of gathering information facilitates efficient clinical decision making processes.

In their article about the WHO issuing guidance on a new model of ANC, Villar *et al.* (2007: 114) referred to the WHO approach as a goal-oriented or FANC approach. The model focussed on reducing the number of required ANC visits to four and doing only procedures and tests that have been shown to improve maternal outcomes. This is similar to the BANC approach as described by Pattinson (2007: 7). The main objective of ANC is to deliver effective appropriate screening and preventive or treatment interventions. The actual number of visits should therefore be the result of how these effective interventions can be timeously implemented during pregnancy (Villar *et al.* 2007: 117). These authors further argue that these effective interventions could be provided during fewer visits than was previously recommended without any clinically important increased risk of adverse outcomes.

In a study of nurses and midwives in rural Zimbabwe, which investigated the dilemmas and paradoxes encountered in providing and changing ANC services, caregivers implied that they designed their own ways of coping with situations (Mathole, Lindmark and Ahlberg 2005: 388). One participant commented that one strategy used by nurses and midwives to ease pressure was to ignore the government directives about nurse aides only being permitted to perform certain procedures, and let them perform the prohibited tasks. If they were accused of doing things incorrectly, they would work as usual and pretend they had not seen the new regulations. The participants in the rural Zimbabwean study described the large number of programmes being

implemented simultaneously as interfering with their performance. Each programme would have its own supervisor who came to the health care centre at different times to monitor its implementation. They stated that the already overburdened staff members were not only expected to answer questions but also to attend separate workshops on each programme. In these cases the participants stated that they were caught between the demands of the parallel programmes and the requirements of the government's core programmes on which their own performance appraisals were based (Mathole, Lindmark and Ahlberg 2005: 388).

Langer, Villar, Romero, Nigenda, Piaggio, Kuchaisit, Rojas, Al-Osimi, Farnot, Al-Mazrou, Guillermo, Ba'aqeel, Lumbiganon, Pinol, Bergsjö, Bakketeig, Garcia and Berendes (2002: 1) conducted a study in four developing countries, namely Argentina, Cuba, Saudi Arabia and Thailand. They concluded that policy makers and programme managers should realise that the views of the women are the main determinant in acceptance of and sustained use of services Langer *et al.* (2002: 4). In addition to this, these authors state that because health professionals are conscious players in the process of change, and because they contribute to improving providers' commitment to clinical work, their perspectives need careful evaluation before and during the introduction of new care models into institutional protocol (Langer *et al.* 2002: 1).

2.7 ANTENATAL CARE SERVICES IN SOUTH AFRICA

The approach that South Africa was using, before adopting the BANC approach, was modelled on the approaches used in developed countries (Villar *et al.* 2007: 107). The approach has been challenged by organisations like the WHO (Mathole, Lindmark and Ahlberg 2005: 388). According to these authors such approaches use risk assessments to identify women who are more likely to experience complications during their pregnancies and the approaches assume that more clinic visits imply better pregnancy outcomes. These approaches require that scarce resources are devoted unnecessarily to

women with high risks, possibly meaning that women with low risks do not receive optimal care (Pattinson 2007: 10).

Bradshaw *et al.* (2008: 16) highlight the following statistics for South Africa indicating that in any given year:

- 1 600 mothers die due to complications of pregnancy and childbirth;
- 20 000 babies are stillborn;
- 22 000 die before they reach one month of age; and
- 75 000 children die before their fifth birthday.

Bradshaw *et al.* (2008: 16) further emphasise that addressing the health challenges should involve strengthening the provision of health care packages within the continuum of care and recognising that the effectiveness of each package depend on whether it provides high-impact, evidence-based interventions and also on the coverage and quality of the service. Bradshaw *et al.* (2008: 16) state that attending ANC clinics only once at any time during the pregnancy could have much less effect than a first visit before 20 weeks and attending at least another four times at appropriate intervals with high-impact interventions provided during each visit. According to these authors, training institutions and trainers should play a role in saving the lives of mothers, babies and children by reviewing and updating pre-service and in-service training for health care providers to incorporate the latest acceptable guidelines for the national MNCWH.

There is a growing global commitment to reduce the unacceptably high maternal and perinatal mortality rates in developing countries. With this in mind the NDoH (2008a: 101) included maternal health care amongst its priority reproductive health programmes in South Africa. MNCWH is also included in the national strategic health programmes (NDoH, 2010: 53). One of the objectives for the National Strategic Health Programme is to increase the proportion of PHC clinics that are providing BANC with an expected outcome of improving the quality of ANC services provided in PHC clinics. The NDoH (2010: 53) has set a target output of BANC being implemented in 95% PHC clinics by 2012/2013. If this goal is to be achieved in South Africa,

there must be national co-operation to assess the causes of maternal deaths and to provide guidelines regarding maternity care, thereby ensuring that quality health services are rendered. South Africa has a persistently high maternal and perinatal mortality rate which it is struggling to reduce. According to the Saving Babies Report, the PPIP committee found that there were more stillbirths than neonatal deaths and this is a reflection of poor quality ANC (NDoH, *et al.* 2007: x).

Many interventions for preventing stillbirths can be delivered through and alongside existing maternal new-born and child health programmes (Darmstadt, Yakoom, Hawas, Mereness, Soomro and Bhutta 2009: 9). These authors recommend that the promotion of quality ANC and efficient referral systems should be promoted as a platform for improving coverage of evidence-based interventions towards saving babies and reducing the stillbirth rate. The quality of health care that a pregnant woman receives during ANC has an impact on the health of the woman and an impact on the pregnancy outcome (Snyman 2007a: 23). When the comprehensive approach to PHC services was implemented, nurses working in PHC, but who did not have midwifery training, were expected to provide ANC services. According to the provision of the NDoH, every nurse was expected to provide all services as indicated in the PHC comprehensive package of services following a one stop shop or supermarket approach (Sibiya 2009: 188).

One of the major areas of substandard care identified in South Africa was the poor initial assessment of patients during ANC (NCCEMD 2001: 6). The health care workers are trained in the traditional method of history taking, clinical examination and special investigations when assessing patients. It might be difficult to assimilate multiple abnormalities found and to formulate a management plan for a very ill patient with multiple organ disease, the type of cases described in the maternity mortality reports (NCCEMD 2001: 6). The NDoH decreed that all health facilities providing ANC should use the BANC approach. All provinces received training and guidelines on BANC with the

understanding that the BANC approach makes the analysis and grouping of women according to risk factors easier (Pattinson 2007: 6).

The implementation of BANC is seen as a positive measure to improve the quality of ANC in PHC facilities (Snyman 2007a: 14) because the BANC quality improvement package is designed to assist ANC clinical management and decision making at PHC level. Snyman (2007a: 14) conducted a qualitative study to assess the effectiveness of the BANC package for improving good quality ANC at PHC facilities. The results of the study revealed that with implementation of the BANC approach, the organisational changes required at facility were helped by tools like the integrated flow charts for pregnant women's management, referral protocols and checklists. Although the improvement of the quality of ANC was small, a significant continuous improvement was noted in the experimental group (implementing BANC principles) regarding interpretation and decision making. This could potentially have a positive impact on pregnancy outcomes (Snyman 2007a: 14).

The BANC approach was included in the list of strategies provided by the NDoH to achieve MDGs 4 and 5 which are to reduce perinatal deaths and improve maternal health by 2015 (NDoH 2007b: 77). ANC can screen for, detect and thus prevent many maternal complications that may occur before childbirth and can significantly improve the outcome of the unborn infant (Pattinson 2007: 5). Every site where pregnant women make contact with health services should be utilised. If all PHC facilities are providing BANC, ANC could be started as soon as the pregnancy has been confirmed. If a pregnant woman is brought into the system early, her health problem could be detected and managed or controlled early and treatment then has a greater chance of success (Pattinson 2007: 7).

The BANC approach is a quality improvement programme that focuses on the minimum level of ANC that every pregnant woman should receive. The approach has promotion of early ANC booking and reducing the number of goal oriented ANC clinic visits as the most important objectives to ensure the

provision of quality ANC. It also promotes the integration of the prevention of mother-to-child transmission (PMTCT) of HIV into routine ANC provision (NDoH, UNICEF and HST 2009: 2). The concept 'BANC' is used in South Africa while other countries use concepts like goal directed ANC, reduced visit approach or FANC. All these approaches, like the BANC approach, originate from the model developed by the WHO and modified to suit the circumstances of different countries.

Successful implementation of change might be affected negatively by scarce resources and staff turnover rates and resistance to change (Victoria Quality Council 2006: 5). This council further state that even healthy changes involve discomfort, uncertainty and conflict and suggest that in order to minimise resistance, a careful and phased-in approach to change might be required and an open trusting environment should be cultivated. It is essential for health services to implement system changes, in response to identified risk areas by reviewing adverse events, in order to achieve continuous quality improvement and the delivery of safe quality care. Strategies that might improve the likelihood of success of the change process (Victoria Quality Council 2006: 5) include engaging others, communication, motivation, sharing results, evaluation, and using a pilot industry watching for resistance. Zegart (2011: 9) states that implementing change and improving organisational performance is never easy because several challenges might confront the organisation and hinder progress. Change might require new ways of doing things; the ability to harness new practices and jettison older, less effective ones. The importance of rational decision making should be stressed so that all relevant options are sorted, and the best decisions are then made (Zegart 2011: 9).

The provision of MNCWH services is controlled by the NDoH. A strategic plan for MNCWH and nutrition is available which highlights the commitment and strategies of how South Africa intends to reduce mortality and morbidity amongst mothers, babies and children (NDoH 2011a: 6). The plan focuses on the delivery of comprehensive quality services and therefore aligns and links

strategies with efforts to improve the functioning of the PHC services and the DHS. The NDoH provides relevant documents to control and guide the provision of MNCW services. The Maternity Guidelines classify facilities into clinics, community health centres (CHCs) and three different levels of hospitals and specify where or what management should be provided at each level of care. It defines the levels of care, referral systems as well as staff required to be designated at those levels (NDoH 2007a).

The maternal health policy outlines a minimum set of national requirements for the management of patients in maternal health care services. However, the NDoH acknowledges that each province is autonomous and provides for the provinces to adapt or even develop their own guidelines, based on the national guidelines. The policy and guidelines deal with prevention and management of pregnant patients and also specify how to prevent unwanted pregnancy outcomes.

2.8 ANTENATAL CARE SERVICES IN THE KWAZULU-NATAL PROVINCE OF SOUTH AFRICA

According to the KZN Department of Health, protocols should be developed to be used to diagnose the risk status of pregnant women so that correct decisions regarding ANC, delivery and appropriate referrals are made (KZN Department of Health 1998: 9). The NDoH states that the approach to ANC should be goal directed and recommended that the focus at each visit should be on five goals which are: providing health education, conducting risk assessment, doing screening tests, giving treatment and arranging follow-up ANC visits. This goal directed approach was used in KZN in place of the traditional approach before the introduction of the BANC approach in South Africa. It is worth noting that the emphasis in KZN was already focussed/goal oriented care implying that many ANC visits were unnecessary. Pattinson (2007: 9) suggested that all healthcare facilities used by women should be able to do pregnancy tests and that an option to keep or terminate the pregnancy should be offered to all women once pregnancy has been confirmed. Pattinson (2007: 9) further stated that the first ANC consultation

should be carried out immediately at the point and place where pregnancy has been diagnosed thus BANC requires that all facilities used by women should provide ANC services. The KZN Department of Health (1998: 9) recommended that the number of ANC visits for normal ANC low risk pregnant women could be reduced to 4-5 optimal care ANC visits.

The KZN Department of Health, with assistance from the President's Emergency Plan for AIDS Relief (PEPFAR), United States Agency for International Development (USAID), Population Council and Reproductive Health Research Unit (RHRU), developed the Policy and Guidelines for Integrated Ante and Postnatal Care (PNC) at District Hospital, Community Health Care Centre and Clinic Level (KZN Department of Health, 2009). Part of the vision of the KZN Department of Health with this policy was the provision of ANC and PNC in family-centred manner to all women in KZN to ensure the maintenance of health of the mother and the birth of a healthy baby, through evidence-based care within the PHC approach to health service delivery (KZN Department of Health, 2009: 9).

2.9 ANTENATAL CARE SERVICES IN THE ETHEKWINI DISTRICT OF KWAZULU-NATAL

During the literature search, few studies done on BANC and/or approaches to ANC in the eThekwin district could be found. Some studies did not focus on BANC or ANC approaches but on HIV/AIDS (Nel, Mabude, Smit, Kotze, Arbuckle, Wu, Van Niekerk and Van de Wijgert 2012), involving men in maternity care (Mullick, Kunene and Wanjiru 2005) and improving public health information through a data quality intervention in KZN (Mphatswe, Mate, Bennett, Ngidi, Reddy, Barkerb and Rollins 2012).

The District Health Barometer 2011/2012 reported that the national rate for ANC visits before 20 weeks had increased annually since 2000/01 such that in 2011/12 it was 40.2%, which is an improvement on the 2010/11 rate of 37.6% (Massyn, Day, Barron, Haynes, English and Padarath 2012: 105). All provinces, with the exception of the Limpopo Province, showed an increase in

the rate of antenatal visits before 20 weeks' gestation. Despite this achievement the problem of a persistently high MMR remains a challenge. Although several efforts have been implemented nationally and locally to combat the problem of persistently high maternal and perinatal mortality rates, these rates remain persistently high in South Africa. The District Health Barometer also indicated that the rate for ANC bookings before 20 weeks' gestation were lower than the national rate in the populous districts of eThekweni (KZN), Ekurhuleni (Gauteng Province [GP]) and Johannesburg (GP) (Massyn et al. 2012: 79).

Several attempts have been initiated in the eThekweni district to reduce maternal mortality rates. One of these attempts included the introduction of a Campaign for the Accelerated Reduction of Maternal Mortality in Africa (CARMMA). CARMMA aims to accelerate the implementation of activities to stem maternal and child mortality and meet Africa's targets for MDGs 4 and 5 which are to reduce by three quarters the maternal mortality rate and to reduce the child mortality rate by two thirds between 1990 and 2015. CARMMA was launched in one of the district hospitals in eThekweni (Joint United Nations Programme on HIV/AIDS [UNAIDS] 2012). The launch was led by South Africa's Minister of Health, Doctor Aaron Motsoaledi, who emphasised that eThekweni district's healthcare workers needed to work hard to achieve the targets of the political declaration, namely to eliminate new HIV infections among children by 2015 and reduce maternal deaths. Professor Tlou, UNAIDS Regional Director for Eastern and Southern Africa, said "One death is a death too many" (UNAIDS 2012).

2.10 QUALITY ASSURANCE IN HEALTH CARE SERVICES

Quality is usually a reference to a level of excellence, fitness for a purpose or perception of a customer (Kruger and Steenkamp 2008: 32). Many years ago, quality was emphasised by authors like Donabedian (1980: 5) who described quality as a property of and a judgment upon some definable unit of care that is divisible into at least two parts: technical and interpersonal. According to Donabedian (1980: 5), the pregnant woman is an expert and the ultimate

authority on the quality of care received based on the values and expectations of the pregnant woman, assuming that patient satisfaction is the best measure of quality assessment.

Sometimes quality is equated with excellence and the majority of people working in healthcare situations, who are concerned with quality of the service, indicate that striving to attain quality and excellence are interchangeable issues. Because, according to McSherry and Warr (2008: 21), excellence is defined as an outward expression of an achievement of a desired outcome. Oakland (2008: 4-5) states that quality and reliability are used synonymously though in a confused manner. Oakland (2008: 21) explains that reliability refers to that part of the acceptability of the product or service which depends on its ability to function satisfactorily over a period of time and the ability of the product to continue to meet the customer's requirements. While, on the other hand, quality is meeting the customer's requirements, it is often used to signify excellence of a product or service (Oakland 2008: 4).

Quality assurance means change (WHO 2007: 11) and things are unlikely to change unless the main actors feel that the current situation is unsatisfactory. Oakland (2008: 7) advises that quality has to be managed otherwise it will just not happen. Three key groups are involved in service provision and all are critically important for quality assurance; the healthcare authority, the healthcare professionals and the clients as the consumers of the healthcare service (WHO 2007: 10). The health authorities might not acknowledge the need for quality assurance and might trust that quality would be assured through training and strict licensing of services and of healthcare professionals. The other health authorities that believe in quality might be unaware of the existence of effective methods to detect poor quality. Healthcare professionals, on the other hand, are usually proudly convinced of their high professional and ethical standards and they might regard any suggestion or query into the quality of their professional activities as an insult. The WHO maintained that clients might not know that it is possible to assess

the quality of care or they might be unaware that they lack a yardstick against which to compare the quality of care received by them (WHO 2007: 11). The WHO further state that sometimes clients might accept variations and concomitant substandard care as an inalienable characteristic of all human activities (WHO 2007: 11).

The two distinct but interrelated elements of quality are quality by design and quality conformance to design. The former is used to measure how well the product or service is designed to achieve the agreed requirements, while the latter measures the extent to which the product or service achieves the quality of design (Oakland 2008: 9). The emphasis is that what the patient receives should conform to the design and that everything should go according to plan (Oakland 2008: 9). Quality starts with understanding the need and is traced right through the service processes analysing the inputs and outputs of each process. This requires the researcher to have an understanding of the needs of the pregnant women as external customers and the needs of the midwives as internal customers. The researcher will also analyse the effectiveness of each process in meeting the expected outcome of quality healthcare for the pregnant women. Each component of the organisation, including all individuals, should work together and every process should work properly in the organisation because each part, each activity and each person in the organisation affects and is, in turn, affected by others (Oakland 2008: 15).

2.11 HOW THE PREGNANT WOMEN PERCEIVE QUALITY NURSING CARE

Meeting the customers' expected quality of care is not restrictive to the functional characteristics of the product or service as sometimes the pregnant woman will be satisfied either with the product or with the functional properties of the service or product. An example is the satisfaction of the relatives of a dying pregnant woman or of the pregnant woman herself whilst the treatment is not working to improve the health status of the pregnant woman. However, the relatives or the patient herself could still be satisfied or rate the care as being of a high quality based on the nursing care and attitudes of staff. The

majority of patient satisfaction instruments are not based on patients' perceptions and have been developed with little input from clients about what constitutes quality nursing care (Larrabee and Bolden 2001: 35). These authors suggest the use of pregnant women's satisfaction instruments that include measurement of pregnant women-defined dimensions of quality nursing care. In a study by Sokhela (2011: 44), clients verbalised their satisfaction with the service based on attitudes of staff in the healthcare services.

2.12 IMPROVING THE QUALITY OF ANTENATAL CARE SERVICES IN SOUTH AFRICA

Whilst South Africa has one of the highest coverage of maternal and child health services in Africa it remains one of the countries with a problem of persistently high maternal and perinatal morbidity and mortality rates (NDoH 2009: 66). Over the years, South Africa has continued to develop strategies to meet the global call of reducing maternal and child mortality rates. However, not much success has been achieved with these strategies. The strategies date back to 1978 when the international conference on PHC called for urgent and effective national and international actions to develop and implement PHC services throughout the world and particularly in developing countries (WHO and UNICEF 1978: 15). This was a new beginning for improving health services for South Africa. In 1994 the Reconstruction and Development Programme (RDP) provided the framework for health priorities in South Africa and formulated goals and objectives for maternal health and for other health issues (African National Congress 1994). The introduction of a Comprehensive PHC Service Package for South Africa in September 2001 marked another huge step towards addressing the health problems of the country (NDoH 2001). The package aims to define the services that are expected to be capable of tackling the leading causes of mortality and morbidity (NDoH 2001: 7).

South Africa announced maternal deaths to be a notifiable condition and introduced a system of confidential enquiries into maternal deaths in 1997

(NCCEMD 2003: 1). The NDoH set up and strongly supports three National Committees; the NCCEMD, PPIP and the CHIP committees (Bradshaw *et al.* 2008: 2). These committees review maternal, perinatal and children's deaths in South Africa and has been releasing series of triennial reports. The first report by NCCEMD was published in 1999 (NCCEMD 1999). All the reports highlight the causes of these deaths and make recommendations to address the causes of maternal, neonatal and children's deaths. These three committees constantly recommend that strengthening ANC services is a key to solving most maternal and child-related problems. A collaborative group of a wide range of health professionals produced the policy and management guidelines for common causes of maternal deaths which spell out the steps of treatment regimens and management of common conditions that cause maternal deaths (NCCEMD 2001).

The struggle towards fighting the problem of maternal and perinatal deaths continues and the focus is on improving the quality of healthcare services. This is evident in all the efforts to advance and improve healthcare services where MNCWH is constantly on the priority list. The MDGs, the National Co-standards, re-engineering of PHC services, the National Health Insurance (NHI) all have components addressing MNCWH (NDoH 2007b; NDoH 2011a; NDoH 2012c; NDoH 2011b). The NDoH began to include maternal health care as one of the principal priority programmes for South Africa as early as 1994 (African National Congress 1994). A triad relationship of the health care that includes consumers, healthcare providers and circumstantial socio-cultural factors has to work in harmonious relationships in order to benefit the pregnant women (NDoH 2011b: 21). Poor utilisation of quality reproductive health services by pregnant women, including failure to attend ANC clinics, infrequent ANC clinic visits, delays in seeking medical help and unsafe abortions have been identified as contributing to maternal morbidity and mortality in South Africa (NCCEMD 2006: 10).

Understanding the preferences of people, and the various factors that influence their preferences, could help to implement strategies that would

improve the utilisation of skilled obstetric services and thereby reduce unnecessary loss of lives (Iyaniwura and Yussuf 2009: 112). Access to maternal health services was addressed with great success with the introduction of the DHS (NDoH 1997: 21). The political transition of South Africa in 1994 brought about many positive changes in the country's healthcare system. One far reaching change was the introduction of free maternal and child (age < 6 years) healthcare which was later expanded to include free PHC services for all. The principles of equitable and humane health service delivery details various steps that need to be considered for ANC since merely attending health clinics is insufficient for obtaining the desired pregnancy outcomes. The Batho Pele (putting people first) principles add a valuable contribution to the quality of care when adhered to by midwives (NDoH 1997).

2.13 INFLUENCE OF QUALITY OF ANTENATAL CARE ON MATERNAL AND PERINATAL OUTCOMES

The PHC clinics, providing ANC services, provide the first entry points for pregnant women into the healthcare services of South Africa. Failure to meet the requirements in any part of a quality chain has a way of multiplying and a failure in one part of the system creates problems elsewhere leading to more failures and more problems (Oakland 2008: 7). Both the Saving Babies and Saving Mothers Reports highlight that the quality of care that women receive during ANC is partly responsible for the majority of the maternal and perinatal deaths in this country (NCCEMD 2012 NDoH *et al.* 2010). This belief is substantiated by Oakland (2008: 7) when the author highlights the importance of quality chains of customers and suppliers which might be broken at any point by one person or one piece of equipment not meeting the requirements of the customer. Oakland (2008: 7) further explains that the failure usually finds its way to the interface between the organisation and the outside customers, and the people who operate at that interface.

The 2008-2010 Saving Mothers' Report clearly identified three conditions that contributed to the majority of preventable maternal deaths, namely non-

pregnancy-related infections, obstetric haemorrhage, and complications of hypertension in pregnancy. These conditions comprised 66.7% of possible and probable preventable maternal deaths (NCCEMD 2012: 6). The three conditions have many common preventable factors, which are mostly related to the knowledge and skills of the healthcare providers and the challenges within the healthcare system (Beksinska, Kunene and Mullick 2006: 297). The Saving Babies Report 2008-2009 highlighted that procedures and treatment during ANC, including screening for and managing of syphilis, intra-uterine growth retardation, diagnosing and controlling pre-eclampsia, HIV screening and management through PMTCT and avoiding post-maturity through growth monitoring could make a major contribution to reducing perinatal and children's deaths (NDoH *et al.* 2010: xii). This highlights the importance of access to healthcare for pregnant women. Adequate ANC and skilled obstetric assistance during delivery are important strategies that could significantly reduce maternal mortality and morbidity rates (NCCEMD 2009; Pattinson 2007; NDoH 2012c). ANC offers one avenue to provide pregnant women with information, treat existing social and medical conditions and screen for risk factors (NDoH 2007a: 19).

2.14 THE THEORETICAL FRAMEWORK GUIDING THE STUDY

Polit and Beck (2012: 142) described a framework as the overall conceptual underpinnings of a study. A framework of research helps the researcher to organise the study and provides a context within which the researcher examines a problem, and gathers and analyses data (Brink, Van der Walt and Van Rensburg 2012: 26). The theoretical framework interrelates concepts to create a specific way of looking at a particular phenomenon. It provides the researcher with a framework within which ideas are organised thus enabling the researcher to show that the proposed study is a logical extension of current knowledge (Brink, Van der Walt and Van Rensburg 2012: 26). It is necessary that several theories should be reviewed in order to select the most appropriate and relevant one to guide the study based on the research problem.

2.14.1 Selection of a theoretical framework to guide the study

The selection of the theoretical framework was based on the research aim and objectives of the study. Several theoretical frameworks were considered to guide the study. These included Imogene King's Theory of Goal Attainment, Donabedian's Structure Process and Outcome Theory, the Clinical Microsystem Theory and the four Ps and three Cs Model for Total Quality Management (TQM) by Oakland.

Henning, Gravett and Van Rensburg (2005: 25), describe theories as statements about how things are connected with the purpose of explaining why things happen the way they do happen. Theories assist people to sort out the world, make sense of it, guide one how to behave in it and predict what generalisations could establish relationships between things within a system. The theoretical framework positions the research in the discipline (in which the researcher is working) thus enabling the researcher to theorise about the research (Henning *et al.* 2005: 25).

2.14.2 Imogene King's Theory of Goal Attainment

Initially the researcher considered King's theory of Goal Attainment as an ideal framework on which to base the current study. King's Theory of Goal Attainment emphasises that both the nurse and the pregnant woman bring important knowledge and information to the relationship and that they work together to achieve goals (King 2006: 3). The author developed a general systems framework and a theory of goal attainment where the framework refers to the three interacting systems and the theory of goal attainment pertains to the importance of interaction, perception, communication, transaction, the self, role, stress, growth and development, time and personal space. King's framework is based on assumptions that human beings are the focus of nursing. In this theory, King identified the nursing domains which involve human beings, families and communities as a framework within which nurses make transactions in multiple environments with health as a goal (Khowaja 2006: 44). Whilst this theory could be used to guide the study it

was not chosen because it did not cover all areas that the researcher intended to investigate such as planning, people, processes, culture and commitment.

2.14.3 Donabedian's Structure, Process and Outcome Theory

The second theory that was considered but also not selected was Donabedian's Model of Structure, Process and Outcome. According to Naranjo and Kaimal (2011: 33), Donabedian's Model was introduced in 1966 and includes the three dimensions of structure, process and outcome which are equally formed into three components. Each component is directly influenced by the antecedent with which it is interdependent. Donabedian's Model provides a roadmap to improving quality by illustrating that there must be a focus on improving structures and/or processes in order to improve patient or organisational outcomes (Naranjo and Kaimal 2011: 34). The model could be used during data analysis where the data could be grouped according to the three components for evaluation of quality as described in the theory. The structure is defined as the setting where care takes place the primary premise of which is that given the right setting, high-quality care will exist (Naranjo and Kaimal 2011: 34).

The structure or setting of an organisation is multi-faceted, including material and human resources, and organisational factors, such as leadership and safety culture, all of which influence the delivery of healthcare and material resources include facility layout, number of licensed beds, supply and equipment inventory, and the availability of specialty equipment. Human resources include the number of staff members, as well as their qualities such as educational levels, board certifications, and specialty certifications (Naranjo and Kaimal 2011: 34).

The process is described as the intervention or service that provides patients with an improved outcome commonly referred to as the "actual provision of care'. Process is essential to the theoretical framework because process is what allows an organisation to apply the high-quality care that is widely

accepted and has been validated in the literature as influencing a specific outcome. Donabedian in her model refers to 'medical care' but that the assumptions could be applied to different aspects of health care as well. While process is thought to have the biggest impact on outcome, it also offers relevant feedback about the structure mechanisms already in place (Naranjo and Kaimal 2011: 34). Outcome measures are the desired states resulting from care processes, which in the case of this study will be improved quality of ANC for the pregnant women.

The outcome is the explicit result that occurs from the antecedents of structure and process; the ultimate indicator of care provided does not only provide concrete measurements of individual performance, but collectively serves as a benchmark for quality performance and reflects the results of service quality. Outcomes can assist healthcare organisations to identify potential areas of risk, non-compliance, and under achievement, as well as provide guidance for quality improvement opportunities (Naranjo and Kaimal 2011: 35).

The researcher considered this theory because it could guide the study through examining how, according to the pregnant women and as observed and documented in the maternity case records, the three dimensions as described in Donabedian's Model could influence the quality of ANC during pregnancy. This theory fitted the researcher's intended investigations better than Imogene King's Theory of Goal Attainment. Nevertheless, this theory lacked several critical aspects that the researcher wanted to assess in the PHC clinics such as commitment of the midwives to provide quality ANC, thus the theory was not selected.

2.14.4 The Clinical Microsystem Model

Another model that was considered was the Clinical Microsystem Model. Clinical microsystems are described as the places where patients, families and clinical teams meet, the front-line units that provide most healthcare to most people (Dartmouth-Hitchcock Medical Center 2005: 2). It is further

described in the model that the microsystem is where quality, safety, reliability, efficiency and innovation, staff morale and patient satisfaction exist forming the building blocks of practices. In the model, five Ps are described which are the purpose, processes, patients, professionals and patterns and it is emphasised that these aspects should be used to review performance in order to create a big picture about the system (Dartmouth-Hitchcock Medical Centre 2005: 4).

The model could be used to assess how the BANC approach was being implemented and to describe the experiences of pregnant women with the BANC approach. However, the researcher was not convinced that using this model would provide all the answers she required for the current study. Thus a further search was conducted for a more appropriate framework.

2.14.5 The four Ps and three Cs Model for Total Quality Management

Finally the researcher settled for the model that had its emphasis on total quality management. The four Ps and three Cs Model for Total Quality Management (TQM) was chosen to guide the study. The four Ps are performance, planning, processes and people and three Cs are culture, communication and commitment (TQM) (Oakland 2008: 27). This author described these as critical elements for total quality management in any organisation or project. Henning *et al.* (2005: 14) described theories as statements about how things are connected with the purpose of explaining why things happen as the way they do happen. The four Ps and three Cs model for TQM was used to position the research in the discipline in which the researcher is working thus enabling the researcher to theorise about the research. This assisted the researcher to make explicit connectedness of the way things are related in the world (Henning *et al.* 2005: 25).

The four Ps

Oakland (2008: 344) states that good **Performance** is achieved using three hard management necessities which ensure establishing performance measure frameworks. These include:

- **Planning** development and deployment of the right policies and strategies, setting up appropriate resources, partnerships, and designing quality;
- **Processes** which are the keys to delivering quality products and services to customers; and
- **People** with the right knowledge, skills and training.

All these hard management necessities require commitment, the right culture and good communication (Oakland 2008: 344) to ensure quality care.

The importance of the three Cs

The three Cs are described by Oakland (2008: 345) as culture, communication and commitment. According to Oakland (2008: 27) the three Cs are the soft outcomes. The **culture** that prevails in the organisation between various stakeholders, staff to staff, staff to patients and staff to management is critical to ensure team work and co-operation among staff members and good relations between staff members and pregnant women. The organisations should maintain **communication** in all directions between staff members and with patients. Oakland (2008: 23) suggested that it is essential to provide relevant information, convey good practices and generate interest, ideas and awareness through excellent communication processes. **Commitment** to work performance is important for the successful implementation of any programme.

Sangster-Gormley, Martin-Misener and Burge (2013: 1) identified involvement, acceptance and intention as the three sensitising concepts that influence implementation. These concepts translate into commitment. These authors stressed the need to consider these three factors simultaneously throughout the implementation process because of their interconnectedness. According to Vaughan (2001: 3), the strength of an individual's involvement is directly related to the extent of his or her attitudes toward the system. With increased user involvement and positive attitudes, users have an increased desire to participate in programme development simply because if an

individual believes that the system is personally relevant, he/she will be more likely to form a positive attitude toward that system and commit to it as attitudes are generally formed on the basis of beliefs. Implementers would be able to enhance the probability of effective user involvement by assessing the users' predisposition toward the system, including analysing users' beliefs regarding their perceived ability to effectively contribute during the development process (Vaughan 2001: 3).

2.15 SUMMARY

Chapter 2 presented the findings of the literature reviewed to support the study and the selection of the theoretical framework to guide the study. Several peer reviewed ideas and findings to support and substantiate the study were presented and used to create relevant arguments regarding the current study. Since the BANC approach is the strategy for and by the NDoH various documents, including policies and guidelines from the NDoH, were presented and used to support the study. The discussion was also based on the FANC model by the WHO as the BANC approach was designed based on this model. Several theories were briefly discussed and the reasons why they were not selected were presented. The four Ps and three Cs Model of TQM was presented as the chosen framework to guide the study and ways were discussed as to how this model could guide the current study. In the next chapter the methodology adopted to collect data for the current study will be presented.

CHAPTER 3 : RESEARCH METHODOLOGY

3.1 INTRODUCTION

The previous chapter focussed on the literature review and also described the selection of the framework used to contextualise the study. The intention was to use the literature to support and strengthen the study. This chapter outlines the research methodology portraying the steps and procedures that were undertaken during the study. It also highlights how the TQM model was used to guide the study.

3.2 SELECTION OF THE APPROPRIATE RESEARCH METHOD

Teddlie and Tashakkori (2009: 4) describe the three communities of researchers in social and behavioural sciences as being qualitatively orientated, quantitatively orientated and mixed methodologists. The selection of the method to use is guided by the research subject and the existing knowledge about it (Brink 2011: 11).

According to Burns and Grove (2009: 23), quantitative studies describe and examine relationships and can determine causality among variables, useful for testing a theory. The quantitative research incorporates logistics, deductive reasoning as the researcher examines particulars to make generalisations about the phenomenon. Polit and Beck (2012: 763) describe qualitative research as the investigation of the phenomena typically in an in-depth and holistic fashion, through the collection of rich narrative material, using a flexible research design. Qualitative denotes the type of enquiry in which the qualities, the characteristics or the properties of the phenomenon are examined to enhance understanding and explanation (Henning 2004: 35). Qualitative studies aim to find out what the actions of the people in the study are, what they think, possibly also what they feel, what their setting looks like and what the significance of the signs and symbols in the settings could be (Henning 2004: 75). The researcher required a design that incorporates all

the above qualities in order to gather the necessary facts that would guide her in the development of the tailored practice framework and felt using either of the two methods would fall short of the qualities that existed in the other method.

Another useful design, which is available to the researchers and is growing very fast because of its benefit of allowing the researcher to take the best of the qualitative and quantitative methods and combine them (Bergman 2008: 11), is the mixed method design. Creswell and Plano Clark (2011: 5) describe the mixed methods research design as the design with a philosophical assumption that guides the direction of the collection and analysis of data. The study required a mixture of qualitative and quantitative approaches in the research process in order to be able to answer the research questions and achieve the study's objectives. Thus, a mixed methods design was used to conduct the current study.

Both qualitative and quantitative data were collected and analysed within a single study. The quantitative aspect enabled the researcher to gather information through structured observations and retrospective record reviews on how the BANC approach was being implemented in the PHC clinics that participated in the current study. The qualitative aspect allowed the researcher to gather information from the pregnant women conducting one-to-one semi-structured interviews. The pregnant women had to describe their ANC experiences at the PHC clinics that were implementing the BANC approach. Table 3.1 presents the research methods used to achieve each objective of the current study.

Table 3.1: Research methods used to achieve specific objectives of the study

	OBJECTIVE	RESEARCH QUESTION	DATA COLLECTION METHOD	APPROACH
1	Assess the implementation of the BANC approach in the PHC clinics.	Were the BANC principles of good care and guidelines being implemented in the PHC clinics?	Observations using an observation tool	Quantitative
2	Determine whether pregnant women's ANC records provided evidence of the application of the BANC Principles of Good Care and Guidelines.	Which BANC guidelines were implemented as portrayed (evidenced) in the pregnant women's ANC records?	Record review using a checklist	Quantitative
3	Describe the perceptions of pregnant women regarding the health care services they received in the PHC clinics that were implementing the BANC approach.	What were the perceptions of the pregnant women about the healthcare services they received in the PHC clinics that were implementing the BANC approach?	One-to-one interviews using a semi-structured interview schedule (guided by interview guide)	Qualitative
4	Develop a tailored practice framework which is an individualised nursing intervention approach based in PHC settings and pregnant women's specific factors to facilitate the implementation of the BANC approach in line with the provisions of the BANC Principles of Good Care and Guidelines	Based on the findings of all the above		

3.3 THE WORLD VIEW

The pragmatic world view was used to inform the study design. Creswell and Plano Clark (2011: 26) state that pragmatism draws on many ideas, including employing what works using diverse approaches and valuing both objective and subjective knowledge. These authors suggest that pragmatism is typically associated with mixed methods research because the researcher is able to combine both deductive and inductive reasoning while mixing qualitative and quantitative data. In the current study the researcher used diverse approaches to gather the information. These included the different

methods of data gathering which included observations record reviews and interviews. The researcher collected both the qualitative and quantitative data and converged the two in order to gain a broader interpretation and perspective of what would work which in this case meant what would be the best practice framework for implementation of the BANC approach in a eThekweni district.

3.4 STUDY METHOD AND DESIGN

A non-experimental, cross sectional mixed methods design was used to conduct the study. The quantitative phase enabled the researcher to gather information through structured observations and retrospective record reviews. Polit and Beck (2012: 763) describe quantitative research as the investigation of the phenomena that lend themselves to precise measurement and quantification, often involving a vigorous and controlled design. The qualitative phase allowed the researcher to gather information from the pregnant women using one-to-one semi-structured interviews. Polit and Beck (20012: 763) describe a qualitative research as the investigation of the phenomena typically in an in-depth and holistic fashion, through the collection of rich narrative material using a flexible research design. It was hoped that the same conclusion would be reached with each of the two methods used during the current study as this would show that the conclusion was not an artefact of the method (Bergman 2008: 38).

Creswell and Plano Clark (2011: 69-70) describe four basic designs available to the researcher planning to engage in mixed methods research which describe interaction, priority, timing and mixing of the quantitative and qualitative strands of the mixed method design (Figure 3.1). The designs include convergent parallel, explanatory sequential, exploratory sequential and embedded designs. The convergent parallel design of the mixed method approach was used in the study. This method allowed the researcher to use concurrent timing to implement the qualitative and the quantitative strands during the same research process, prioritised the methods equally, and kept the strands independent and only to mix the quantitative and qualitative

results during the overall interpretation (Creswell and Plano Clark 2011: 70). The purpose of using the convergent design was to obtain different but complementary data on BANC so as to enable the researcher to acquire the best possible understanding of the research problem (Creswell and Plano Clark 2011: 76). The mixing of the two data sets could reveal not only connections between knowledge from different sources but could also explain the nature of identified relationships in those connections (Bergman 2008: 38).

In the current study the researcher collected and analysed the quantitative data, gathered using the observations and retrospective record reviews, which informed the researcher about the BANC approach's actual implementation. For the qualitative strand the researcher collected and analysed the qualitative data by conducting semi-structured interviews with pregnant women. Data from the qualitative strand informed the researcher about the experiences of the pregnant women regarding the care that they were receiving at the PHC clinics that were implementing the BANC approach. The researcher merged the two sets of data during data interpretation and discussion. The merging of data enabled the researcher to gain an understanding about the way in which the BANC approach was being implemented in eThekweni district. The researcher thereafter transformed the qualitative data set in order to assess the extent of each theme that emerged.

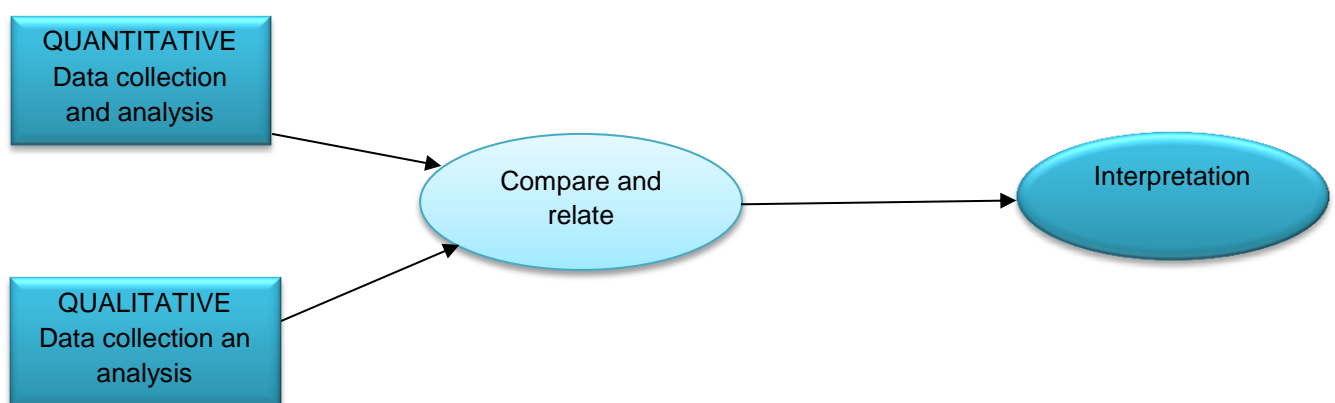


Figure 3.1: Diagrammatic presentation of convergent parallel design
(Creswell and Plano Clark 2011: 69)

3.4.1 The priority of the quantitative and qualitative strands

The nature of the study called for the quantitative and qualitative phases to be given equal priority. Creswell and Plano Clark (2011: 65) describe priority as referring to the relative importance or weights of the quantitative and the qualitative methods for answering the study's questions of which they distinguish between equal, quantitative or qualitative priorities.

3.4.2 Determining timing of quantitative and qualitative strands

Timing refers not just to the time of data collection but also to the order in which the researcher will use the data (Creswell and Plano Clark 2011: 65). These authors differentiate between concurrent, sequential and multiphase combination timing (Creswell and Plano Clark 2011: 66). The study was conducted using convergent parallel timing, implying that both strands of the study were conducted during one single phase. The researcher used concurrent timing to implement the quantitative and the qualitative strands during the same phase of the research process, prioritised the methods equally and kept the two strands independent during analysis with the intention of mixing the results during the overall interpretation (Creswell and Plano Clark 2011: 70).

3.4.3 Mixing of data sets: Determining when and how to mix data sets

Creswell and Plano Clark (2011: 66-67) distinguish between four distinct levels at which data sets can be mixed, these include mixing during interpretation, during data analysis, during data collection or at the level of design. Mixing occurs at the point of interface also known as the stage of integration, a point within the process of research where the quantitative and qualitative strands are mixed (Creswell and Plano Clark 2011: 66-67). Data mixing for the current study was done during data interpretation. The researcher first individually analysed each strand of data. By comparing the results of the two strands the researcher was able to draw conclusions or inferences that reflected how the BANC approach was being implemented

and the experiences of the pregnant women regarding the care that they were receiving from the PHC clinics that were implementing the BANC approach. The researcher learned from the quantitative strand how the BANC approach was being implemented and the experiences of the pregnant women from the qualitative strands. Combining the two results assisted the researcher to draw conclusions about what could be the best practice framework that would facilitate and sustain the implementation of the BANC approach in eThekweni district. Figure 3.2 is a schematic presentation of the research process. Both the first and the second stages of the study are presented. The two strands of the mixed methods enquiry are shown; the point of data mixing and development of the best practice framework is also indicated.

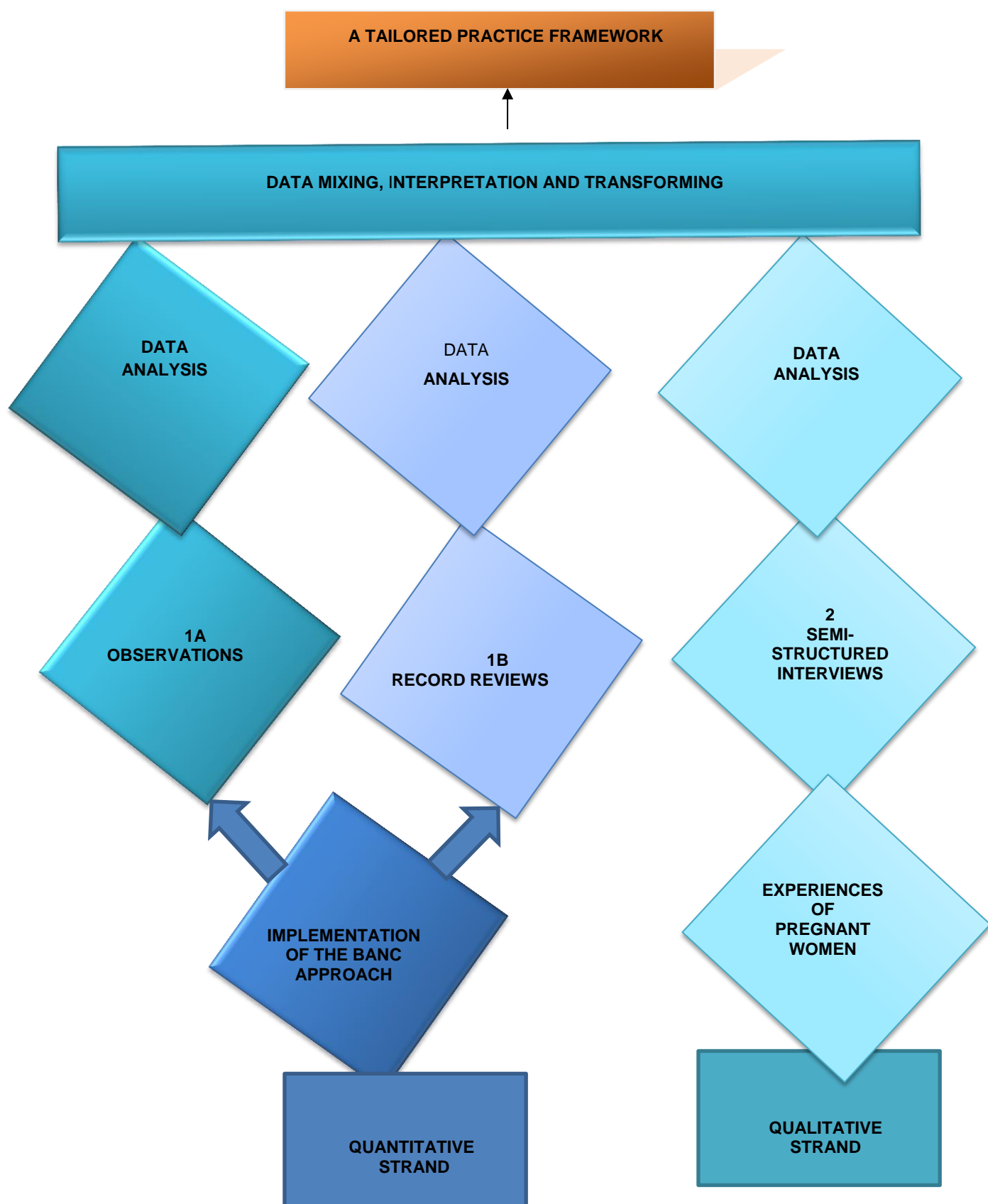


Figure 3.2: Schematic presentation of the research process

3.5 HOW THE FOUR Ps AND THREE Cs TOTAL QUALITY MANAGEMENT MODEL GUIDED THE STUDY

The BANC approach was introduced as a quality management strategy and therefore the TQM Model offered an ideal framework on which to base the assessments of the PHC clinics implementing the BANC approach during the current study. The model was used to guide the researcher during the study by indicating areas of focus in assessing how the BANC approach was being implemented because, the model provided a simple framework for excellent performance covering all angles and aspects of an organisation and its operation (Oakland 2008: 27) (Figure 3.3). These included how the PHC clinics had planned for implementing the BANC approach, various processes and procedures carried out during the implementation of the BANC approach, skills and knowledge of the people involved in the implementation and their performance in achieving the successful implementation of the BANC approach. Coupled with these was also the analysis of the culture prevailing in the organisation, extent and quality of communication in the PHC clinic, and the extent of commitment displayed by respective healthcare workers providing the BANC service.

Oakland (2008: 344) maintains that good performance requires that the three hard management necessities of establishing performance measure frameworks should be considered. The researcher considered this during the organisation and the structuring of the research process. These were also considered during the development of the data collection tools. During the process of observations the researcher observed whether planning was taking place in the PHC clinic. Planning included the development and deployment of the right policies and strategies, setting up appropriate resources, partnerships, and designing quality for the ANC programme. The researcher also observed whether the midwives and other staff members in the PHC clinics were making sure that the processes, being the key to delivering good quality products and services to customers, were well planned and co-ordinated and ensuring that the people with the right knowledge, skills and

training were available to provide the service. Oakland (2008: 28) emphasises that all these aspects require commitment, the right culture and good communication in order to ensure total quality management of the project or programme. The researcher was able to assess this during her one week stay at each PHC clinic observing the processes and the people. The process of record review was used to assess how the BANC approach was being implemented. This information informed the researcher about the people that were involved in the implementation of BANC, their skills and knowledge about the programme. Through record reviews the researcher was also partly able to evaluate the structure, for example whether policies and guidelines were being adhered to and whether the processes were in line with the relevant guidelines and policies.

The semi-structured interviews with the pregnant women addressed relevant aspects of the model. The probing questions that the researcher asked during the interviews were also influenced by the model. The prevailing culture in an organisation between various stakeholders, staff to staff, staff to patients and staff to management is critical to ensure team work and co-operation between staff members and good relations between staff and the pregnant women. Culture in any business (Oakland 2005: 32) is defined as a belief that pervades the organisation about how business should be conducted and how employees should behave and should be treated. Finlayson and Downe (2013: 8) state that cultural issues, relating to language and staff insensitivity, are important and deter some women from accessing ANC early and regularly. Assessment was done during the observations and interviews to note the prevailing culture in the PHC clinics that were implementing the BANC approach. Observations were made regarding whether (a) the staff members were assisting each other when there was a need to do so, (b) the attitudes of staff members towards each other (c) satisfaction of the pregnant women with the service, (d) follow-up visits scheduled based on each pregnant woman's convenience, (e) the pregnant woman's involvement in her own care and (f) privacy maintained during consultations and examinations. During the semi-structured interviews the

pregnant women were questioned about their experiences with the BANC approach, their relationships with the staff members at the clinic and their satisfaction with the ANC services received.

Communication in all directions between staff members and with patients is critical for the success of the programme. Oakland (2008: 318-322) stresses the importance of communication in any organisation suggesting that it is essential to provide relevant information, convey good practices and generate interest, ideas and awareness through excellent communication processes. An assessment was done regarding communication between each clinic's staff members and the pregnant women and between the clinic's staff members and other relevant stakeholders such as referral institutions and the Emergency Medical Rescue Services (EMRS).

Commitment to work performance is important for the successful implementation of the programme. The researcher not only observed and assessed the commitment of the clinic staffs but also the commitment of the pregnant women to their care. Sangster-Gormley, Martin-Misener and Burge (2013: 1) identified and verified the three concepts, which according to these authors translate into commitment namely involvement, acceptance and intention. These authors state that these concepts are the three sensitising concepts that influence implementation. The researcher asked the women about the extent of their involvement in their own care during the semi-structured interviews. The model was also used to guide the analysis and interpretation of the research findings and guided the development of the best practice framework. Although the recommendations were made with special reference to policy development and implementation, institutional management and practice, nursing education and further research, the researcher also considered the provision of Oakland TQM model when she was preparing and presenting the recommendations as detailed in Chapter 5.

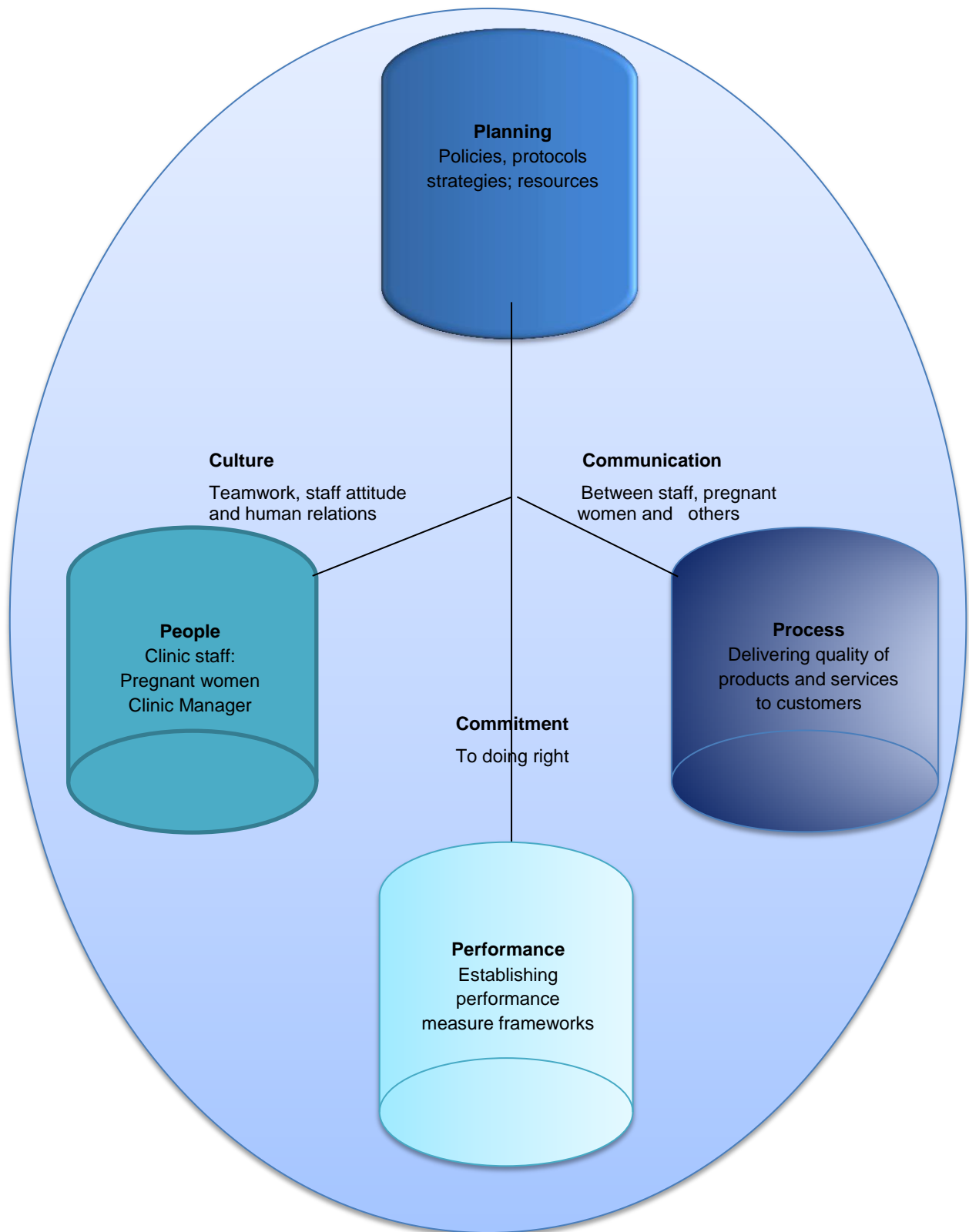


Figure 3.3: Application of the four Ps and three Cs model for total quality management in the current study (Oakland 2008: 345)

3.6 GEOGRAPHIC AREA WHERE THE STUDY WAS CONDUCTED

The study was conducted in the eThekweni district, one of the eleven districts of the KZN province in South Africa. The area, formerly known as Durban, is topographically hilly with many gorges and ravines and almost not a true coastal plain. Durban has a turbulent history dating from ivory hunters in the 1820s and their conflict with the local Zulu monarchs. EThekweni is known as the home of Africa's best-managed busiest seaport. It is also a major centre of tourism because of its warm subtropical climate and extensive beaches. Its land is comparatively larger than other South African cities (KZN Department of Health 2005: 1).

The geographical area of the municipality is 2 292 km². The 2001 census recorded a population of 3 070 572 for the municipality. As such the density is just over 1 000 people per km². The areas close to the main national roads are well provided with physical infrastructure and social amenities. Areas on the periphery of the city tend to be poorly resourced. Communities living there have the lowest access to services and the lowest socioeconomic status. It consists of 2 297km² of which 36% are rural, 29% peri-urban and 35% urban. The eThekweni municipality (EM) is located on the central coast of KZN and is the province's only metropolitan municipality. The municipality consists of 100 wards (KZN Department of Health 2005: 1).

EThekweni is the largest city in the KZN province and the third-largest city in South Africa. The eThekweni municipality is the second largest metropolitan council in South Africa. EThekweni district is sub divided into three sub-districts: the North, South and West sub-districts. The West sub-district is sometimes referred to as "Outer West" as seen in Figure 3.4. Its boundaries extend to Umkomaas in the South where it meets with uGu district, and includes some tribal areas in Umbumbulu. Cato Ridge lies on the western boundary where it meets with UMgungundlovu district and Tongaat lies in the north. The northern boundary moves inland to Ndwedwe where it meets with iLembe district. In the East is the Indian Ocean. The map in Figure 3.5 presents the demarcation of the four sub-districts. Initially eThekweni district

was divided into four sub-districts as shown in the map; the South, the West, the North and the Central sub-districts. In 2005, with the reorganisation of boundaries to facilitate service distribution, delivery and management, the South and the Central sub-districts were merged into one sub-district and together form the South sub-district. This re-organisation resulted in the South sub-district being larger than the other two sub-districts.

EThekweni district is the largest of the eleven districts in KZN with a population of just over 3 million (KZN Department of Health 2009). This is more than one third of the population of the entire KZN which is about 9.9 million. This means slightly more than one-third of the population of KZN resides in the eThekweni district. The population is mainly African with about 13% consisting of White, Indian, Coloured and other population groups. English is spoken predominantly in the urban areas but isiZulu is mostly spoken throughout KZN although some Xhosa and Afrikaans are also spoken. More foreign languages such as Chinese and Tswayilli are heard more frequently in eThekweni due to the number of immigrants from countries like China, Zimbabwe and Mozambique. EThekweni is a vibrant, dynamic city of many colours, a multitude of languages, religions and cultures. It is a mixture of old and new, ancient and modern, with a fast-pace inner-city core and laid-back outer city suburbia. Females make up 51.94% of the total population. A total of 58.68% of the population (male and females combined) is in their reproductive ages of 15-49 years (Sanral 2008: 1).

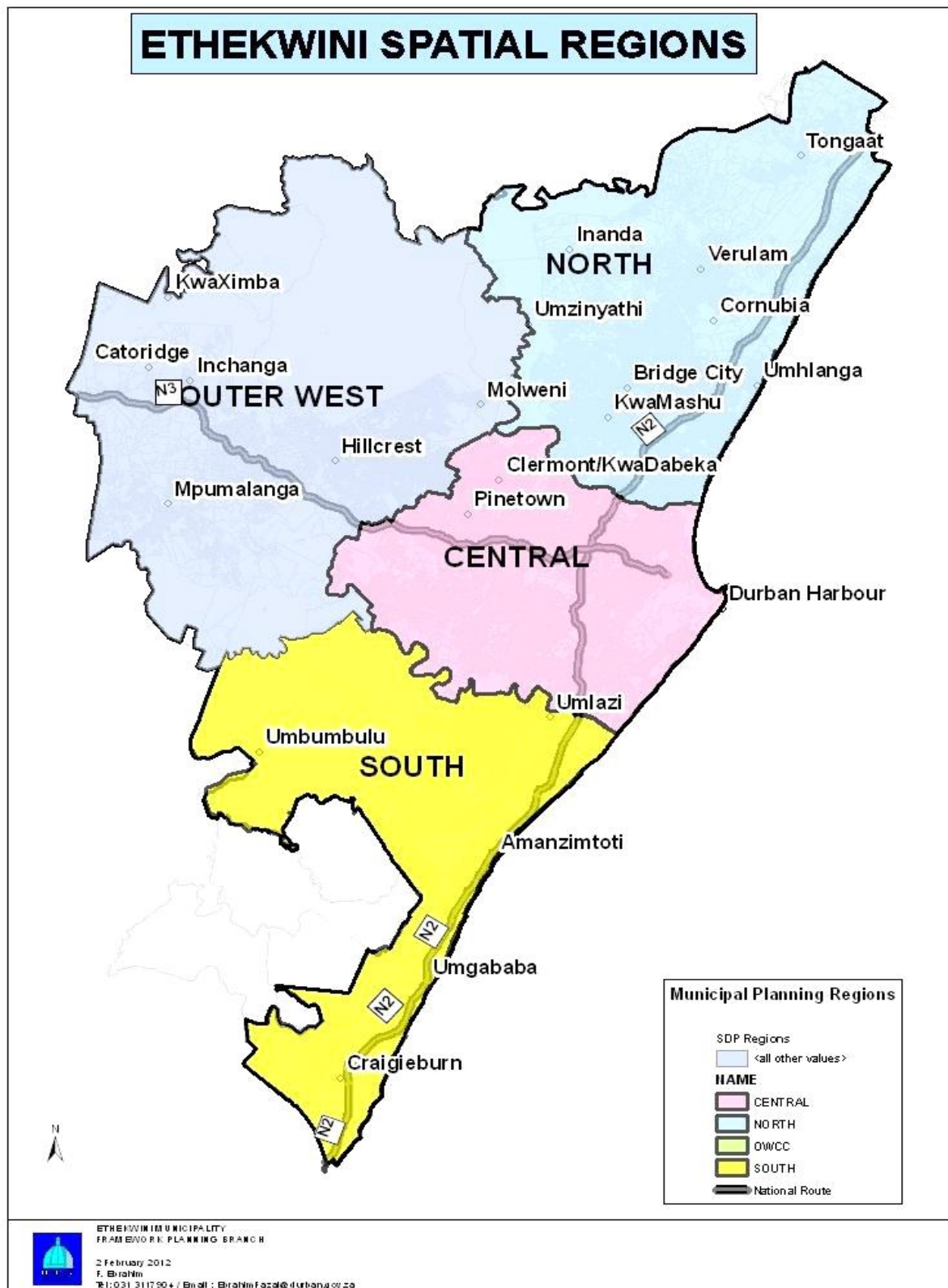


Figure 3. 4: Map showing the eThekweni sub districts (EThekweni Municipality 2013: 42)

3.7 RECRUITMENT SETTING

The setting for recruitment was the PHC clinics that were providing ANC services using the BANC approach. ANC services in eThekweni district are provided as part of the comprehensive PHC package of services (NDoH 2001: 21). At the time of the study the provision of PHC services in the eThekweni district was shared between eThekweni Municipality and the KZN Department of Health, following a service level agreement that existed between the two healthcare authorities. There were 102 PHC clinics in eThekweni district, of which 58% (59 clinics) were controlled by the municipality and the other 42% (43 clinics) were controlled by the KZN Department of Health (KZN Department of Health 2010). The PHC clinics were distributed in the three sub-districts as follows: there were 45 PHC clinics in the South, 29 in the North and 28 in the West sub-district. In the South sub-district 29 PHC clinics were controlled by the municipality and 16 were controlled by the KZN Department of Health. In the North sub-district, 18 PHC clinics were controlled by the municipality and 11 were controlled by the KZN Department of Health. In the West sub-district 13 were controlled by the municipality and 15 were controlled by the KZN Department of Health (eThekweni Municipality 2013: 42).

The study was conducted in the PHC clinics that were providing ANC services. The researcher, having worked in the eThekweni district, was aware that not all PHC clinics in district were providing ANC services and that not all of the PHC clinics, that were providing ANC services, were implementing the BANC approach. This information was also confirmed by Ngxongo (2011: 68-69). A total of 58 municipal PHC clinics were providing ANC services and were using the BANC approach and 41 of the KZN Department of Health's PHC clinics were providing ANC services, with 38 implementing the BANC approach. Both the municipality's and the KZN Department of Health's PHC clinics were included in the study. The monthly number of pregnant women obtaining ANC at specific PHC clinics ranged from 4 to 988. The average case load for each clinic was calculated over six months using the statistics

from the eThekweni district information system from October 2012 to March 2013. A total of 35 PHC clinics recorded fewer than 100 ANC clients per month, 29 PHC clinics recorded an average of 100-199 and 32 PHC clinics recorded an average of 200 or more ANC clients per month. The study focussed on the PHC clinics with a recorded average of at least 200 ANC clients per month. Figure 3.5 shows the distribution of the PHC clinics in eThekweni district (not all PHC clinics appear on this map). For the purpose of this study the KZN Department of health shall be referred to as 'Province' and the PHC clinics belonging to this health authority shall be referred to as 'Provincial PHC Clinics'.

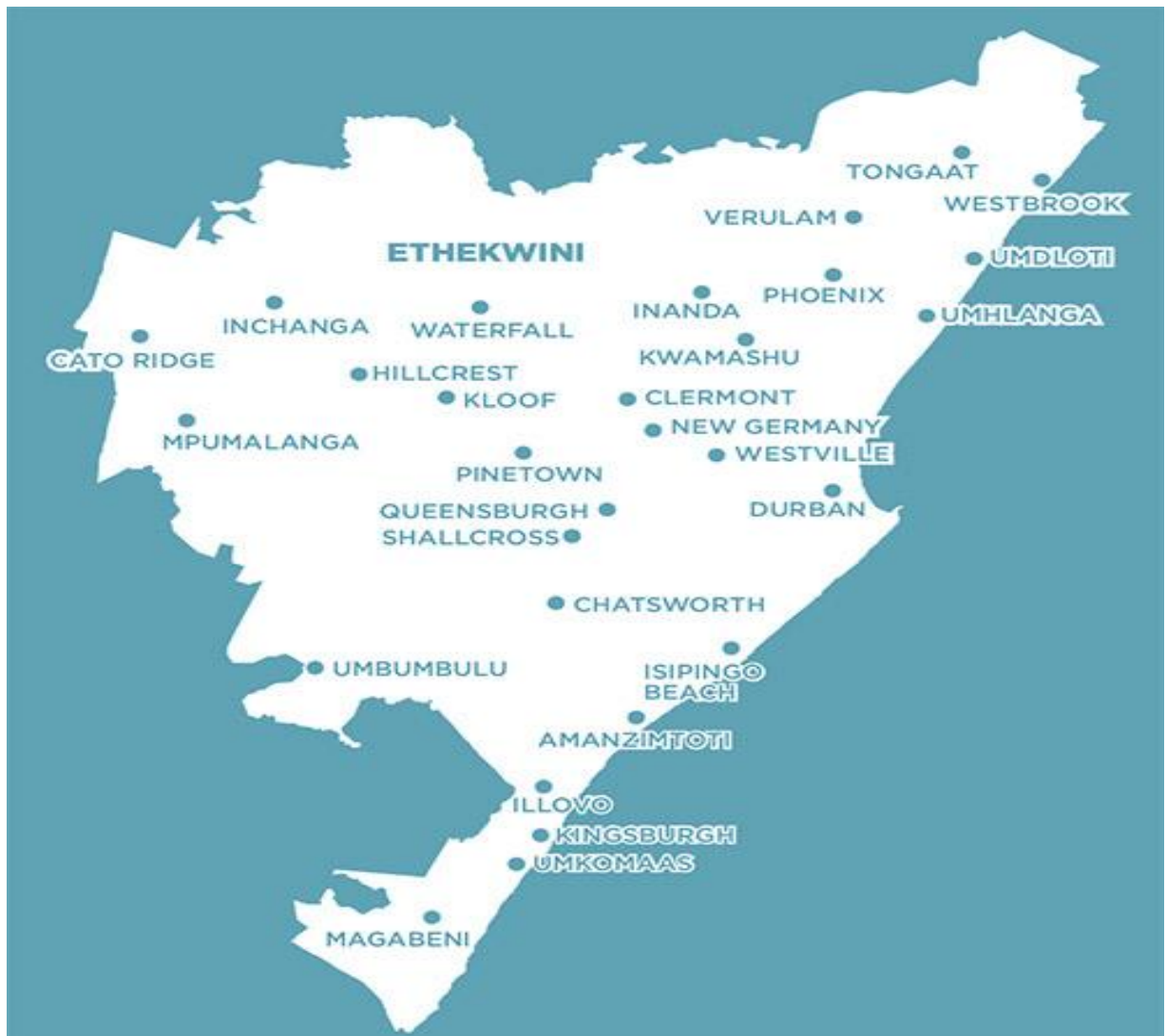


Figure 3.5: Map showing eThekweni Primary Health Care clinics (EThekweni Municipality 2011: 74)

3.8 CODEBOOK FOR DATA DEFINITION

Immediately after the sampling process a codebook which identifies and defines each variable in the study was developed (Burns and Grove 2009: 438). The codes, as detailed in the codebook, were used right from data collection till the end of reporting in order to ensure that there was no link between the information on the datasheets and the data sources. This was done in order to safeguard the study's participants by ensuring confidentiality and anonymity. The PHC clinics included in the study were all allocated codes as detailed in Table 3.2. All the study participants (pregnant women), the maternity case records and observations were assigned code numbers for identification purposes as follows:

- Participants (pregnant women): 1-3 or 1-5 at each PHC depending on the number of interviews done in each clinic.
- Observations (five days spent at each PHC clinic): day 1-5.
- Maternity case records (100 at each PHC clinic): Record 1-100.

Table 3.2: Coding of the Primary Health Care clinics

HEALTH AUTHORITY	SUB-DISTRICT	PHC FACILITY
KZN Department of Health (Province)	SOUTH	PS1
		PS2
	NORTH	PN1
		PN2
	WEST	PW1
		PW2
EThekweni Municipality	SOUTH	MS1
		MS2
	NORTH	MN1
		MN2
	WEST	MW1
		MW2

3.9 SAMPLE AND SAMPLING TECHNIQUE

A variety of sampling methods was used, depending on the population required for a specific type of data collection for a specific phase of the study. Sampling is the process of selecting a portion of the population to represent

the entire population so that inferences about the population can be made (Polit and Beck 2012: 339). The population for the study consisted of the PHC clinics, various processes and procedures in the PHC clinics for implementation of the BANC approach, maternity case records and pregnant women. Burns and Grove (2009: 243) describe several concepts of sampling theory and only the elements that are relevant for sampling in quantitative designs were considered for the quantitative part and those relevant for a qualitative design were considered for the qualitative part of the study. These included population elements, sampling criteria, sampling errors, sample frames and sampling plan. The sample size for the quantitative strand was determined by the formula that sample size = z^2pq/d^2 (z confidence limit of 95%, p prevalence, q 1-p and d sampling error of 5%) (Araoye 2003). The sample size for the qualitative strand was guided by data saturation.

3.9.1 Identification of study area sites

The site sampling frame comprised all 102 PHC clinics in eThekweni district. However, the target population of PHC clinics comprised only those 32 PHC clinics providing ANC services and implementing the BANC approach attended by at least 200 pregnant women per month. Sampling commenced with stratifying the PHC clinics into two strata, those that were controlled by the eThekweni municipality and those that were controlled by the KZN Department of Health (Provincial). This was followed by selecting all the PHC clinics in each stratum that were providing ANC services, implementing the BANC approach, and recording 200 or more ANC attendances per month. These clinics were stratified according to the three sub-districts and comprised the sampling frame for the study sites (PHC clinics).

A sample of two PHC clinics per health authority was randomly selected from each stratum (sub-district) to give a sample of 4 PHC clinics per sub-district and a total of 38% (n=12) PHC clinics for the entire study. Whilst this sample ensured that there was equitable representation of the PHC clinics under the control of both health authorities, it also ensured equitable representation of all the sub-districts. This enhanced the generalisability of the study's findings.

Figure 3.6 provides a presentation of the various steps followed in the sampling of PHC clinics that were included in the study.

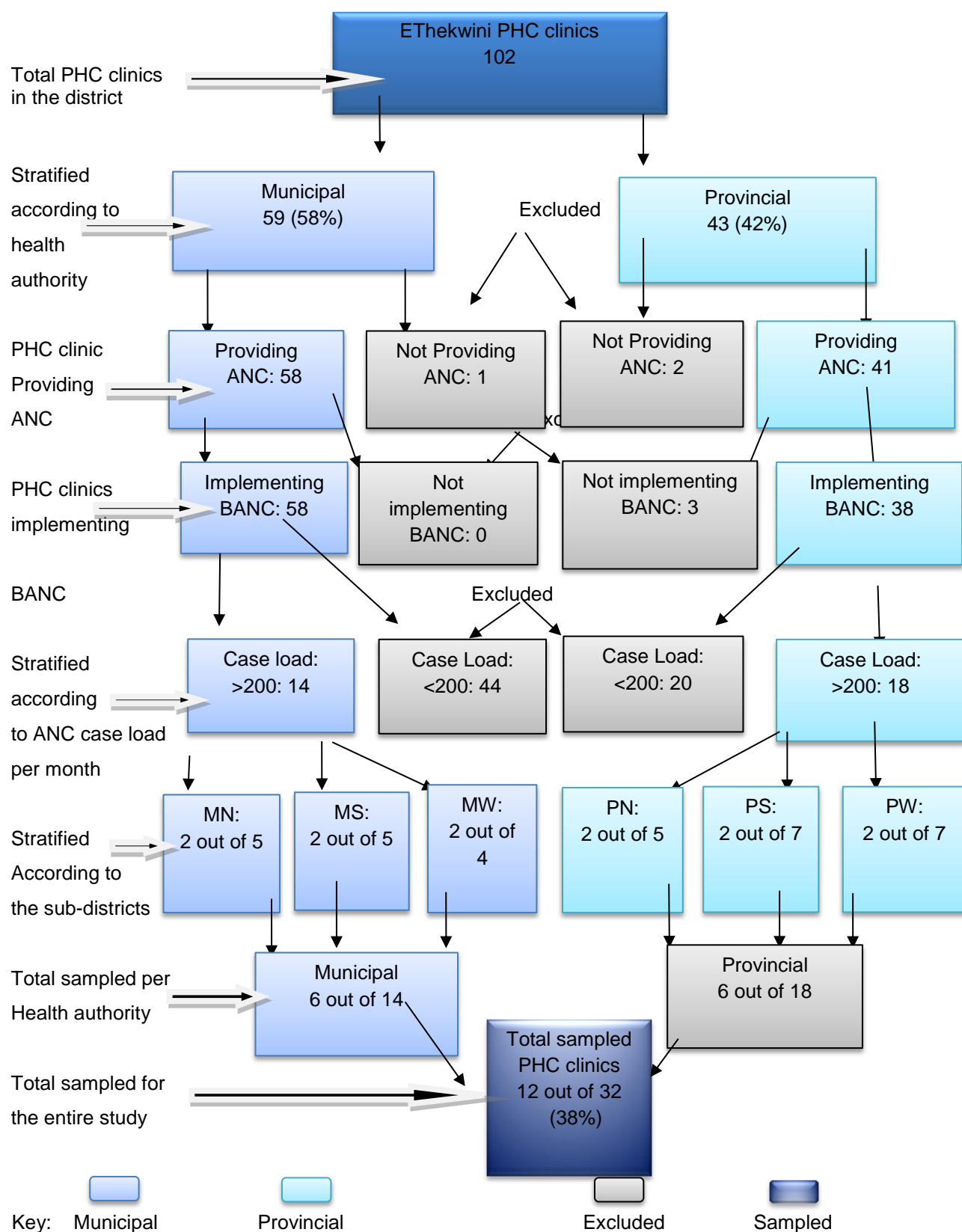


Figure 3.6: Schematic presentation of the steps followed to identify the Primary Health Care clinics

Inclusion criteria

- Only the PHC clinics that were providing the ANC services and were implementing the BANC approach.
- Only PHC clinics with the total pregnant woman caseload of 200 pregnant women or more per month.

Exclusion Criteria

- All PHC clinics that were not providing ANC services and were not implementing the BANC approach.
- All PHC clinics with the total pregnant woman caseload of less than 200 pregnant women or more per month.
- All PHC clinics that were used for the pretesting of data collection instruments and procedures.

3.9.2 Sampling for observations (Quantitative strand)

Observational sampling, which concerns the selection of behaviours or conversational segments to be observed, is done to ensure that representative examples of behaviours are obtained without having to observe for prolonged periods of time (Polit and Beck, 2012: 436). Researchers are required to decide how, when, and how long the observational instrument will be used.

The researcher used event rather than time sampling as this type of sampling enhanced the representativeness of the observed behaviour, allowing the researcher to observe situations in their entirety rather than being fragmented into segments which could cause certain events to be missed (Polit and Beck, 2012: 437). The researcher and three research assistants remained at various work stations where they each observed the staff in operation noting how the pregnant women were attended to, procedures and various operations performed including the interaction between the clinic staff and the pregnant women. An observation tool in the form of a checklist was used to

collect data. A section was contained in the checklist to record narrative observations.

With regards to time sampling the researcher remained in each PHC clinic for approximately one week during which time the researcher spent a total of eight hours daily in each clinic which was a total duration of time that the majority of PHC clinics were operating.

3.9.3 Sampling of maternity case records for retrospective review (Quantitative strand)

The sampling frame was the maternity case records for the pregnant women who received ANC in the sampled PHC clinics during the time of data collection for the current study (October 2013 to March 2014). Purposive sampling methodology was used to sample the records. Purposive sampling, as described by Polit and Beck (20012: 343), happens when a researcher decides purposely to select subjects who are judged to be typical of the population. Using the purposive sampling method allowed the researcher to selectively and consciously select only the information-rich maternity case records that informed her a great deal about the central focus of the study which was how the BANC was being implemented (Burns and Grove 2009: 355) at the specific PHC clinic. The rationale for the researcher to decide on a purposive sampling method was based on the assumption that some aspects, but probably not all aspects, concerning the management of pregnant women, using the BANC approach, might have been implemented.

The researcher needed to examine the recorded implementation of BANC aspects in order to gain the essential and composite data of how the BANC approach was being implemented (Burns and Grove 2009: 355). The researcher sampled a total of 100 maternity case records from each PHC clinic. Therefore a total of 1 200 maternity case records were reviewed from the 12 PHC clinics included in the study.

Inclusion criteria for maternity records

- The records of pregnant women who had three or more recorded routine ANC visits were included.

Exclusion criteria for maternity records

- Records of pregnant women who had fewer than three recorded routine ANC visits were excluded.

3.9.4 Sampling of pregnant women (Qualitative strand)

The sampling frame comprised all pregnant women who were attending ANC in the sampled PHC clinics during the time of the current study's data collection phase (October 2013 to March 2014). The pregnant women were also purposively selected from the sampling frame. Purposive sampling is described by Polit and Beck (20012: 343) as when a researcher decides purposely to select subjects who are judged to be particularly knowledgeable about the issues under study. The principle of data saturation was used to determine the sample size for the pregnant women.

Data saturation was monitored per PHC clinic. This strategy was used to ensure that data was collected in each of the twelve sampled PHC clinics. Data saturation in one PHC was reached after three interviews were conducted. One to two more interviews were conducted to confirm data saturation. It was important to monitor data saturation between the sampled PHC clinics. This was reached after conducting the interviews in five PHC clinics and confirmed with three PHC clinics. However, the researcher had to confirm data saturation between all the sampled PHC clinics therefore 3-4 interviews were done in the remainder of the PHC clinics. A total of 54 interviews were conducted for the whole study.

Inclusion criteria

- Only pregnant women who were attending ANC in the PHC clinics that were implementing the BANC approach (from October 2013 till March 2014).

Exclusion criteria

- All women with high risk factors and/or conditions requiring urgent referrals to hospitals as they would not have received all their ANC at the PHC.

3.10 PRE-TESTING THE RESEARCH INSTRUMENTS AND PROCEDURES

A pre-test was conducted before the commencement of the main study in order to establish reliability and validity of data collection instruments (Appendix 2). The pre-test was also used to identify whether there was a need to refine the methodology or the data collection processes. The researcher requested seven expert midwives to check the clarity and relevance of every item included in the observation tool, the checklist and the semi-structured interview guide. The expert midwives were all advanced midwives who had been practicing for more than five years and were actively involved in MNCWH services. Two of the experts were nurse educators, one of whom was teaching advanced midwifery and the other teaching basic midwifery, two were operational managers both in charge of PHC clinics, two were working in antenatal care clinics as clinic nurses and one was a coordinator for MNCWH services in eThekweni District and a member of the district specialist team. Two PHC clinics one Municipal and one KZNPA that were providing ANC services and implementing the BANC approach were randomly selected to use for the pre-test.

The first phase of the pre-test involved observations and retrospective record reviews conducted at the two pre-test sites. The researcher remained in each pre-test site for five days observing how the BANC approach was being implemented. An observation tool was used to record the information gathered. The observation tool was divided into three sections as follow Section A: Identification information, Section B: A list of components to be observed and possible findings to generate numeric data (checklist) and Section C: A script consisting of prompts and a series of lines in a table form to use to record narrative data (Appendix 11). The guiding principle was the Four Ps and Three Cs Model, assessing staff performance, planning of

activities skills knowledge and understanding of the health care workers for the BANC approach. Various processes that were carried out in the PHC clinics, the culture that prevailed in the PHC clinics, communications and commitment of clinic staff to the implementation of the BANC approach were observed. Events such as the admission of pregnant women, consultation processes, pregnant women's tests/investigations, management and treatment issues were observed. Twenty maternity case records (ten from each pre-test site) for the pregnant women who were attending ANC at the time of the pre-test data collection were reviewed. A checklist was used to collect information (Appendix 12). This was done to test the validity and reliability of the checklist to be used for record review.

The second phase involved conducting individual semi-structured interviews with two pregnant women from each pre-test site. An interview guide with one grand tour and a few guided tour question was use to guide the interview process (Appendices 13a and 13b). The pre-test interviews were recorded with an audiotape and field notes were also taken. All data collected during the pre-test as analysed and interpreted. The main focus was to check the validity and reliability of the data collection instruments. This is discussed further under research rigor in section of this document. The pre-test results assured the researcher that the research processes and procedures were appropriate for the study. No changes were implemented in the data collection instruments. The pre-test sites, participants, data and results were not included in the main study.

3.11 DATA COLLECTION METHODS, TOOLS AND PROCEDURES

Data collection was done in two phases. Phase one was the quantitative strand of the study and intended to investigate how the BANC approach was being implemented in eThekweni district. The second phase was the qualitative strand of the study and intended to explore the experiences of the pregnant women regarding ANC services that were provided in the PHC clinics that were implementing the BANC approach. The research assistant worked together with the researcher to collect data during the quantitative

phase and all the interviews for the qualitative phase were conducted by the researcher only.

3.11.1 Phase 1: Data collection (Quantitative strand)

The first phase involved an analysis of how the BANC approach was being implemented in the PHC clinics. This phase was divided into phase 1A during which observations of how the BANC approach was being implemented were done and phase 1B during which retrospective record reviews were done.

Phase 1a: Observations

The structured-unstructured dimension of observation was used to ensure that both quantitative (numeric) and qualitative (narrative) data were gathered (Appendix 11). Using the two dimensions allowed the researcher to do a holistic observation of participants, systems and processes (Teddle and Tashakkori 2009: 221). The quantitative dimension assisted the researcher to focus on specific predetermined areas and aspects. The predetermined areas and aspects included following the process map used in the clinic and observing health care workers as they were engaged in various activities such as the reception area where admissions and the registration of pregnant women were done, the observations area where routine observations such as urine testing, checking of blood pressure (BP), weight and height measurements were done, the blood room where various screening tests were done and the consultation room where the midwives were doing the history taking and examinations of pregnant women. In all these areas the focus of observation was on the skill of the provider which was measured against the provision in the maternity care guidelines and BANC Principles of Good Care and Guidelines (NDoH, 2008b; Pattinson 2005b). Communication between the clinic staff and the pregnant women, commitment of staff to their work and culture that prevailed in the PHC clinics were also observed. The qualitative dimension allowed the researcher to take field notes and record as many interactions, behaviours and processes as possible which would have been impossible to predetermine. These included health care workers' human

relations during interactions with pregnant women and responses of pregnant women.

Many researchers use both structured and unstructured observational instruments either sequentially or in a parallel manner (Teddle and Tashakkori 2009: 222) and the researcher in the current study used the instruments parallel with both instruments combined in one tool (Appendix 11). Both the quantitative and the qualitative datasets gathered during this strand were analysed quantitatively. The tool was divided into three parts:

- Identification information and instructions.
- A form with a list of components to be observed and possible findings to generate numeric data.
- A script consisting of prompts and a series of lines in a table form to use to record narrative data (Appendix: 11).

The format used in section 1B was in a form of a checklist with the predetermined statements and anticipated responses (Appendix 12). A checklist is a two dimensional arrangement in which a series of questions, usually with the same response format, is listed along one dimension and response alternatives are listed along the other dimension (Polit and Beck 2012: 417). The script used in section C was a document containing a series of prompts that guided the researcher as what to record (Teddle and Tashakkori 2009: 220). The researcher observed all the processes and systems in the PHC clinic relating to the implementation of the BANC approach. The observations included observing the various categories of health personnel who were involved in implementing the BANC approach, a process known as participant observation. Participant observation may be regarded as a research procedure that is typical of the qualitative paradigm (De Vos, Strydom, Fouche and Delport, 2011: 329).

The participant/process observer continuum

Observations were chosen as the method of gathering data. Data are gathered directly and are not of a retrospective nature when observation is used (De Vos *et al.* 2011: 338).

The four types of participant observation are full observer participant, observer as the participant, participant as an observer and complete participant (Streubert Speziale and Carpenter 2002: 32). Several factors including purpose, length and setting of the study contribute to the researcher's position on the participant observer continuum (Teddle and Tashakkori 2009: 222). The researcher adopted a mixed position of the complete observer and the observer as the participant types of observations. The former allowed the researcher to be a complete observer of the participants' activities with no direct interaction with the participants in some circumstances. The latter type of observer as participant enabled the researcher to potentially interview the participants when the need arose to do so. Streubert Speziale and Carpenter (2002: 165) distinguished between descriptive, focussed and selective types of observation. The researcher combined descriptive and focussed observation, thus the choice of using structured and unstructured dimensions. The researcher anticipated that, as the observation process proceeded, it might become necessary to conduct selective observations in order to gain more clarity on specific aspects of the implementation of the BANC approach. Integrating all three types of observations enabled the researcher to gain in-depth insight into the manifestation of reality hoping that the practice framework developed, on the basis of the combined findings, would be focussed (De Vos *et al.* 2011: 330).

De Vos *et al.* (2011: 329) distinguished between disguised and undisguised observations. The researcher did not disguise her presence. However, in order to counteract the possibility that the researcher's presence could cause the participants to change their usual behaviour, the researcher spent some time in the PHC clinics. This enabled the staff in the clinic to get accustomed to her presence, to minimise the potential Hawthorne effect. With time the

participants forgot that they were being observed and reverted to their normal behaviours and habits (Polit and Beck 2012: 264). The researcher spent a minimum of one week in each PHC clinic before commencing the observations. During this time the researcher conducted information giving sessions, identified focus points where to do observations and space for conducting the interviews.

Being at each study site for some time before commencing the observations also afforded the researcher an opportunity to familiarise herself with the surroundings. The clinic staff and pregnant women were informed about the observations during the information giving session. In order to counteract the Hawthorne effect they were not given the exact specification regarding the observation schedules such as what was to be observed, the times, frequency and duration of observations at particular points in the clinic.

Duration of observations

Although the researcher spent two weeks in each PHC clinic included in the study, the total period of doing the observations was one week per PHC site because no observations were done during the first week. The first week was used by the researcher to familiarise herself with the PHC clinic and to make any necessary arrangements for all the data collection procedures. A total of six months (24 weeks) was required to complete the observations in the twelve PHC clinics included in the sample. The observations were done from October 2013 to March 2014.

Data collection instrument

One observation tool was used to record both quantitative and qualitative data (Appendix 11). The observation tool was adapted from the checklist for maternal health as detailed in section 8 of the supervisory manual (KZN Department of Health 2010: 130-136). The checklist was adapted to be in line with the Four Ps and Three Cs Model of TQM as a theoretical framework that was used to guide the study.

Data collection process

The researcher and four research assistants conducted the observations. The whole team gathered in one PHC clinic at a time and remained there until all observations were done. One research assistant remained in the reception area throughout the observation period observing the pregnant women as they arrived at the clinic and their interactions with the staff members working in the reception area. The second research assistant conducted the observations in the following work stations: observation room, blood room, injection room and counselling room. A minimum of two hours was spent in each work station. The sequence of moving from one workstation to the other was influenced by the flow of pregnant women in each PHC clinic. Two research assistants traced the pregnant women from arrival till departure from the clinic observing if clear process maps, indicating the implementation process of the BANC approach, were followed in the PHC clinics.

The researcher remained in the consultation rooms observing the midwives and advanced midwives as they consulted the pregnant women. All the midwives and advanced midwives involved in ANC were observed. The time spent with each midwife or advanced midwife ranged from two to four hours. This was influenced by the number of midwives and advanced midwives available to observe and the extent of time taken by the midwife or advanced midwife to complete the consultation process for one woman. The researcher remained with one midwife or advanced midwife from the beginning to the end of consultation with a pregnant woman before moving to the next midwife or advanced midwife. Where possible each midwife or advanced midwife was observed performing a first visit and a repeat visit consultation.

Sample size

The sample size was as follows:

- All health care workers involved in providing ANC services by the end of the five day period were observed. The sample size was determined by the number of staff members available in the PHC clinics.

- All pregnant women who arrived in the reception area for registration and for enquiries were observed. The sample size was determined by the number of pregnant women who arrived at reception in the twelve clinics.

A total of 20 consultation processes done by the midwives or advanced midwives were observed at each PHC clinic, 10 were first visit consultations and 10 were repeat visit consultations. Of these one first visit consultation and one repeat visit consultation per midwife/advanced midwife were observed. A total of 240 consultations for the entire study were done, 20 at each of the 12 PHC clinics.

One group counselling session per lay counsellor was observed. Sample size was informed by the number of lay counsellors and the number of days that the PHC clinics were providing ANC services.

Twenty observations were done of each activity during five days at each work station (observation, blood and injection rooms). A total of 240 observations were done for activities performed in each work station in the 12 PHC clinics.

Phase 1b: Retrospective record reviews

Retrospective record reviews were done for the maternity case records that were used in PHC clinics to record all consultations of the pregnant women, including test and procedures. There are four national documents that were used to guide the researcher in conducting this phase of data collection. These are the BANC Handbook (Pattinson 2007), the Principles of Good Care and Guidelines (Pattinson 2005a), the Maternity Care Guidelines (NDoH 2007a: 18-31) and the Guidelines for Implementation of the New Maternity Case Records (NDoH 2008b: 3-5). These four documents are all in line with each other and they offer guidance on how ANC should be conducted and how recording in the maternity case records should be done. A checklist adapted from 'The quality check for Antenatal Record' was used for the record review (Pattinson 2005b: 49-50), as shown in Appendix 12.

3.11.2 Phase 2: Data collection (Qualitative strand)

The second phase of the study involved semi-structured interviews conducted with the pregnant women. Qualitative data were collected by exploring the experiences of the pregnant women regarding the ANC that they received at the PHC clinics that were implementing the BANC approach. The researcher hoped for the data to complement the data gathered during the quantitative strand in phase one of the study and for the two datasets to guide the development of a tailored practice framework for implementing the BANC approach in the eThekweni district. The researcher prepared and used a semi-structured interview guide to keep the discussions during the interviews focussed (Appendices 13a and 13b).

A semi-structured interview is described by Liamputtong and Ezzy (2006: 56) as a form of in-depth interview which aims to explore the complexity and nature of meanings and interpretations that cannot be examined using positivist methodologies. The individual semi-structured interviews allowed the pregnant women to share their personal views and experiences without fear of intimidation by the rest of the group. This enabled the women to share even information that was personal, sensitive or confidential to them during the one-to-one interviews.

The interviews lasted from 30 to 45 minutes. This time range allowed the researcher not only to ask the predetermined questions, but also to obtain rich detailed answers as the women narrated their experiences about the BANC approach in a way that suited them. Semi-structured interviews tend to be flexible, responding to the direction which the interviewees take during the interviews. This might require adjusting the emphasis of the research as the result of significant issues emerging during the course of the interviews. Thus, although the researcher is able to direct the conversation, by having predetermined questions on the intended topic, it remains possible to ask further questions as needs might arise. The interviewer is able to guide the interview in a required direction. This type of interview ensures that the interviewer obtains all the information required by affording the interviewer the

opportunity to probe, and to request clarity. The method is more relaxed and comfortable for the respondents but can still be contained and focussed. It gives the interviewees freedom to respond in their own words and to provide as much detail as they wish, and to offer illustrations and explanations.

The limitations of the one-to-one interview are that the interview requires that the interviewer must be knowledgeable about the subject, be able to probe and to exercise good control as interviewees' responses might be irrelevant to the topic. In the absence of these qualities, the semi-structured interviews might get out of control or move towards the wrong direction, failing to achieve the purpose. The researcher, with her experience and skills as an advanced midwife and manager, was able to conduct and control the semi-structured interviews. All 54 interviews were conducted by the researcher in order to guard against all that is stated above regarding the interviews.

Data collection instrument: semi-structured interview guide

The semi-structured interview guide consisted of a grand tour question and a few predetermined open ended guided tour questions. The interview guide was prepared in the two local languages which are English and IsiZulu (Appendices 13a and 13b). This was done with an assistant of a qualified language translator (Appendix 4) to ensure the interview guides in both languages were exactly the same with no messages altered or lost during translation. The guide assisted the interviewer to keep the interview focussed and to ensure that all the areas that the researcher intended to cover were indeed addressed. The semi-structured nature of the interviews allowed the participants to discuss their experiences in a manner that was comfortable to them and to discuss only the information that they were free and comfortable to discuss. This ensured that the participants did not feel pressurised and that they were relaxed during the interviews. No interviewee was coerced to answer any specific question or to provide information than she felt uncomfortable sharing with the interviewer.

Probing was done for some questions, depending on the information received from the participants, to allow clarity and in-depth information and to iron out ambiguity. This assisted the researcher to ensure that all the information that she intended to cover was obtained and this made data analysis easier. The researcher used reflection during the interviews by now and then repeating what the participant had said and or confirming what she understood the participant meant to convey. This assisted to confirm that the researcher understood the correct message from the response as was intended by the participants. This is one simple method of confirming the accuracy of qualitative data.

Table 3.3 presents a summary of the data collection procedures.

Table 3.3: Summary of data collection procedures

Phase	Purpose	Method	Instrument	Storage	Population
One: A	Assess implementation of the BANC approach in the PHC clinics	Observations	Observation Tool: Checklist and Field notes section	Checklist and Field notes	All staff involved in provision of ANC services in the PHC facilities
	Analyse pregnant women's' ANC records for evidence of application of the BANC principles of good care and guidelines	Retrospective record review	Checklist	Checklist	Pregnant women ANC records
Two	Describe the perceptions of pregnant women regarding ANC that was provided in the PHC clinics that were implementing the BANC approach	Individual interviews	Semi structured Interview guide	Audiotape and field notes	Pregnant women

3.12 DATA STORAGE

The researcher used both the voice recorder and field notes to collect and store data. The voice recorder was used to record the interviews with the pregnant women in order to ensure that voices of the participants were kept

alive to convey the actual verbatim message of the participants. Field notes were used to support the recorded information and to record non-verbal cues. The participants were advised during the information sharing session that the interviews would be recorded and field notes taken and were reminded again before each interview commenced.

3.13 DATA ANALYSIS

The study consisted of two data sets: quantitative data and qualitative data both of which needed to be analysed and interpreted in order to conclude study findings and to develop a tailored practice framework during the final stage of the study.

3.13.1 Quantitative data analysis

Four of the six steps of quantitative data analysis as described by Burns and Grove (2009: 461) were followed. These included 1) preparation of data for analysis, 2) description of the sample, 3) testing of reliability of measurement and 4) exploratory analysis of the data.

3.13.1.1 Preparation of data for analysis

In this step data coding and cleaning was done. The first step after data collection was to embark on a data coding where data was transformed into symbols (Polit and Beck 2012: 642). Data was thereafter captured into an electronic spread sheet. The next step involved data cleaning process as part of data quality check to ensure the accuracy and integrity of the data. Copies were made of the original data to ensure that during the data cleaning exercise, the original data were saved and a validity check could be run to identify the changes between the cleaned data and the original data. This process involved checking the data line by line and looking for any discrepancies, inconsistencies, inaccuracies and omissions that did not make sense. The changes were categorised as either minor or major changes. Minor changes included “not applicable” observations not captured appropriately for an example data captured on elements that were not

applicable. Major changes would include all records with too many gaps which would need to be removed. There were no documents that were identified as requiring major changes.

3.13.1.2 Description of the sample

This step included obtaining a complete picture of all quantitative data collected (Burns and Grove 2009: 462). Comparisons were made between data collected from the different PHC clinics and also between the municipal and KZN Department of Health PHC clinics in order to ensure that the data obtained represented the study population. Description of the study was particularly important because the researcher intended to compare the findings between the PHC clinics managed by two healthcare authorities. Therefore, confirmation was done that data collected from the two healthcare authorities were equivalent in ways important to the study in order to justify continuing with the study (Burns and Grove 2009: 462).

3.13.1.3 Testing the reliability of measurement

According to Burns and Grove (2009: 222), a measure is a reliable measure if it gives the same results each time the same situation or factor is measured. Although this was ensured first by doing a pre-test and close monitoring throughout data collection, it was important that additional evaluation was done before data analysis.

3.13.1.4 Exploratory analysis of the data

All data collected were examined descriptively in order to become as familiar as possible with the nature of the data. Each variable was examined in order to establish that data were normally distributed and not skewed (Burns and Grove 2009: 463).

The data from the quantitative analysis were captured and subsequently analysed using the version 21.0 of the Statistical Package for Social Sciences (SPSS) computer program.

Descriptive statistics, including means and standard deviations, where applicable, were used to summarise the data. Frequencies are represented in tables or graphs. The Pearson Chi-square tests were used where appropriate. A Chi-square goodness-of-fit-test is a univariate test, used on a categorical variable to test whether any of the response options were selected significantly more/less often than the others. Under the null hypothesis, it was assumed that all responses were equally selected (Burns and Grove 2009: 499). The chi-square test of independence was used on cross-tabulations to see whether a significant relationship existed between the two variables represented in a cross-tabulation of specific variables. Wilcoxon Signed Ranks test, a non-parametric test, was used to test whether the average value was significantly different from a value of 3 (the central score). This was applied to questions where responses were recorded on a Likert scale.

Data from the quantitative data set were analysed in two forms. The first analysis included a composite analysis of the entire data set to assess how the twelve PHC clinics as a whole were performing and secondly comparisons were made between the two health authorities.

3.13.2 Qualitative data analysis

Qualitative data analysis was performed simultaneously with data collection in order to detect data saturation. Data were organised and stored using the ATLAS TI program. The ATLAS TI program allowed the researcher to capture, organise and store data into categories and sub-categories, themes and sub-themes and to assign codes. This arrangement of data facilitated understanding, interpretation and creation of the meaning of the qualitative data.

Tesch's open coding approach was used to analyse the qualitative data. Tesch's approach comprises eight steps of data analysis (Creswell 2009: 185-187). The researcher listened to audiotapes and also read and re-read all the transcriptions to get a sense of the whole data and some ideas were jotted down as they emerged. One transcript of the interview was picked up at a

time from the field notes and read and re-read; underlying meanings of the data were sorted out and jotted down until the researcher fully understood the meaning of the data. Thereafter, the data were analysed and systematically explored to generate meanings (Tesch 1992: 141). The voice recorded responses were listened to again and again thereafter transcribed and compared to the transcribed data. Important quotations from the participants' responses were identified; in vivo coding was used in order to present the experiences as lived by the interviewees. Information from the field notes was compared to that on the audiotape to make sure that all data had been captured correctly. Themes according to which to organise data were predetermined, guided by the theoretical framework that was guiding the study. The data were coded in order to allow for organising it into sub-themes which were grouped according to already predetermined themes. The researcher focussed on groundedness and density of data by describing how many times different categories appeared in the data and linking the codes to create meaning. The Four Ps and Three Cs were used to organise data so as to discover which aspects of the TQM Model were already taken care of in the current status and if there were any aspects lacking that still needed to be addressed.

3.13.3 Mixing of data from the two strands (Quantitative and qualitative)

The researcher merged data after the analysis to compare results as the study design was convergent. The researcher collected quantitative and qualitative data concurrently. The two data sets were analysed independently using analytic approaches suited for each strand. The results of the two data sets were then compared. It is important that the researcher should specify the dimensions by which to compare the results from the two data sets. In the current study the four Ps and three Cs, as described in the TQM Model, were used to guide the comparison of the quantitative and qualitative results and the model was used to guide presentation of the comparison. Further analysis included triangulation and transformation of the data sets and

interpreting how the merged results answered the research questions and led to the achievement of the study's objectives.

3.14 TRIANGULATION

All data gathered during the study were triangulated and the results of triangulation are presented in Chapter 5. Triangulation is defined as a process and/or outcome which involves the combination and comparison of multiple data sources, data collection and or analysis procedures, research methods and inferences that occur at the end of the study (Teddle and Tashakkori 2009: 32-33). Triangulation was used to add richness to the study and to substantiate selected aspects of text. Bergman (2008: 22-23) argued that triangulation does not refer to mixing of quantitative and qualitative data but to checking the validity of an interpretation based on a single source of data by recourse to at least one further source that is of a strategically different type. The researcher decided to use the process of triangulation with an idea that drawing data from sources that have different potential threats to validity would possibly reduce the chances of reaching false conclusions (Bergman 2008: 23). Different forms of triangulation can be distinguished (Bergman 2008: 22-27): triangulation as validity checking, indefinite triangulation and triangulation as seeking complementary information. In the current study data from the observation was triangulated with that from observations and further with that from the interviews in order to achieve two purposes in line with Bergman's stipulations which are triangulation as validity checking and triangulation as seeking complementary information.

3.15 DATA CONVERSION OR TRANSFORMATION

During data analysis, data conversion/transformation was done for the qualitative strand by quantifying it to allow the researcher to do a deeper analysis of the phenomenon under study (Teddle and Tashakkori 2009:27).

3.16 DATA INTERPRETATION

Once data analysis had been completed it was important that the researcher should develop inferences and meta-inferences by interpreting the study's findings; looking across the quantitative and the qualitative results and making an assessment of how the information addressed the mixed method question in the study (Creswell and Plano Clark 2011: 212). The inferences included conclusions or interpretations drawn from each strand whilst the meta-inferences were drawn across the quantitative and qualitative strands.

3.17 RESEARCH RIGOR

The researcher ensured rigour for both qualitative and quantitative methodologies as the two strands are both incorporated in the mixed method design. The most important steps in mixed methods studies is when the results from the study's quantitative and qualitative strands are incorporated into a coherent conceptual framework that provides an effective answer to the research question (Teddlie and Tashakkori 2009: 286). The quantitative data required the researcher to address reliability and validity, whilst the qualitative data require the researcher to ensure trustworthiness. These aspects are incorporated in the conclusions and interpretations that are made on the basis of collected data in a mixed method study and are referred to as inferences and are divided into process, quality and transferability inferences (Teddlie and Tashakkori 2009: 287).

- ***Inference process*** is described by Teddlie and Tashakkori (2009: 287) as the process of making sense out of the results of data analysis which includes the entire dynamic journey from idea, to data and to results in an effort to make sense of data by connecting the dots. The researcher in the current study stated clearly in the discussion of the results all the steps she followed to create meaning out of the relatively large amount of data collected through observations, retrospective record reviews, and semi-structured interviews.

- The aspects of internal validity and trustworthiness are incorporated in the term ***inference quality***, defined by Teddlie and Tashakkori (2009: 27) as referring to the standard for evaluating the quality of conclusions that are made on the basis of both quantitative and qualitative findings. The researcher in the current study ensured inherent quality by observing and keeping track of all processes and procedure required for conducting mixed method studies and keeping accurate records of all the steps followed during the entire research process in one composite document.
- ***Inference transferability*** is an umbrella term that incorporates the terms external validity for quantitative studies and transferability for qualitative research and is measured by the degree to which conclusions from a mixed methods study might be applied to another setting, people, time periods or contexts (Teddlie and Tashakkori 2009: 27). The researcher in the current study ensured inference transferability by keeping an accurate record of all research procedures establishing an audit trail. In discussing the results and in spelling out the recommendations, the researcher specified the possible boundaries of transferability of the study's findings. Transferability was also made possible through the generalizability of the results of the quantitative strand and the rich and inclusive understanding of the phenomenon created by the qualitative strand (Teddlie and Tashakkori 2009: 311).

3.17.1 Research rigor (Quantitative strand)

The researcher ensured that strategies to strengthen the quantitative aspects of the study and ways to enhance rigour were adhered to in order to strengthen the inferences that could be made about cause and effect relationships.

3.17.1.1 Validity and reliability

Polit and Beck (2012: 452) described reliability as the accuracy and consistency of information obtained by a study which is often associated with the methods used to measure the research variables. Reliability was ensured first by inviting the midwifery experts to render inputs into the data collection instruments. Conducting a pre-test at two PHC clinics that were implementing the BANC approach, one from each of the two healthcare authorities, also ensured reliability of the data collection instruments.

Inputs of the statistician were sought to determine whether the construct validity was appropriate for statistical purposes. Reliability was ensured by collecting data from the clinics that were implementing the BANC approach and the pregnant women who were experiencing this care in these PHC clinics. This also ensured content validity of the study in that the findings were unbiased and well-grounded since the information was gathered from participants who were directly affected by the BANC approach. The validity of an instrument measures the concept in question and confirms that the concept is accurately measuring what it intends to measure (De Vos *et al.* 2011: 160). Content validity examines the extent to which the instrument questionnaire includes all the major changes relevant to the construct being measured (Burns and Grove 2009: 381). Face validity verifies that the tool looked like it was valid and gave the appearance of measuring what it was supposed to measure (Burns and Grove 2009: 381). All data collection tools were structured to obtain the required information and the development was based on existing documents to ensure that the tools appeared professional and uncomplicated to complete. The data collection tools were tested for face validity during the pre-test.

3.17.1.2 Homogeneity

The researcher ensured that participants were homogeneous in order to allow for quantitative findings to be interpretable (Polit and Beck 2012: 287). During sampling, the researcher checked for similar and different characteristics. It is

for this reason that the researcher included PHC clinics from both healthcare authorities in the study and only included the PHC clinics that were implementing the BANC approach and that recorded at least 200 ANC attendances per month.

3.17.1.3 Attrition

To safeguard against attrition the researcher recruited more participants than those actually required for the sample in anticipation that some participants could not be available for data collection. It is possible that pregnant women might give birth before the date of the interview or develop complications and be transferred to a higher level of care. Where possible, the participants who agreed to take part on the study were interviewed on the same day as the information session, except for the few women who preferred to make appointments for their interviews on different days. The interview dates were aligned to the women's next routine clinic appointments.

3.17.2 Research rigor (Qualitative strand)

As qualitative research has an element of subjectivity, and is open to criticism, it is important that the study and the findings should provide evidence of validity and reliability (Polit and Beck 2012: 174). Research rigour in qualitative research is associated with openness, relevance, epistemological and methodological congruence, scrupulous adherence to a philosophical perspective, thoroughness in collecting data and consideration of all the data during the analysis process and the researcher's self-understanding (Burns and Grove 2009: 54). Procedural rigour was ensured through precise documentation of all steps and processes taken to conduct the study and how the decisions were reached till the establishment of an audit trail. Interpretive rigour was ensured by basing the data analysis on the four Ps and Three Cs TQM Model for total quality management as the theoretical framework that was used to guide the study and constantly adhering to the strategies that were inherent within the qualitative design during the data interpretation stage.

The researcher used a voice recorder to ensure that data were accurately recorded and representative of the data as a whole. Reflexivity was ensured through in vivo coding of data to prevent bias. Verbatim translation of data included non-verbal cues displayed by the study participants during the interviews. Methodological congruence was ensured by conducting extended field work and data were collected for an extended period of time to ensure accuracy. An audit trail ensured that records were available about the rigorous development of the decision trail by reporting all decisions involved in the transformation of data to the theoretical scheme.

Rigour was also ensured by ensuring trustworthiness of the study processes and data. Lincoln and Guba (1985) maintained that trustworthiness of a study is important for evaluating its worth. Lincoln and Guba (1985: 289) suggested there is an alternative to validity and reliability that would provide the evidence for a decision trail and trustworthiness to be assured within qualitative research. Trustworthiness refers to the extent to which a study is worth paying attention to, worth taking note of and the extent to which others are convinced that the findings are to be trusted (Babbie and Mouton, 2001: 276). Lincoln and Guba (1985: 289) initially suggested four criteria for developing the trustworthiness of a qualitative inquiry which are credibility, dependability, confirmability and transferability. Later on Guba and Lincoln added authenticity (Lincoln and Guba 1985).

Credibility is described by Lincoln and Guba (1985) confidence in the 'truth' of the findings. The researcher ensured credibility of data by recording all the interviews with the study participants and using their direct quotations and narratives during data reporting. Field notes were generated on site during observation to ensure that the researcher recorded the observed information and incidences whilst still fresh in her mind. This was ensured by making sure that data from the record reviews were taken "as is" and the researcher remained as neutral as possible during the interviews so as to ensure that the researcher did not influence the responses by the participants. The researcher used in vivo coding.

Dependability is described as the ability to show that the findings are consistent and could be repeated (Lincoln and Guba 1985). The researcher ensured dependability by conducting a pre-test study on the research process and data collection tools to ensure that they were reliable.

Confirmability is the degree of neutrality or the extent to which the findings of a study are shaped by the respondents and not researcher's bias, motivation, or interest (Lincoln and Guba 1985). In an attempt to ensure confirmability the researcher ensured honest reflectivity, was open and constantly aware of how her background, beliefs, life experiences and professional and political views affected and influenced her involvement, remained neutral and did not allow her personal feelings to crowd her responsibilities as a researcher. Data collected were stored as evidence for a maximum period of five years to ensure an audit trail.

Transferability is the ability to show that the findings have applicability in other contexts (Lincoln and Guba 1985). The researcher ensured transferability of the findings of this study by providing sufficient descriptive data in the research report so that whoever might wish to repeat the study could evaluate the applicability of the data to another context.

Guba and Lincoln (1989) developed **authenticity** criteria that could be used to evaluate the quality of the research beyond the methodological dimensions. The researcher attempted to ensure authenticity by using direct narratives by the study participants. This ensured that the feeling tone of the study participants could be conveyed as it was lived/experienced by them.

3.18 ETHICAL CONSIDERATIONS

Burns and Grove (2009: 184) highlight that nursing research does not only require expertise and diligence in the research process but also honesty and integrity, thus the importance of conducting research ethically. In the current study ethical approval was obtained from the university's Institutional Research Ethics Committee (Appendices 1 and 2). Permission was requested from (Appendices 6a,7a and 8a) and granted by (Appendices 6b,

7b and 8b) the provincial and district offices of the KZN Department of Health and the municipality to conduct the study and to access statistics of PHC ANC attendance from the District Information System. During sampling the researcher sought the assistance of a statistician to guide the sampling and sample size for the quantitative part of the study (Appendix 3). This was done in order to ensure that a scientifically representative sample was obtained to allow generalisation of the study's findings throughout the eThekweni district.

Polit and Beck (2012: 167) stated that care should be exercised to ensure that the rights of humans are protected whenever humans are study participants. The researcher ensured that the three ethical principles, on which the standards of ethical conducts in research are based, as described by Polit and Beck (2012: 170), were adhered to. These included: beneficence, respect for human dignity and justice. Informed consent and participant authorisation are described by Polit and Beck (2012: 176) as one particularly important procedure for safe guarding the participants and protecting their rights to self-determination. In the current study, only participants who had signed informed consent forms were interviewed (Appendices 10a and 10b). Permission was requested from the pregnant women to use their maternity case records for retrospective record reviews (Appendices 10a and 10b). In order to ensure the right to self-determination and the rights to full disclosure an information session was conducted for all study participants to provide information and address questions about the study. In addition to this, all prospective participants were given information letters to read at their leisure to get more clarity about the study (Appendices 10a and 10b).

The pregnant women were first addressed as a group in the waiting area when they came for their routine clinic visits. During the group session, women were given general information about the study and requested to meet the researcher on a one-to-one basis for more detailed information about the study. Information letters were given to all women during the group session in order to provide more clarity about the proposed study. The information letters and consent forms were written in English and IsiZulu which are the

two main official languages used in the eThekweni District (Appendices 10a and 10b). The one-to-one session was conducted with the women who were interested to join the study whilst they were awaiting their ANC consultations to address individual concerns. Thereafter, participants were requested to sign consent forms and where possible interviews were conducted on the same days.

The interviews either took place on the same day as the information giving session for those women who were willing to be interviewed on same the day. Otherwise interviews were deferred to the women's next routine ANC clinic visits. The participants were advised that they were allowed to withdraw from the study at any point if they wished to do so. High risk pregnant women were not included in the study. The midwives providing ANC were asked to double check before conducting any interview whether it would be safe to interview the woman and that the interview would not cause any delay in initiating any urgent treatment or management for the women. The researcher confirmed with the participant whether she was comfortable and willing to take part in the study each time she needed to contact a woman. The consent was renewed as the needs arose. All participants were assured about anonymity and confidentiality. All the above aimed at ensuring the principle of beneficence which, according to Polit and Beck (2012: 170), is one of the most fundamental ethical principles imposing a duty on the researcher to minimise harm and maximise the benefits.

The right to autonomy and confidentiality was maintained in data handling to ensure that there was no untoward association of individuals with data. All interviews were conducted in privacy. Linked anonymity was observed during the study should it happen that the researcher required to revisit the participant to get more information or clarity on data collected. The data collection tools consisted of a top sheet containing the contact details of the study participants (Appendices 13a and 13b). The top sheet was removed immediately after the first data collection meeting with the participant and was kept under lock and key. The top sheet was linked to the interview sheet with

the participant's number but only the researcher had access to this information which was kept under lock and key.

The nature of the study had no potential to expose the participants to any physical harm. However, the researcher tried to constantly remain alert to any potential risk. The researcher anticipated the possibility of emotional incidences for some participants. Discussing past experiences had the potential of triggering extraordinary emotional memories for some participants. In her capacity as a professional nurse, the researcher was prepared to deal with such situations. Arrangements had also been made that should this fail the researcher would refer the participant for professional services. Arrangements were made with counsellors and the midwife in the PHC clinics during briefing sessions to assist if the researcher fails to comfort the pregnant women should the need arise. Fortunately no such situations were experienced throughout the study. The researcher ensured that all written information that was available in English and IsiZulu (information letters, consent forms and interview guides) carried the same intended messages by translating all the documents from English to IsiZulu and back to English again in order to ensure that messages were not lost or altered. A professional translator was used to verify and approve all translated documents (Appendix 4).

The researcher was aware that her role as a researcher would inform how she reacted to different situations. She decided beforehand that should she observe a gross omission or incorrect management of the pregnant women; she would bring this to the attention of the person in charge in a polite and professional manner so that corrective measures are taken to prevent harm to the pregnant woman. The research assistants were qualified professional nurses with a midwifery qualification and experience. This facilitated their understanding of the research procedures and information. The research assistants had no personal relation with the study sites and or participants. A written agreement was signed between the researcher and the research

assistant to make sure that they abide with the ethical principles of research applicable to them (Appendix 9).

All data collection sheets were transported from the research sites in sealed envelopes. The data sheets and audio tapes were stored in a locked cupboard and were removed when the researcher needed to work on them. On completion of the study the sheets with participants' details were destroyed by shredding them. All data were stored under lock and key and will be kept for a period of five years thereafter all paper based data will be destroyed by shredding and electronic data deleted.

3.19 SUMMARY

Chapter 4 described the various methodologies and steps adopted to ensure that a scientific project was conducted. The main focus of Chapter 3 was on the first stage of the study with just minor highlights of the second stage. The second stage will be presented in detail in Chapter 6 because this stage depends on and will be guided by data analysis and interpretation, and research results and recommendations which will be presented in Chapters 4 and 5 respectively. In the next chapter the results of the quantitative and the qualitative strands of the first stage of the study will be presented.

CHAPTER 4 : PRESENTATION OF RESULTS

4.1 INTRODUCTION

In Chapter 3, the research methodology was discussed. Chapter 4 presents the findings of data analysis for both the quantitative and the qualitative strands of the study. The quantitative data aimed to achieve the first two objectives of the study which were to assess the implementation of the BANC approach in the PHC clinics and to analyse pregnant women's ANC records for evidence of the implementation of the BANC Principles of Good Care and Guidelines. The qualitative data aimed to achieve the third objective of the study which was to describe the perceptions of pregnant women regarding ANC provided at the PHC clinics that were implementing the BANC approach. The codes that were assigned to the PHC clinics (as indicated in Table 3.2) are used in the presentation of the results in order to ensure confidentiality and anonymity. A composite report for the analysis of quantitative data is contained in Appendix 12. Mixing of the two data sets begins in this chapter, showing the convergent nature of the mixed methods research design. Where appropriate triangulation of results is also done and results for quantifying the qualitative data are presented.

4.2 SAMPLE REALISATION

Twelve PHC clinics from eThekweni district were included in the study. The PHC clinics included six PHC clinics from each of the two health authorities (KZN Provincial Department of Health and the municipality) that are responsible for providing PHC services in the eThekweni district. Two PHC clinics per health authority were selected and included in the study from each of the three sub-districts (South, North and West sub-districts), implying that four PHC clinics were included in the study per sub-district.

A total of 100 maternity case record cards were reviewed from each PHC clinic, amounting to 1 200 maternity case record cards reviewed for the entire study at the participating 12 PHC clinics.

The number of interviews conducted in each PHC clinic was guided by data saturation. A minimum of three interviews were done and these were done in MS2 and PN2. A maximum of five interviews were done in each of the other PHC clinics except PS1 and MS1 where four interviews were conducted. In total, 54 interviews were conducted for the entire study.

The observations were conducted for a period of five days in each PHC clinic. Table 4.1 presents the sample realisation for the whole study except for observations which is presented separately in 4.2. It was ensured during the study that all healthcare workers involved in ANC services were observed in operation at least once by the end of the five days spent in each PHC clinic. All the pregnant women in the reception area, depending on the flow of clients, were observed. This included those who came for ANC visits, and therefore had to be registered as such, and those who came to make enquiries.

A total of 240 ANC consultation processes were observed for the entire study, 20 in each of the 12 PHC clinics, and a minimum of one first visit consultation and one repeat visit consultation per midwife and/or advanced midwife were done. The number of consultation processes observed during each day depended on the number of days the clinic provided ANC services per week and the number of midwives and/or advanced midwives present each day in each PHC clinic.

A minimum of one group counselling session per lay counsellor (LC) was conducted. The number of group counselling sessions depended on the number of days the clinics provided ANC services per week and the number of LCs in each clinic. Some clinics had one group counselling sessions per day while other PHC clinics had more than one session per day. A total of 25 HIV group counselling sessions were observed during the entire study.

Table 4.1: Presentation of sample realisation for the entire study

					Record Reviews	Interviews
	District	Health Authority	Sub district	PHC clinic	No of records	No of interviews
	eThekwini	Municipality	MN	MN1	100	5
				MN2	100	5
			MS	MS1	100	4
				MS2	100	3
			MW	MW1	100	5
				MW2	100	5
Sub-Total	1	1	3 Sub-districts	6 PHC clinics	600 Records	27 Interviews
	eThekwini	Province	PN	PN1	100	5
				PN2	100	3
			PS	PS1	100	4
				PS2	100	5
			PW	PW1	100	5
				PW2	100	5
Sub-Total	1	1	3 Sub-districts	6 PHC clinics	600 Records	27 Interviews
Grand Total	1	2 Health Authorities	3 Sub Districts	12 PHC clinic	1200 Records	54 Interviews

Key: Health authority Municipality

 Health authority KZN Department of Health (Province)

A total of 20 pregnant women in each of the other work stations were observed over a period of five days. The number of pregnant women in each work station per day was influenced by the number of days the clinic provided ANC services per week. In a clinic where ANC services were offered once a week all 20 pregnant women were observed during the one day and where ANC services were offered five days per week 20 pregnant women were observed over five days with an average of four pregnant women per day. Table 4.2 presents the sample realisation for the observations.

Table 4.2: Number of observations done during the five day period

Health authority	Sub-District	PHC clinic	Healthcare workers		Pregnant women in reception area		Pregnant women in consultation room	Group counselling sessions	Each of the other work stations
			Midwife/ ADMs	All other	Registration	Enquiry			
Municipi- pality	South	MS1	7	9	158	4	20	5	20
		MS2	6	4	203	8	20	2	20
	North	MN1	3	6	85	11	20	1	20
		MN2	4	10	179	5	20	2	20
	West	MW1	2	4	349	13	20	2	20
		MW2	1	6	54	9	20	3	20
Sub-Total Municipality			24	39	1018	50	120	15	120
Province	South	PS1	5	7	54	9	20	3	20
		PS2	2	5	80	13	20	2	20
	North	PN1	5	6	153	3	20	1	20
		PN2	5	5	138	7	20	1	20
	West	PW1	3	5	162	19	20	2	20
		PW2	1	3	125	14	20	1	20
Sub-total Province			21	26	712	65	120	10	120
Grand Total			44	65	1730	115	240	25	240

4.3 PRESENTATION OF RESULTS

The presentation of the results will be guided by the four Ps and three Cs of the TQM Model. The four Ps include people, planning, processes and performance. The three Cs include culture, communication and commitment. Both these strong elements (the Ps) and the soft necessities (the Cs) are, according to Oakland (2007: 28), important for total quality management of a project or programme which in the current study was the implementation of the BANC approach. Although each strong element and all soft necessities will be discussed separately, it is important to note that sometimes it is not possible to separate them because they are interrelated and they influence and are influenced by each other.

4.3.1 People involved in the Basic Antenatal Care approach

Each part of the organisation has customers (people) whether from within or from without the organisation. In the current study the people were the

pregnant women (external customers) and the clinic staff members (internal customers). The need to identify customers' requirements and planning to meet these identified needs form the core of the total quality approach (Oakland 2009: 344). Observations, done regarding the pregnant women who were at the clinics, included assessing the total number of clients in the PHC clinics and assessing how many of the clients came for ANC visits. With regards to the clinic staff, observations included assessing the categories of staff in the PHC clinic, the number of each category during each day of the observation and the categories and number of staff members who provided ANC services. The results of these observations were as follows:

4.3.1.1 Clients present in the Primary Health Care clinics

Number of clients during the 60 days' observation period at 12 PHC clinics

The total number of clients in the PHC clinics during the 60 day observation period was 15 244, of whom (11.7%, n=1 783) were pregnant women and (88.5%, n=13 461) of the clients came to the PHC clinics for other health services. A total of (27.9%%, n=498) of the pregnant women came for their first ANC visits and (72.1%, n=1 285) came for their repeat ANC visits. However, out of the total number of PHC clients, these pregnant women comprised (3.3%, n=498) for first ANC visits and (8.4%, n=1 285) for repeat ANC visits. Figure 4.1 presents the number of clients attending the PHC clinics and the type of health services for which they came during the observation period.

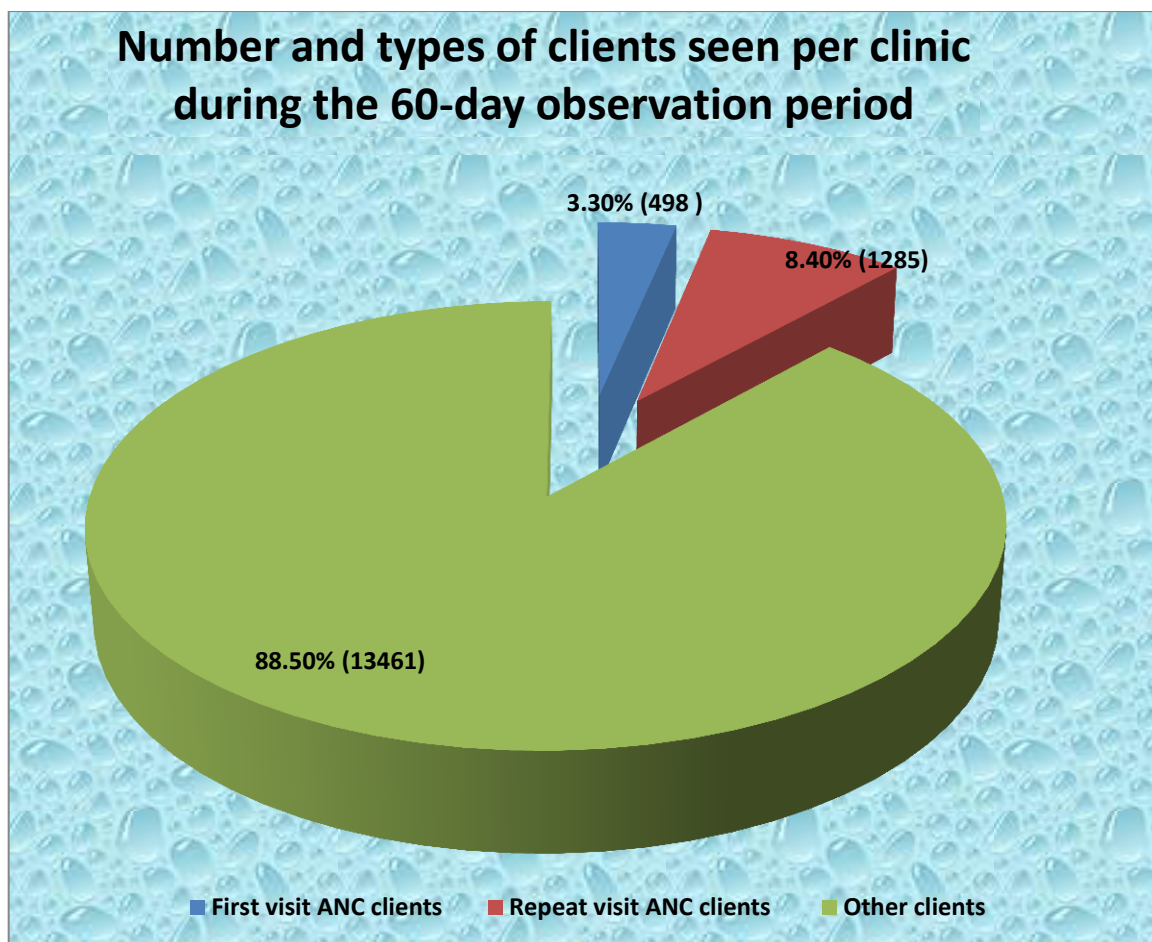


Figure 4.1: Number and types of clients seen during the 60 day observation period in the 12 Primary Health Care clinics (n=15 244)

The total number of clients who attended each PHC clinic, during the five day observation period, ranged from 577 to 2 114. The first visit ANC clients comprised 2.0%-8.5% of the total number of clients seen in a PHC clinic during these five days, the repeat ANC visits made up 5%-24% and other clients made up 67.4%-93.6% of the total number of clients. The clinics with a larger number of clients in five days were:

- **Total number of clients:** a KZN Department of Health (henceforth referred to as 'province') PHC clinic (PN1) had 2 114 clients over five day period.
- **First visit clients:** a municipality PHC clinic (MW1) had 82 clients and these made up 7% of the total number of clients over a five day period.
- **Repeat visit clients:** a municipal PHC clinic (MW1) had 267 clients and these made up 22.5% of the clients over a five day period.

- **Other clients:** a provincial PHC clinic (PN1) had 1 961 clients and these made up 91% of the total clients over a five day period.

Table 4.3: Number and types of clients seen per Primary Health Care clinic during the 60 day observation period (n=15 244)

Clinic	First visit ANC clients	Repeat visit ANC clients	Other clients	Total number of clients
PS1	37 (2.9%)	70 (5.5%)	1 177 (91.6%)	1 284 (100%)
PS2	28 (2.2%)	52 (4.2%)	1 165 (93.6%)	1 245 (100%)
MS1	34 (2.7%)	124 (9.7%)	1 120 (87.6%)	1 278 (100%)
MS2	53 (8.5%)	150 (24.0%)	419 (67.4%)	622 (100%)
PN1	46 (2.0%)	107 (5.0%)	1 961 (93.0%)	2 114 (100%)
PN2	40 (2.6%)	98 (6.4%)	1 390 (91.0%)	1 528 (100%)
MN1	29 (2.7%)	56 (5.1%)	1 004 (92.2%)	1 089 (100%)
MN2	41 (2.5%)	138 (8.5%)	1 448 (89.0%)	1627 (100%)
PW1	53 (5.0%)	109 (9%)	1 027 (86.0%)	1 189 (100%)
PW2	31 (2.0%)	84 (6.0%)	1 302 (92.0%)	1 417 (100%)
MW1	82 (7.0%)	267 (22.5%)	835 (70.5%)	1 184 (100%)
MW2	24 (4.2%)	30 (5.2%)	523 (90.6%)	577 (100%)
Total	498 (3.3%)	1 285 (8.4%)	13 461 (88.3%)	15 244 (100%)

The clinic which had of the fewest clients over the five day period was a municipality clinic (MW2) with 577 clients over five days of which (4.2%, n=24) were first ANC visits, (5.2%, n=30) were repeat ANC visits and (90.6%, n=523) were other clients. These results are presented in Table 4.3.

Number of clients seen at the PHC clinics per day

The minimum number of clients per day seen at a PHC clinic was 73 and the maximum was 501. A provincial PHC clinic (PN1) had the highest number of clients (501) per day and the highest sum total clients (2 114) over five days. A municipal PHC clinic (MS2) had the smallest number of clients (73) per day. The smallest number of clients over five days (577) was seen at a municipal clinic (MW2). The average number of clients per day in the twelve PHC clinics was ranged from 115 to 422. Table 4.4 presents the number of clients per day seen at each PHC clinic over a five day period.

Table 4.4: Total number of clients seen per day in the 12 Primary Health Care clinics over five days (n=15 154)

Clinic	Day 1	Day 2	Day 3	Day 4	Day 5	Sum in five days	Average per day
PS1	278	237	196	315	258	1284	257
PS2	307	258	197	205	278	1245	249
MS1	293	270	286	251	178	1278	256
MS2	140	80	119	210	73	622	124
PN1	436	397	412	501	368	2114	422
PN2	295	360	313	300	260	1528	306
MN1	210	176	258	319	126	1089	218
MN2	377	268	410	323	249	1627	325
PW1	208	243	196	237	305	1189	239
PW2	316	309	270	333	189	1417	283
MW1	360	237	103	355	129	1184	237
MW2	180	97	118	89	93	577	115
Total	3400	2932	2878	3438	2506	15154	3031

Number of clients in the Primary Health Care clinics for their first antenatal care visits

Four PHC clinics, two from each health authority had no first visit ANC clients on one day during the five day observation period (indicated with x in Table 4.5). The maximum number of first visit ANC clients in the 12 clinics was 27 clients per day and this was observed in a provincial PHC clinic (PW1).

The average number of first visit ANC clients per day in the 12 clinics ranged from 6 to 11. A trend was observed in all the PHC clinics where there was one day with far more first visit ANC clients compared to the other days. Table 4.5 presents the total number of first visit ANC clients in the PHC clinics.

Table 4.5: Total number of first visit antenatal care clients per day in the 12 Primary Health Care clinics (n=498)

PHC clinic	Day 1	Day 2	Day 3	Day 4	Day 5	Total in five days	Average per day
PS1	18	0	7	3	9	37	7×
PS2	8	3	12	4	1	28	6
MS1	2	24	5	3	0	34	7×
MS2	8	9	12	20	4	53	11
PN1	13	8	12	10	3	46	9
PN2	8	11	4	10	7	40	8
MN1	2	1	3	23	0	29	6×
MN2	10	7	10	6	8	41	8
PW1	4	27	9	2	11	53	11
PW2	9	3	17	2	0	31	6×
MW1	20	8	26	17	11	82	16
MW2	2	8	8	5	1	24	5
Total	104	109	125	105	55	498	100

× First ANC visits available four days per week

Number of clients for repeat antenatal care visits per day in the Primary Health Care clinics

The average number of repeat visit ANC clients in the 12 PHC clinics ranged from 6 to 53 per day. One municipal PHC clinic (MS2) had the highest number of repeat ANC visit clients in one day (150). Although this PHC clinic had the highest number of repeat ANC visit clients in one day but, this clinic provided repeat visit ANC services only once per week. Three other municipal PHC clinics, MS1, MN1 and MW2 (indicated with × in Table 4.6) also provided ANC services for repeat visit clients only once per week. Two provincial PHC clinics (PS1 and PS2) offered services for repeat ANC visits for four days during the five day observation period. A similar trend to that observed with the first visit ANC clients was observed with the repeat visit clients in six PHC clinics where there was one day with far more clients compared to the other days. All PHC clinics, except one, had fewer clients on the fifth day which was a Friday for all clinics. Six PHC clinics (PS1, PS2,

MS1, MS2, MN1 and MW2) had no repeat ANC clients on a Friday. Table 4.6 presents the total number of repeat visit.

Table 4.6: Total number of repeat antenatal care visit clients per day in the 12 Primary Health Care clinics (n=1 278)

PHC clinic	Day 1	Day 2	Day 3	Day 4	Day 5	Sum 5days	Average per day
PS1	20	5	2	43	0	70	14
PS2	2	3	39	8	0	52	10
MS1	0	124	0	0	0	124x	25x
MS2	0	0	0	150	0	150x	30x
PN1	32	26	17	23	9	107	22
PN2	17	23	19	30	9	98	20
MN1	0	0	0	50	0	50x	10x
MN2	27	31	26	29	25	138	28
PW1	8	73	14	6	8	109	22
PW2	17	29	18	13	7	84	17
MW1	80	49	76	47	15	267	53
MW2	0	0	30	0	0	30x	6x
Total	203	363	241	399	73	1278	256

x All done in one day, if spread over 5days could have been per day

4.3.1.2 Staff establishments in the Primary Health Care clinics

Observations were made regarding the total staff establishment each day of the observational visits in all 12 clinics. The researcher aimed to assess the number of various categories of staff in the PHC clinics and the categories and number of the clinic staff members who provided ANC services.

Categories of staff present in the Primary Health Care clinics

It was observed that various categories of staff members were available in each PHC clinic each day. The standard pattern included: advanced midwives, midwives, PNs, ENs, ENAs, LCs and the clerks. While there was a standard pattern for the categories of the clinic staff that were available in each PHC clinic every day; slight deviations were noted in this pattern in five

municipal PHC clinics where there were no advanced midwives during the entire observation period.

Table 4.7: Average number of each category of staff in the Primary Health Care clinics per day (n=289)

PHC clinic	ADMs	Midwives	PNs	ENs	ENAs	LAs	Clerks	Total
PSI	2	8	2	6	5	2	2	27
PS2	1	8	2	6	5	3	2	26
MS1	0	7	0	2	1	5	1	16
MS2	1	6	0	1	2	2	1	13
PN1	4	13	5	10	5	3	1	42
PN2	2	9	4	5	9	5	1	35
MN1	0	8	0	2	2	1	2	15
MN2	0	12	0	2	2	2	4	22
PW1	2	9	1	4	2	2	1	21
PW2	1	17	1	10	4	2	2	37
MW1	0	12	3	2	2	2	3	24
MW2	0	4	0	2	1	3	1	11
Total	13	113	18	52	40	32	21	289

The number of staff members available for each category per day differed from PHC clinic to PHC clinic. The provincial PHC clinics had the highest numbers for all categories of staff compared to the municipal clinics. The category of staff that had most staff members was that of midwives (17), followed by the E/Ns (10) and the ENAs (9). The maximum number of advanced midwives was eight per clinic per day. The category of staff with the smallest number was the clerks, the professional nurses and the L/Cs with each category having four staff members per PHC clinic per day. These observations are presented in Table 4.7.

Number of staff members providing antenatal care services

According to the results of the study, the number of clinic staff members who provided ANC services varied from PHC clinic to PHC clinic. In some clinics there were dedicated staff members who were allocated to do just ANC services while in other PHC clinics a so called supermarket approach or one stop shop approach was practised. The supermarket approach or one stop shop is when each staff member provides all services as required by the

clients and attends to all the clients as they come. There were days when not all categories of staff provided ANC services in some PHC clinics.

The provincial PHC clinics had a minimum number of one and a maximum of two advanced midwives providing ANC services per day. The advanced midwife from the one municipal PHC clinic was working as an operational manager and was not directly involved with providing ANC services. The other five municipal PHC clinics did not have advanced midwives.

It was observed that not all midwives available in the PHC clinics were involved in ANC services every day. Two PHC clinics, one from the province and one from the municipality, did not have the midwives involved in ANC services on some days. At the provincial PHC clinics only the advanced midwives were involved in ANC services during these days while at the municipal PHC clinics it was because there were no ANC services during these days. All the midwives from these clinics were allocated to other sections of the PHC clinics during these days. No PNs provided ANC services.

Three PHC clinics did not have ENs who were directly involved in providing ANC services and one PHC clinic did not have ENAs.

All PHC clinics had at least one LC per day with a maximum of four LCs who were involved in ANC services in some PHC clinics per day. The same applied to the category of clerks. The findings of this observation are presented in Table 4.8.

Table 4.8: Average number of each category of clinics' staff members involved in antenatal care services per Primary Health Care clinic per day

PHC clinic	ADMs	Midwives	ENs	ENAs	LAs	Clerks	Total
PSI	2	2	1	1	2	2	10
PS2	1	0	0	1	1	1	4
MS1	0	2	1	1	2	1	7
MS2	0	2	0	0	2	1	5
PN1	2	3	2	2	1	1	11
PN2	1	4	2	1	1	1	10
MN1	0	1	0	0	1	2	4
MN2	0	3	1	2	2	4	12
PW1	1	2	0	2	2	1	8
PW2	1	1	0	1	1	1	5
MW1	0	2	1	0	1	1	5
MW2	0	1	1	1	3	1	7
Total	8	23	9	12	19	17	88

The average number of each category of staff members involved in providing ANC services per health authority was as follows:

1. Provincial PHC clinics: no professional nurses, two midwives and one staff member for all the other categories.
2. Municipal PHC clinics: no advanced midwives and professional nurses, two basic midwives, one EN and ENA and two LCs and clerks.

The comparison of staff allocations between the two health authorities is presented in in Figure 4.2.

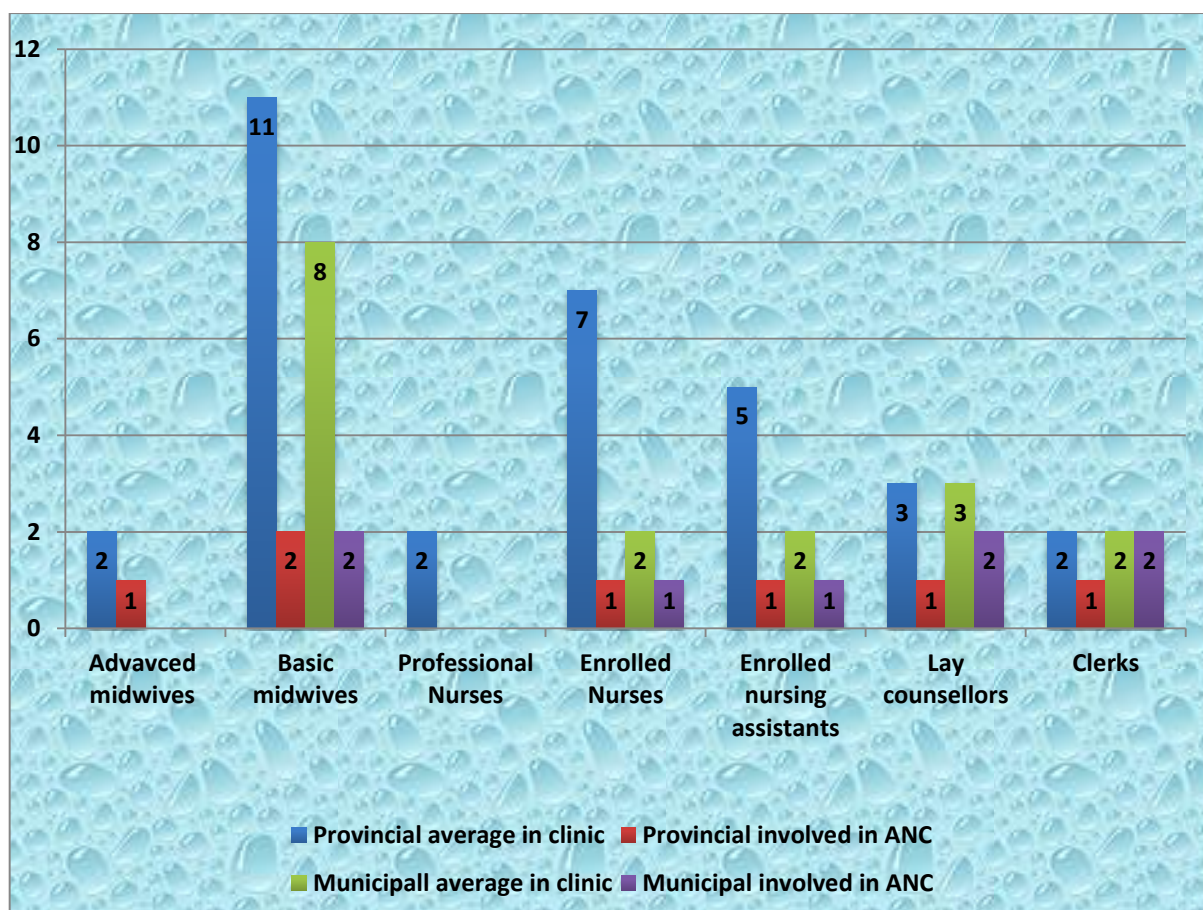


Figure 4.2: Average number of clinics' staff members per health authority

It is the co-duty of the midwives and the advanced midwives to provide ANC services. An assessment was made of how many of the midwives and advanced midwives were involved in providing ANC services. The number of midwives and advanced midwives per PHC clinic ranged from 4 to 17. It was observed in all the PHC clinics that there were fewer midwives and/or advanced midwives (10%-45%, n=1-5) who were involved in ANC services than those who were involved in other health services (55%-90%; n=15).

In total, during the 60 day observation period, out of 216 midwives and advanced midwives, (14%, n=31) were involved in ANC services and (86%, n=185) were providing other health services. These results are presented in Table 4.9.

Table 4.9: Number of midwives and advanced midwives in the Primary Health Care clinics per day and those involved in providing antenatal care services (n=216)

PHC clinic	Midwives and advanced midwives involved in ANC services	Midwives and advanced midwives involved in other health care services	Total midwives and advanced midwives in the PHC clinic
PSI	4 (40%)	6 (60%)	10 (100%)
PS2	1 (11%)	8 (89%)	9 (100%)
MS1	2 (29%)	5 (71%)	7 (100%)
MS2	2 (29%)	5 (71%)	7 (100%)
PN1	5 (29%)	12 (71%)	17 (100%)
PN2	5 (45%)	6 (55%)	11 (100%)
MN1	1 (10%)	9 (90%)	10 (100%)
MN2	3 (25%)	9 (75%)	12 (100%)
PW1	3 (33%)	6 (67%)	9 (100%)
PW2	2 (12%)	15 (88%)	17 (100%)
MW1	2 (15%)	11 (85%)	13 (100%)
MW2	1 (25%)	3 (75%)	4 (100%)
Total	31 (14%)	185 (86%)	216 (100%)

4.3.1.3 Clinic managers' availability to provide supportive supervision

According to the BANC handbook, each clinic should have one or more supervisors to perform the clinical supervision and the advanced midwifery tasks (Pattinson 2007: 12). The observations included assessments of whether each of the 12 clinics had clinic managers to support and supervise staff members.

According to the results of the study each clinic had a manager. However, it was observed that while in some clinics the manager was always available on site; in other PHC clinics the manager was not always available on site throughout the five day observational period. Table 4.10 presents the findings about the availability of the PHC clinics' managers.

Table 4.10: Managers' availability to support staff (n=59)

	Yes always	Yes sometimes	No	Total
Manager available to support staff	45 (76.2%)	9 (15.3%)	5 (8.5%)	59 (100%)

It was noted that in the provincial PHC clinics, the managers were available (90%, n=27) of the time compared to the municipal PHC clinics where they

were available (60%, n=18) of the time ($\chi^2 = 7.595$ (N = 59), df = 2, p = .012).

Table 4.11 presents these findings.

Table 4.11: Results per health authority: Managers' availability to support clinic staff (n=59)

Municipality PHC clinics				Provincial PHC clinics				Test statistics		
Yes Always	Yes Sometimes	No	Total	Yes Always	Yes Sometimes	No	Total	Fisher's Exact Test	df	P value
18 60.0%	6 20.0%	5 16.7%	29 100%	27 90.0%	3 10.0%	0 0%	30 100	7.595	2	.012*

* *P-value* < .05

4.3.2 Planning for the implementation of the Basic Antenatal Care approach

Planning includes the development and deployment of the right policies and strategies, setting up appropriate resources, maintaining partnerships, and designing quality control processes (Oakland 2009: 27). An assessment was made as to whether planning was done with regards to the following: (a) operating days and times, (b) availability of and access to ANC services, (c) availability and utilisation of resources, (d) the use of the correct recording system, (e) having a clearly defined process map indicating the flow of clients through the ANC clinic and (f) the patients' waiting times at the clinics.

4.3.2.1 Operating days and times in the Primary Health Care clinics

According to the results of the study nine PHC clinics were operating for five days per week and closed during public holidays and weekends. The other three PHC clinics were operating for seven days a week including public holidays and weekends. The nine PHC clinics that were open for five days per week were open for eight hours a day, from 0700 hours in the morning to 1600 hours in the afternoon. Six of these nine PHC clinics were municipal and three were provincial. Three provincial PHC clinics were operating seven days per week and were open for 24 hours per day. None of the municipal clinics were open for seven days per week, on public holidays and over

weekends or for 24 hours a day. Table 4.12 presents the findings pertaining to the operating times and days for the twelve clinics.

Table 4.12: Operating days and times in the Primary Health Care clinics (n=12)

CLINIC	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Days/ week	5	7	5	5	7	5	5	5	7	5	5	5
Hours/ Day	8	24	8	8	24	8	8	8	24	8	8	8

4.3.2.2 Availability of and access to antenatal care services in the Primary Health Care clinics

According to the BANC guidelines, ANC services should be provided as part of the comprehensive package of PHC services and should be available every day during the time that the PHC clinic is open (Pattinson 2007: 7). ANC services were provided every day that the PHC clinics were open except in one municipal PHC clinic (MS1) where there was one day during the observational visits when no ANC services were provided.

Although the PHC clinics were providing ANC services every time they were open, they were not servicing both the first and the repeat visit ANC clients all the time. They had separate days for the first visits and separate days for the repeat ANC visits. This was the case in all PHC clinics except for five PHC clinics, three from the province and two from the municipality (PN1, PN2, MN2, PW1 and MW1) which were attending to both the first and the repeat visits ANC clients all the time while they were open.

It was also noted from the statements made by the participants that the ANC services were not accessible to both first and repeat visit ANC clients every day. This was noted in the following statements by the participants:

“...I believe if you come on any other day other than your scheduled clinic day you are not accepted. They will not help you unless you come on a Tuesday which is the day for the pregnant women (Participant 2 from PS2).

“...I observed a patient on Thursday who was sent back home without being attended to but asked to come back on her scheduled appointment date” (Participant 2 from MS1).

“... If you come back not on your clinic day you are put at the end of the queue so it is hard to come if it is not your date even if you have a problem (Participant 1 from PS1).

“...I observed a patient who came reporting that her tablets were finished and they told her to go and get the tablets from hospital because the clinic will not issue her with the tablets as it was not her date and that it was not the clinic day for the repeat ANC clients. The poor woman was emotional and traumatised” (Participant 2 from MW1).

Although the participants were concerned because the ANC services were not provided every day of the week, the following comment from one of the participants indicates that some of the participants accepted that this had to happen:

“.....Yes there are days when they do not accept the pregnant women but, we can’ expect to be here every day. We are taught how to take care of ourselves so we need to learn and follow the orders” (Participant 2 from PS2).

Whilst it is the government directive that ANC services should be available every day of the week, it appeared from the comments of the participants that not all the clients were in favour of the practice of servicing the first and repeat visit clients on the same day. This was noted in the following statement by one participant:

“.....Mixing of new and old clients is a problem. During the first visit we were many and we were mixed new and old patients and things went very slow. It took the whole day being in the clinic. With subsequent visits, like today, it is just us the old clients only, we are not mixed with the new clients and things are going very well and fast...” (Participant 3 from MW1).

It was further observed that not all the pregnant women who presented at the clinic for ANC were accepted even if they came on correct ANC days. It was only during (51%, n=30) of the observation days that all pregnant women who presented for ANC were accepted. During (14%, n=8) of the observation days, the pregnant women were sometimes accepted and sometimes not and during (36%, n=21) of the time pregnant women were not accepted at all. These findings are presented in Table 4.13

Table 4.13: Acceptance of the pregnant women who presented at the clinics for antenatal care services (n=59)

	Yes always	Yes sometimes	No	Total
All pregnant women who presented at the clinic for ANC services accepted	30 (51%)	8 (14%)	21 (36%)	59 (100%)

There was no significant difference ($\chi^2 = 5.297$ (N = 56), df = 1, p= .071) observed between the health authorities with regards to accepting the pregnant women who presented at the PHC clinics for ANC although slightly more pregnant women were accepted in provincial compared to the municipal PHC clinics. All pregnant women were accepted (35%, n=10), sometimes accepted (21%, n=6) and not accepted (45%, n=13) of the time in the municipal PHC clinics. In the provincial PHC clinics all pregnant women were accepted (67%, n=20), sometimes accepted (7%, n=2) and not accepted (27%, n=8) of the time. The results are presented in Table 4.14.

Table 4.14: Results per health authority: Acceptance of pregnant women who presented at the clinic for antenatal care services (n=59)

Municipal				Provincial				Test statistics		
Yes Always	Yes Some times	No	Total	Yes Always	Yes Some times	No	Total	Fisher's Exact Test	df	P value
10 (35%)	6 (21%)	13 (45%)	29 (100%)	20 (67%)	2 (7%)	8 (27%)	30 (100%)	5.297	2	.071

* *P-value* < .05

It was also evident from the interviews that not all pregnant women who presented at the PHC clinics for ANC were accepted. The majority of the participants verbalised that access to the health services was poor, highlighting how they were either refused access or made to wait longer before being attended to. This was evident in the following excerpts:

“...When I came for the first time I did not get any help. I was told by the reception staff that the clinic was full; I should come back another day...” (Participant 1 from MN2).

“...I was sick and came to the clinic, not knowing anything about the pregnancy because I am pregnant for the first time. They sent me back home without helping me and asked me to come back on a Monday stating that they had taken enough pregnant women for the day” (Participant 2 from MS1).

“... I have observed that those that come late at the clinic are sent back home” (Participant 2 from PW2).

4.3.2.3 Availability and utilisation of resources

Material resources are essential for the provision of health services. According to the BANC handbook, each clinic that deals with pregnant women should have essential drugs and equipment required for rendering ANC services (Pattinson 2007: 11). Planning should be done to ensure that essential drugs and equipment are always available. Observations included checking whether all equipment and treatments were available and easily accessible in the PHC clinics for use by ANC providers. The results of the

study revealed that all treatments and equipment were available and easily accessible in the PHC clinics (83%, n=49) of the time. Table 4.15 presents the findings pertaining to the availability of treatment and equipment in the PHC clinics.

Table 4.15: Availability and accessibility of treatments and equipment (n=59)

	Yes always	Yes sometimes	No	Total
All treatment and equipment available and easily accessible for use	49 (83%)	2 (3%)	8 (14%)	59 (100%)

There were no significant differences ($\chi^2 = 2.504$ (N = 59), df = 2, p= .286) between the two health authorities with regards to the availability of treatment and equipment. Equipment and treatment were always available in PHC clinics of both health authorities except during five days in the provincial PHC clinics and three days in the municipal PHC clinics. Table 4.16 presents these results.

Table 4.16: Results per health authority: Availability and accessibility of treatments and equipment (n=59)

Municipal				Provincial				Test statistics		
Yes Always	Yes Some times	No	Total	Yes Always	Yes Some times	No	Total	Fisher's Exact Test	df	P value
24 (82.8%)	2 (6.9%)	3 (10.3%)	29 (100%)	25 (83.3)	0 (0%)	5 (16.7%)	30 (100%)	2.504	2	.286

* P-value < .05

During the interviews, some participants verbalised their concerns about the availability and utilisation of resources. They commented regarding dispensing of medications about which they were concerned that they had not been issued with sufficient supplies. This was established from the following statements by the participants:

“...They make six weeks interval for clinic visits but do not give enough medication to last you for that long” (Participant 4 from PS1).

“...The nurse gave me tablets which she said I must take once a day. Other pregnant women told me that was wrong and said that the tablets are to be taken once a week because they are harmful to the baby. I feel the pregnant women were right because the supply that I was given got finished within one week and I had no more tablets to take yet if I had taken them once a week like the other pregnant women they would have lasted longer until I got back to the clinic for more supply (Participant MW2 No. 2).

The comments made by the participants highlighted their awareness of the importance of the effective utilisation of available resources. They were worried about duplication of services where services that had already been provided by the private doctors were repeated in the public sector. The example of this is the comment by a participant who said:

“...I already knew that I was pregnant. I had been to a private doctor to confirm that I was pregnant but they still repeated the pregnancy test” (Participant 4 from PW1).

“...the nurse instructed me to go to hospital for ultra sound, I already had the ultra sound report from my private doctor but the nurse insisted that I had to go to hospital, it was routine, the clinic did not rely on reports from private doctors” (Participant 1 from PN1).

“... I was not accepted at the clinic on the first day. I was told that there were no test kits to confirm that I was pregnant and should come back the following week. I told them that I had already confirmed that I was pregnant using the kit from the pharmacy but they insisted they needed to confirm on their own” (Participant 2 from MS1).

In contrast, other participants felt that they should be getting all the package of services in the PHC clinics. They were concerned that if they go to the private doctors they had to pay for the maternity care services, yet these were offered for free in the PHC clinics. They stated that they should be getting all the services from the PHC clinics. The following quotes illustrate these concerns:

“...I was shocked to learn that I must go to a private doctor for ultra sound and must find my own doctor, especially because I had to pay the doctor yet the government has said that our services when we are pregnant should be free. I feel the clinic must provide for the entire test that we do when we are pregnant, otherwise it means the services are not free for us....” (Participant 1 from PN2).

“... I would prefer that all services are provided in one point instead of sending us away to the hospital and private doctors for ultra sound, bloods and even delivery. It causes a lot of inconvenience and is costly. I feel they must upgrade this clinic so that everything is available here” (Participant 1 from MW2).

4.3.2.4 Recording system used for antenatal care services

According to the ANC guidelines a card commonly referred to as the “white maternity case record” should be used as a standardised recording card by all facilities providing maternity services. It is stated in the BANC handbook that the maternity case record should not be kept at the clinic but should be given to the pregnant women as a client-held record. Observations were made regarding the type of records that were used in the PHC clinics and where the record cards were kept. Over 90% compliance was observed with these two processes. Out of the 1200 maternity case records reviewed (98.4%, n=1181) were the standard white maternity case records cards and (1.6%, n=19) were not; they were the old green maternity case record cards that had been used previously. The issue with the type of records was not the colour of the record but the structure and information contained in the record. Calling them by colour (white or green) has been a trend in the health services which has been used for identification purposes. The ANC card was not kept at the clinic but given to the pregnant women to take home in all PHC clinics. These findings on the record reviews corresponded with the findings of observations. It was noted during the observations that the maternity case records were not kept at the clinics but were always given to the pregnant women to take home. Table 4.17 presents these results.

Table 4.17: Recording system used for antenatal care services (n=1 200)

	Yes	No	Total
Standard white maternity case record used	1181 (98.4%)	19 (1.6%)	1200 (100%)
Maternity case record not kept at the PHC clinic but given to the pregnant women as a client held record	1200 (100%)	0 (0%)	1200 (100%)

All 19 records that were not the standardised white maternity case record cards were from the municipal PHC clinics. As a result there were more municipal reviews and fewer provincial PHC clinics where the white maternity case record cards were not being used ($\chi^2 = 19.306$ (N=1200) df =1, $p < .0005$).

Table 4.18: Results per health authority: Recording system used for antenatal care services (n=1 200)

Observation made	Municipal Health Authority				Provincial Health Authority		Test statistics		
	Yes always	No	Total		Yes always	Total	χ^2	df	p value
Standard white maternity case record used	581 (96.8%)	19 (3.2%)	600 (100%)		600 (100%)	600 (100%)	19.306	1	.0005*
Maternity case record not kept at the PHC clinic but given to the pregnant women as a pregnant woman held record	600 (100%)	0 (0%)	600 (100%)		600 (100%)	600 (100%)	No statistics computed because findings were constant		

* $P\text{-value} < .05$

The maternity case record card was not kept at the PHC clinics but given to the pregnant women as a client held record all the time in both health authorities' PHC clinics. Table 4.18 presents the comparisons between the health authorities.

4.3.2.5 Following a clearly defined process map while providing antenatal care services

It was observed in all the PHC clinics that ANC services were not provided at one workstation. The pregnant women had to move from one work station to the next to access various aspects of ANC services. Although the work stations were almost similar in all PHC clinics, the sequence of the flow of pregnant women from one station to the next differed in the 12 PHC clinics. The work stations included registration, observation, injection, blood tests, counselling and consultation work stations. Observations were made regarding whether clearly defined process maps through these work stations were followed during the provision of ANC services. In most PHC clinics no clearly defined process map was followed (66.7%, n=40) of the time. Only during (32.2%, n=19) of the observations clearly defined process maps were followed at the PHC clinics. The findings are presented in Table 4.19.

Table 4.19: Following a clearly defined process map during the provision of antenatal care services (n=59)

	Yes	No	Total
A clearly defined process map followed	19 (32.2)	40 (67.8)	59 (100.0)

There were no significant differences ($\chi^2 = 1.699$ (N=59) df =1, p= .192) between the health authorities with regards to the following of a clearly defined process map. In both health authorities there was no clearly defined process map followed (60-76%, n=18-22) of the time. These results are presented in Table 4.20.

Table 4.20: Results per health authority: Following a clearly defined process map during the provision of antenatal care services (n=59)

Municipal			Provincial			Test statistics		
Yes Always	No	Total	Yes Always	No	Total	Fisher's Exact Test	df	P value
7 (24%)	22 (76%)	29 (100%)	12 (40.0%)	18 (60.0%)	30 (100%)	1.699	1	.192

* P-value < .05

4.3.2.6 Pregnant women's waiting times at the Primary Health Care clinics

It is important that the waiting times are monitored and strategies to reduce long waiting times should be implemented. The NDoH advises in the national core standards that unnecessary waiting times should be avoided and clients should be informed about the anticipated waiting time at the specific clinic (NDoH 2011:19). The waiting times were not included in the observations but were raised as concerns by the participants during the interviews. It was observed whether the clinic's staff members spent most of their time working actively and attending to the pregnant women. The findings on this aspect of time management will be presented in detail under clinic culture and communication. The concerns of the participants about the waiting times were expressed as follows:

"...We arrive very early as early as 04h00 in the morning but they only start attending to us very late sometimes as late as 09h00 without any explanation" (PS1 No. 4).

"... We were here from 07h00 till 16h00 they do everything well but they are too slow (Participant 3 from MW2).

The participants also verbalised their concern about the amount of time that they spent with the midwife at the clinic and how soon they were able to see the midwives stating that much time was spent with other categories of clinic staff members.

"...There is time delay. The clinic staff members start working very late in the morning. Also there is a long delay before you see the sister most of the time is spent with the other staff and too little time with the sister" (Participant 1 from MN2).

"...We are made to stand for long hours in a queue yet we are pregnant. It takes hours before you can see the sister and no one explains why" (Participant 4 from MN2).

Some of the participants were not very much concerned about the long waiting times but rather how these were handled by the clinic staff. The following statements indicate their concerns:

“...Sometimes we wait for so long and no one explains to us what is causing the delay” (Participant 3 from MN2).

“...Sometimes they make you to wait for too long after which they ask you to go home and come back the next day” (Participant 1 from MN2)

Some of the participants attributed the long waiting times to the way services were being provided. They stated this in the following comments:

“...They are too slow” (Participant 1 from MN2).

“...There is long delay and long queues. They make us to wait with sick patients. I have already got used to waiting” (Participant 2 from PS1).

4.3.2.7 Structure and organisation of the Primary Health Care clinics

Planning also includes that the structure of the clinic is made suitable for the provision of services. It is important to ensure that there is enough space to accommodate all the pregnant women. Although assessing the structure of the clinics was not included in the study, this was raised as a concern by the participants. This highlights the importance of planning and organisation of space where services are provided. The following are the comments that were made by the participants regarding the structure and organisation of the clinic:

“...This clinic is too small has limited rooms, no privacy, consultation is done in the same room as observations. Also there are not enough chairs for us to sit” (Participant 4 from PS1).

“...Last time I was made to spend the whole day at the clinic because I missed my turn. I did not hear when my name was called because we were sitting outside there was no place to sit inside the clinic. I was made to join

the end of the queue. The waiting area is too small and is usually very full (Participant 4 from MW1).

4.3.3 Processes involved during implementation of the Basic Antenatal Care approach

Several processes that should be carried out during the implementation of the BANC approach are detailed in the BANC Principles of Good Care and Guidelines. These include administrative processes and details of how ANC consultation processes should be provided (Pattinson 2005b: A3-C20). Analysis was done to establish whether these processes were carried out which informed the researcher about the evidence of the implementation of the BANC approach in the PHC clinics. Data were collected using observations and record reviews and more information regarding the evidence of implementation of the BANC approach was obtained from the participants during the interviews.

4.3.3.1 Administrative processes

Observations were made regarding whether (a) all clients whose pregnancies had been confirmed were offered a choice as to whether to keep or terminate the pregnancy, (b) the first visit ANC consultation was provided on the day pregnancy was confirmed or the very first time the pregnant women presented at the clinic, (c) first visit consultation provided before transfer of those pregnant women who for some reason needed to attend ANC at another clinic, (d) Principles of Good Care and Guidelines used as reference to provide ANC and (e) clinic specific protocols on the management of pregnant women were used.

Almost all these processes were not performed 79%-100% of the time in all PHC clinics thus showing little evidence of the implementation of the BANC approach. The one process that was done well was the first visit consultation before transfer of all pregnant women who for some reason needed to attend ANC at another clinic as this was done all the time (100%, n=13). However, there were few situations during the study when there were pregnant women

who needed to be transferred to other clinics. In total this was observed during (22.0%, n=13) out of the 59 of the observational visits. Table 4.21 presents the results for all processes observed for evidence of implementation of the BANC approach in the PHC clinics.

Table 4.21: Administrative processes observed for the evidence of implementing the Basic Antenatal Care approach (n=59)

PROCESS OBSERVED	Number observed			
	Yes	Some times	No	Total
All clients whose pregnancies had been confirmed were offered the choice to keep or terminate the pregnancy	0 (0%)	0 (0%)	22 (100%)	22 (100%)
First visit ANC consultation provided on the day when the pregnancy was confirmed or the very first time the pregnant women presented at the clinic	2 (7%)	4 (14%)	22 (79%)	28 (100%)
First visit consultation provided before transfer of all pregnant women who for some reason needed to attend ANC at another clinic	13 (100%)	0 (0%)	0 (0%)	13 (100%)
Principles of Good Care and Guidelines used as reference to provide ANC	0 (0%)	0 (0%)	59 (100%)	59 (100%)
Clinic specific protocols on the management of pregnant women were used	5 (8.5%)	0 (0%)	54 (91.5%)	59 (100%)
Checklists for first and follow-up visits were used	6 (10%)	9 (15%)	44 (75%)	59 (100%)

None of the following processes were observed in the PHC clinics of both health authorities: offering all clients, whose pregnancies had been confirmed, the choice to keep or terminate the pregnancy, and the use of the Principles of Good Care and Guidelines to provide ANC. The first visit ANC consultation was not provided on the day when the pregnancy was confirmed or the very first time the pregnant women presented at the clinic in both health authorities for more than 50% of the time. It was found that (58.3%, n=7) of the time the provincial PHC clinics were not providing the first visit ANC consultation on the day pregnancy was confirmed or the very first time the pregnant women presented at the clinic whereas this was the case (94%, n=15) of the time in municipal PHC clinics, ($\chi^2 = 6.281$ (N = 59), df = 2, p = .024).

There were significant differences between the health authorities with the use of clinic specific protocols on the management of pregnant women and checklists used during the first and follow up visits. The protocols were not used at all in the municipal PHC clinics but in the provincial PHC clinics they were used (17%, n=5) of the time ($\chi^2 = 5.281$ (N = 59), df = 2, p = .022). The checklists for first and follow up visits were not used at all in the provincial PHC clinics but were used (21%, n=6) of the time in the municipal PHC clinics (Fishers $\chi^2 = 21.703$ (N = 59), df = 2, p = .000). These findings are presented in Table 4.22.

Table 4.22: Results per health authority: Administrative processes observed for the evidence of the implementation of the Basic Antenatal Care approach (n=59)

Observations made	Municipal Health Authority				Provincial Health Authority				Test statistics		
	Yes always	Yes Sometime	No	Total	Yes always	Yes Sometime	No	Total	χ^2	df	P value
All clients whose pregnancies were confirmed were offered the choice to keep or terminate the pregnancy	0 (0%)	0 (0%)	11 (100%)	11 (100%)	0 (0%)	0 (0%)	11 (100%)	11 (100%)	No statistics computed because findings were constant		
First visit ANC consultation provided on the day pregnancy was confirmed or the very first time the pregnant women presented at the clinic	1 (6%)	0 (0%)	15 (94%)	16 (100%)	1 (8.3%)	4 (33.3%)	7 (58.3%)	12 (100%)	6.281	2	.024*
First visit consultation provided before transfer of all pregnant women who for some reason needed to attend ANC at another clinic	3 (100%)	0 (0%)	0 (0%)	3 (100%)	10 (100%)	0 (0%)	0 (0%)	10 (100%)	No statistics computed because findings were constant		
Principles of Good Care and Guidelines used as reference to provide ANC	0 (0%)	0 (0%)	29 (100%)	29 (100%)	0 (0%)	0 (0%)	30 (100%)	30 (100%)	No statistics computed because findings were constant		
Clinic specific protocols on the management of pregnant women were used	0 (0%)	0 (0%)	29 (100%)	29 (100%)	5 (17%)	0 (0%)	25 (83%)	30 (100%)	5.281	1	.022*
Checklists for first and follow-up visits were used	6 (21%)	9 (31%)	14 (48%)	29 (100%)	0 (0%)	0 (0%)	30 (100%)	30 (100%)	21.703	2	.000*

* P-value < .05

Evidence of the BANC approach was also assessed by checking whether the participants had noticed any change and asking their opinions about the any such observed change(s). The participants, who had used ANC services during previous pregnancies, were asked whether there was any change in the way ANC services were being provided compared to these services during their previous pregnancies. During data conversion the participants' comments were quantified and the findings revealed that, out of the 54 participants who were interviewed, (56%, n=30) participants had been pregnant previously and had attended ANC. A total of (67%, n=20) out of the 30 participants had noticed some changes and (33%, n=10) had not noticed any change. Awareness of changes was evident in the following statements by the participants:

"...Previously we use to be given a small blue card but we are now given a big white card" (Participant 5 from PS1).

"...In the past we use to attend clinic once a month and as you get closer to delivery they will want you to come every week" (Participant 5 from MN1).

"...When I attended for my two elder babies we were not compelled to do HIV testing but I noted during this pregnancy that it is compulsory to do an HIV test" (Participant 5 from PW2).

"...The tablets that they are giving to us have changed now they give us a wider variety. They include also the tablet that you put in a glass of water yet in the past they were just giving us tablet for the blood" (Participant 3 from PN1).

Some participants were unaware of changes as was evident from the following expressions:

"...Nothing much has changed. Spacing of clinic visits is still the same. It is four weeks apart at the beginning and closer towards the end" (Participant 5 from MS1).

“...I do not see any difference; to me everything is still the same”
(Participant 4 from MW2).

The participants who had noticed changes were asked to comment about such changes. Different views were expressed by the participants about the changes. While some interviewees were happy about changes that improved their ANC care at the clinics, others were not happy. Out of the 20 participants who had noticed some changes, (70%, n=14) were happy about the changes and (20%, n=6) were not happy. The following quotations express the participants' views about the perceived changes:

“.....I am happy because it is for the good of my baby” (Participant 5 from PN1).

“.....I feel the current approach is much better. We get more information and I feel the baby will be more protected” (Participant 2 from PW2).

“...I am comfortable about the six weeks interval, although it is long but I was told and assured that nothing will go wrong” (Participant 3 from PN2).

Other participants verbalised that they were not happy about the change. They felt that with the BANC approach, the ANC visits were too far apart. This was expressed in the following quotes:

“...When I have the problem at home I do not know whether to go to the clinic or wait for my next appointment. I feel the dates are spaced too far apart” (Participant 2 from MS1).

“...In the past we used to attend more frequent especially when you get closer to delivery. I have noticed with this pregnancy that I have been attending the same way from the time I started the clinic I am scarred it is not safe for the baby” (Participant 5 from PW2).

“... I would have preferred to attend like we did in the past, more frequent especially towards delivery; with these long intervals, you are panicking most of the time and can’t wait for the clinic day to get assurance that everything is still fine especially with the baby. They say we need to monitor how the baby is kicking but other people say there will still be movements felt even when the baby is dead, so rather we attend more often to make sure everything is still fine” Participant 3 from MS2).

4.3.3.2 Antenatal care consultation processes

Specific processes that should be carried out during ANC consultations are outlined in the BANC Principles of Good Care and Guidelines. There are general processes that apply to all visits and specific ones that should be carried out during the first visit and specific ones during the follow-up ANC consultations. Evidence, that these processes were being carried out during ANC consultations, was observed and also checked from the records.

General ANC consultation processes

Observations were made as to whether (a) rapid appraisals were conducted in the waiting area, (b) priority was given to pregnant women requiring emergency services and (c) the principle of “ask, listen and feel” was followed during consultations. Although there were few situations observed where pregnant women required emergency treatment, priority was given to such pregnant women whenever a situation required that. Both performing the rapid appraisal in the waiting area and following the criteria of “ask, look, listen and feel” were not done in the PHC clinics (80-100%, n=49-59) of the time. Table 4.23 presents these findings.

Table 4.23: General processes during antenatal care consultations (n=59)

PROCESS OBSERVED	Number observed			
	Yes	Sometimes	No	Total
Conducting a rapid appraisal of the pregnant women in the waiting area	0 (0%)	0 (0%)	59 (100%)	59 (100%)
Following the principle of “ask, listen and feel” during consultations	0 (0%)	10 (17%)	49 (83%)	59 (100%)
Giving priority to emergency situations of pregnant women,	7 (100%)	0 (0%)	0 (0%)	7 (100%)

At both provincial and municipal PHC clinics rapid appraisals of pregnant woman in the waiting area were not conducted at all times but at both emergency care for pregnant women in need of such care were prioritised all the time. Although both health authorities were not doing well with following the principle of “ask, listen and feel” during consultations, a significant difference was observed between the health authorities ($\chi^2 = 12.456$ (N = 59), df = 1, p = .000). This principle was not followed at all in the provincial PHC clinics but was observed during (34.5%, n=10) observations in municipal PHC clinics. Table 4.24 presents the findings for both health authorities.

Table 4.24: Results per health authority: General processes during antenatal care consultation (n=59)

Observation made	Provincial Health Authority				Municipal Health Authority		Test statistics			
	Yes	No	Total		Yes	No	Total	χ^2	df	p value
Rapid appraisals conducted in the waiting area (of pregnant women)	0 (0%)	30 (100%)	30 (100%)		0 (0%)	29 (100%)	29 (100%)	No statistics computed because findings were constant		
Emergency care prioritised for pregnant women requiring such actions	3 (100%)	0 (0%)	3 (100%)		4 (100%)	0 (0%)	4 (100%)	No statistics computed because findings were constant		
Principle of “ask, listen and feel” followed during consultations	0 (0%)	30 (100%)	30 (100%)		10 (34.5%)	19 (65.5%)	29 (100%)	12.456	1	.000*

* *P-value* < .05

Furthermore, reviews of ANC records were done to check if the following aspects had been recorded: LNMP, EDD, ANC and delivery plans, future contraception, lifestyle counselling, infant feeding choices, transport arrangements, assessments for various conditions, records of dates when procedures and tests were done, results of tests and procedures, plotting of ANC graphs, clinical notes, highlighting problems listed in red, full name and qualification of the midwife assessing the pregnant woman and details of the midwife countersigning the ANC card. All these form part of the general ANC consultation process, some of them should be recorded during each ANC visit while others are recorded initially during the first visit and are subsequently adjusted as the needs arise during follow-up visits.

There were more reviews with LNMP, EDD, transport arrangements, future contraception, lifestyle counselling, infant feeding choice, ANC graphs, clinical notes and midwives' assessments of the pregnant women (54%-98%, n=639-1 177) recorded than those without such records. LNMP was recorded in the highest number of reviews (98%, n=1 177). The ANC plan, delivery plan and midwives' counter signatures on the cards were recorded in fewer reviews compared to other elements (2%-46%, n=22-550) with the midwife countersigning the card being the least frequently recorded element (2%, n=22). Figure 4.3 presents the findings in percentages of how the information was recorded.

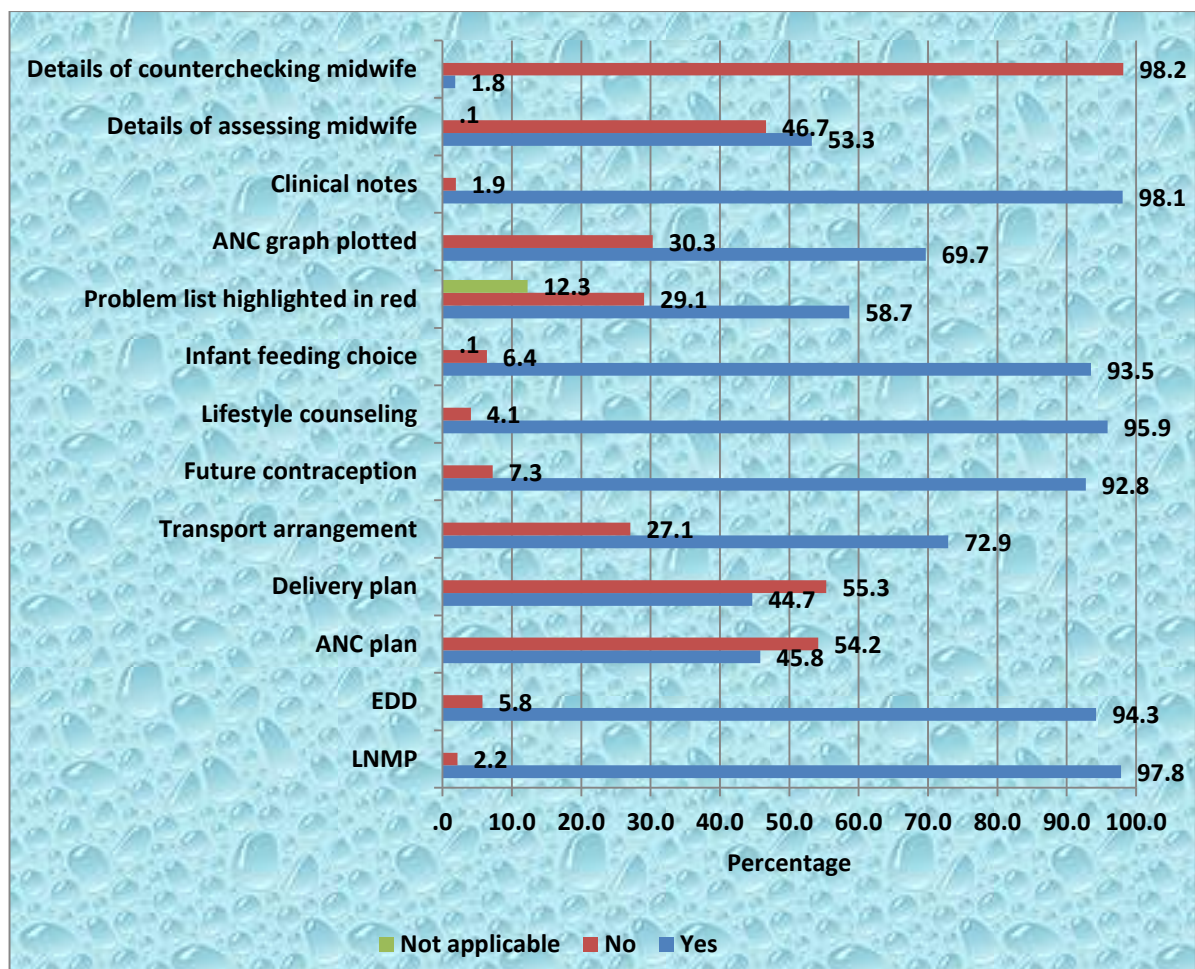


Figure 4.3: Records of antenatal care consultation processes (n=1 200)

Analyses done per health authority revealed that the following were recorded in most reviews with no differences between the two health authorities: EDD, lifestyle counselling, infant feeding choice, referrals, admission and notes for other consultations, tests and procedures recorded under clinical notes.

A significant difference was observed between health authorities with all the other processes. These processes were recorded in (33%-67%, n=191-397) in municipal PHC clinics and in (24%-81%, n=334-486) in provincial PHC clinics. There were more reviews in provincial PHC clinics than in the municipal PHC clinics with these processes recorded:

- LNMP: Provincial (99.5%, n=597) Municipal (96%, n=577) ($\chi^2 = 15.725$ (N = 1200), df = 1, p<.0005).

- ANC plan: Provincial (56%, n=334) Municipal (36%, n=216) ($\chi^2 = 46.738$ (N = 1200), df = 1, p<.0005).
- Delivery plan: Provincial (58%, n=345) Municipal (32%, n=191) ($\chi^2 = 79.963$ (N = 1200), df = 1, p<.0005).
- Transport arrangement: Provincial (81%, n=486) Municipal (65%, n=389) ($\chi^2 = 39.704$ (1, N=1200) =39.704, p<.0005).
- Problem list highlighted in red: Provincial (66%, n=394) Municipal (52%, n=310) ($\chi^2 = 34.731$ (N = 1200), df = 1, p<.0005).
- ANC graph plotted: Provincial 73% (n=439) Municipal (66%, n=397) ($\chi^2 = 6.956$ (N = 1200), df = 1, p=.008).
- Full name and qualification of midwife assessing the pregnant women recorded: Provincial (65%, n=387) Municipal (42%, n=252) ($\chi^2 = 60.585$ (N = 1199), df = 1, p<.0005).

Future contraception appeared more frequent (96%; n=576) in municipal records than in provincial ones (90%, n=537) ($\chi^2 = 34.731$ (N = 1200), df = 1, p<.0005).

The information that was poorly recorded in both health authorities was the full name and signature of the midwife counter checking the card. More than 90% of the reviews lacked this information. There were (1%, n=8) reviews from the municipal and (2%, n=14) reviews from the provincial PHC clinics that had the full name and signature of midwife counterchecking the card recorded: ($\chi^2 = 60.585$ (N = 1200), df = 1, p< .0005). The results are presented in Table 4.25.

Table 4.25: Results per health authority: Records of antenatal care consultations processes (n=1 200)

INFORMATION RECORDED	Municipal			Provincial			Test statistics		
	Yes	No	Total	Yes	No	Total	χ^2	df	P-value
LNMP	577 (96%)	23 (4%)	600 (100%)	597 (99.5%)	3 (0.5%)	600 (100%)	15.725	1	.0005*
EDD	595 (99%)	5 (1%)	600 (100%)	571 (95%)	29 (5%)	600 (100%)	1.861	1	.173
ANC plan	216 (36%)	384 (64%)	600 (100%)	334 (56%)	266 (44%)	600 (100%)	46.738	1	.0005*
Delivery plan	191 (32%)	409 (68%)	600 (100%)	345 (58%)	255 (42%)	600 (100%)	79.963	1	.0005*
Transport arrangement	389 (65%)	211 (35%)	600 (100%)	486 (81%)	114 (19%)	600 (100%)	39.704	1	.0005*
Future contraception	576 (96%)	24 (4%)	600 (100%)	537 (90%)	63 (10%)	600 (100%)	34.731	1	.0005*
Lifestyle counselling	580 (97%)	20 (3%)	600 (100%)	571 (95%)	29 (5%)	600 (100%)	1.7233	1	.189
Infantfeeding choice	563 (94%)	37 (6%)	600 (100%)	559 (93%)	41 (7%)	600 (100%)	.338	1	.561
Problem list highlighted in red	310 (52%)	290 (48%)	600 (100%)	394 (66%)	206 (34%)	600 (100%)	34.731	1	.0005*
ANC graph plotted	397 (66%)	203 (34%)	600 (100%)	439 (73%)	161 (27%)	600 (100%)	6.956	1	.008
Referral, admission and notes for other consultation, tests and procedures recorded under clinical notes	586 (98%)	14 (2%)	600 (100%)	591 (99%)	9 (1%)	600 (100%)	1.108	1	.292
Full name and qualification of midwife assessing the pregnant women	252 (42%)	348 (58%)	600 (100%)	387 (65%)	213 (35%)	600 (100%)	60.585	1	.0005*
Full name and signature of midwife counterchecking the card	8 (1%)	592 (99%)	600 (100%)	14 (2%)	586 (98%)	600 (100%)	60.585	1	.0005*

* P-value < .05

According to the BANC Principles of Good Care and Guidelines every pregnant woman, attending ANC, should be assessed for pre-eclampsia, HIV infection, malnutrition and anaemia, congenital abnormalities, foetal growth, post maturity and foetal movements during every ANC visit as part of the ANC consultation process. All pregnant women should be issued with prophylactic treatment such as haematinics (ferrous sulphate and folic acid) and calcium supplements. The ANC records were also reviewed for evidence of the assessment for these conditions and supplying of calcium. The supply of calcium was checked because the issue of this supplement came about with the introduction of the BANC approach yet issuing of the haematinics have been a standard practice even with the traditional approach. These assessments were recorded in (60%-99%, n = 683-1 192) of the reviews. Assessment for pre-eclampsia was recorded in the majority of the reviews (99%; n=1192) and fewer reviews had assessments done for congenital abnormalities recorded (60%; n=683). Figure 4.4 provides a graphic presentation of findings on the assessment for specific conditions.

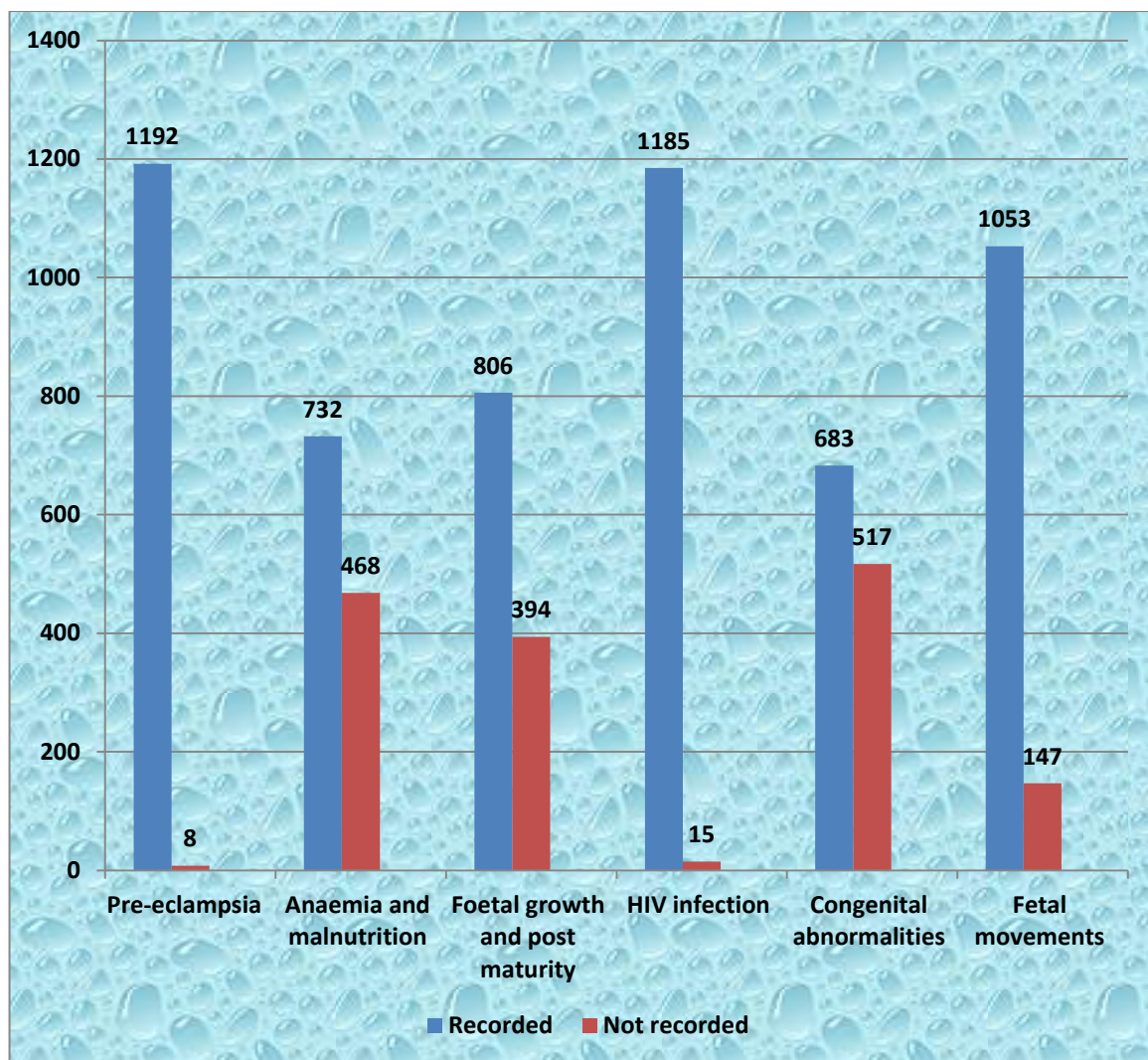


Figure 4.4: Assessments for conditions in Primary Health Care clinics (n=1 200)

Most reviews (87-100%, n=522-600) from each of the health authorities had assessments for pre-eclampsia, HIV infection and foetal movements recorded. Other assessments were recorded in (68%, n=406-408) reviews from the provincial PHC clinics and (46-66.5%, n=277-399) reviews in municipal PHC clinics. More reviews from the provincial PHC clinics (68%; n=408) than from the municipal PHC clinics (54%, n=324) had assessments for anaemia and malnutrition recorded ($\chi^2 = 25.110$ (N = 1199), df = 1, p<.000).

More reviews in provincial PHC clinics (68%, n=406) than in the municipal PHC clinics (46%, n=277) had records for congenital abnormality ($\chi^2 = 56.552$ (n = 1 200), df = 1, p<.0005).

There were no significant differences between the health authorities ($\chi^2 = 242$ (N = 1 200), df = 1, p=.625) with regard to recording of the assessment for foetal growth and post maturity though there were slightly more reviews from the provincial PHC clinics (68%; n=407) and fewer reviews from the municipal PHC clinics (67%; n=399). These findings are presented in Figure 4.5.

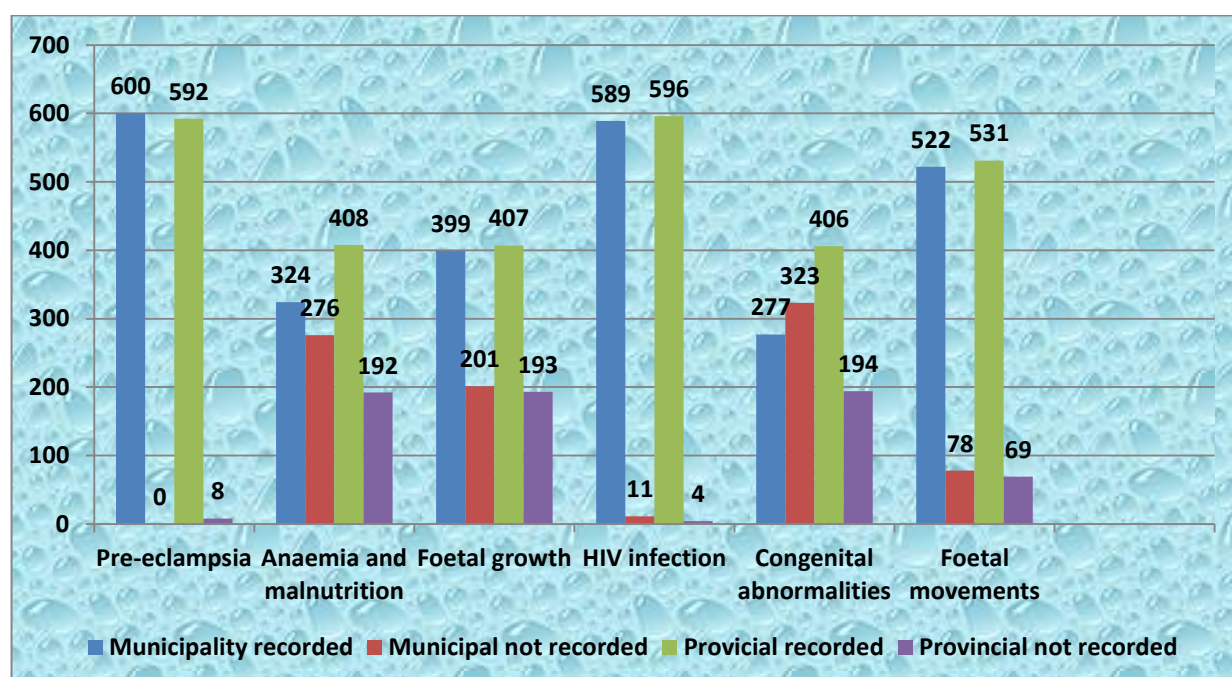


Figure 4.5: Results per health authority: Assessments for conditions in health authorities (n=600)

Processes during first antenatal care visit consultation

Observations were done on how processes that, according to the BANC Principles of Good Care and Guidelines, should be carried out during the first ANC visit's consultation were performed. The processes observed included whether a full physical examination, including a vaginal examination, was done, whether a Pap smear was done according to protocol and whether rapid tests were used to perform routine tests (HB, HIV, RH and RPR).

It was observed that a full physical examination, including a vaginal examination, was done during the first visit (74.1%, n=43) of the time. However, the clinics were not doing well with the other observed processes. Rapid screening tests were only used for routine tests (42.2%, n=25) of the time and Pap smears were done (47.4%, n=27) of the time. Table 4.26 presents the findings of how the first ANC visits' consultation processes were performed.

Table 4.26: Processes followed during the first antenatal care visits (59)

	Yes always	Yes sometimes	No	Total
Rapid screening tests used for routine screening	25 (42.4%)	14 (23.7%)	20 (33.9%)	59 (100%)
Full physical including vaginal examination done on first visit	43 (74%)	11 (19%)	4 (6.9%)	58 (100%)
Pap smear done according to protocol	27 (47.4%)	14 (24.6%)	16 (28.1%)	57 (100%)

There were no significant differences between the two health authorities with regard to performance of full physical examinations, including vaginal examinations, and doing Pap smears according to the protocol. The former process was performed (70%, n=20) of the time in the Municipal authority and (73.3%, n=22) in Provincial Health authority ($\chi^2 = .114$ (N = 58), df = 2 p=.945) and the latter of the time (46.7%, n=14) in the Municipal authority and (46%, n=13) in Provincial Health authority ($\chi^2 = .019$ (N = 57), df = 2 p=.990). A significant difference ($\chi^2 = 22.990$ (N = 1200), df = 2 p<.000) was observed in the use of rapid tests for screening which were used most often in the provincial PHC clinics (66.7%, n=20 of the time) and used less often in the municipal PHC clinics (16.7%, n=5 of the time). Table 4.27 presents findings on first ANC processes per health authority.

Table 4.27: Results per health authorities: Process followed during the first antenatal care visit (n=59)

Observations made	Provincial Health Authority				Municipal Health Authority				Test statistics		
	Yes always	Sometimes	No	Total	Yes always	Sometimes	No	Total	χ^2	df	P value
Full physical examination, including vaginal examination, done on first visit	22 (73.3%)	5 (16.7%)	3 (10%)	30 (100%)	20 (70.0%)	6 (20.0%)	3 (10%)	29 (100%)	.114	2	.945
Pap smear done according to protocol	13 (46%)	7 (25%)	8 (29%)	28 (100%)	14 (46.7%)	7 (23.3%)	8 (26.7%)	29 (100%)	.019	2	.990
Rapid screening tests used for routine screening	20 (66.7)	0 (0%)	10 (33.3%)	30 (100%)	5 (16.7%)	14 (46.7)	10 (33.3%)	29 (100%)	22.990	2	.000*

* *P-value* < .05

During record reviews, the assessment with regards to the first ANC visit's consultation processes included checking whether various activities were recorded such as the date for when the tests were done and results of tests and whether actions were implemented based on abnormal findings. The activities included: (a) history taking, (b) full physical examination for all pregnant women including vaginal examination and Pap smear, (c) routine tests, (d) other tests including screening for TB and HIV and (e) supplying prophylactic treatment to the pregnant women including calcium supplements.

History, routine investigations, HIV screening, physical examination and supply of calcium supplements to the pregnant women were recorded in the majority of reviews (86-100%, n=1 031-1 200). The other activities/tests were recorded in fewer reviews (27-70%, n=311-829). The least recorded was the consent to HIV testing which was signed in (27%, n=311) of the records only.

The dates when all the activities were performed was recorded in (99.4-100%, n=459-1200) of the reviews for all activities in all PHC clinics.

The results for the tests and activities were recorded in about (97-99.9%, n=473-1199) reviews except for the results for Pap smear which was only recorded in (43%, n=197) out of 459 records that had recorded that Pap smears were done.

Actions in response to abnormal findings were recorded in more than (80-95%, n =156-310) of the reviews for all activities and tests except for TB for which actions were only recorded in (45%, n=128) of the reviews out of 286 reviews that had abnormal findings on TB recorded. Table 4.28 presents findings for the first ANC visit consultation processes obtained from record reviews.

Table 4.28: Evidence of first visit antenatal care consultation processes recorded in the maternity case records (n=1 200)

Assessment	Done		Date recorded		Results recorded		Repeated in due time		Action on abnormal findings	
	yes	no	yes	no	yes	no	yes	no	yes	no
Test/activity										
History	1200 (100%)	0 (0%)	1200 (100%)	0 (0%)	1199 (99.9%)	1 (0.1%)	n/a	n/a	156 (80%)	40 (20%)
Routine investigations	1048 (87%)	151 (13%)	1196 (99.7%)	4 (0.3%)	1141 (95%)	59 (5%)	898 (75%)	299 (25%)	263 (84%)	49 (16%)
Other investigations	613 (67%)	303 (33%)	599 (99.7%)	2 (0.3%)	473 (79%)	128 (21%)	n/a	n/a	192 (87%)	29 (13%)
Informed consent	311 (27%)	857 (73%)	311 (100%)	0 (0%)	n/a	n/a	n/a	n/a	n/a	n/a
HIV screening	1174 (98%)	26 (2%)	1183 (100%)	0 (0%)	1183 (100%)	0 (0%)	519 (74%)	184 (26%)	485 (99.4%)	3 (0.6%)
TB screening	634 (53%)	566 (47%)	640 (99.7%)	2 (0.3%)	554 (87%)	86 (13%)	n/a	n/a	128 (45%)	158 (55%)
Physical examinations	1083 (90%)	117 (10%)	1197 (100%)	0 (0%)	1196 (99.9%)	1 (0.1%)	n/a	n/a	92 (83%)	19 (17%)
Pap smears	462 (51%)	440 (49%)	459 (99.4%)	3 (0.6%)	197 (43%)	262 (57%)	n/a	n/a	30 (83%)	6 (17%)
Vaginal examinations	829 (70%)	361 (30%)	827 (99.7%)	2 (0.3%)	826 (99.6%)	3 (0.4%)	n/a	n/a	310 (95%)	17 (5%)
Ultra Sound	674 (56%)	526 (44%)	650 (99.7%)	2 (0.3%)	601 (92%)	50 (8%)	n/a	n/a	18 (95%)	1 (5%)
Calcium supplements	1031 (86%)	169 (14%)	1031 (100%)	0 (0%)	n/a	n/a	918 (89%)	112 (11%)	n/a	n/a

History taking, routine investigations, HIV screening, physical examinations, and issuing supplies of calcium were all recorded in more than 80% of the reviews in the PHC clinics of both health authorities. Informed consent for HIV testing was recorded in fewer than 50% of the reviews in the PHC clinics of both health authorities where there were (33%, n=193) reviews in the municipal authority and (20%, n=118) in provincial Health authority with this recorded. Pap smears were recorded in (49%, n=230) reviews in the Municipal authority and (54%, n=232) in Provincial Health authority. Ultra sound (sonars) were recorded in (45%, n=268) reviews in the Municipal authority and (68%, n=406) in provincial Health authority. On the other hand TB screening was recorded in fewer of the reviews (49%, n=293) in the provincial PHC clinics and in more of the reviews (57%, n=342) in municipal PHC clinics. Other investigations and vaginal examinations were recorded in more than 60% of the reviews in PHC clinics of both health authorities where

Other investigations such as CD 4 cell count, Viral Load, full blood count, Urine for Microscopy, culture and Sensitivity and other tests as required were recorded in (71%, n=331) in the Municipal and in (63%, n=282) in provincial health authority and vaginal examinations were recorded in (61%, n=365) in municipal and (78%, n=468) in provincial health authority

There were an equal number of reviews in both health authorities for history taking (100%, n=600) and HIV testing (98%, n=588).

There were more reviews from provincial PHC clinics than from municipal PHC clinics with regard the following records:

- Physical examinations: provincial (93%, n= 560) and municipal (87%, n=523) ($\chi^2 = 12.965$ (N = 1200), df = 1 p<0005).
- Vaginal examinations: provincial (78%, n= 468) and municipal (61%, n=365) ($\chi^2 = 46.719$ (N = 1190), df = 1 p<0005).
- Pap smears: provincial (54%, n=232) and municipal (49%, n=230) ($\chi^2 = 2.048$ (N = 902), df = 1 p= .152).
- Ultra sound examinations: provincial (68%, n=406) and municipal (45%, n= 268) ($\chi^2 = 64.461$ (N = 1200), df = 1 p< .0005).

- Supplying of calcium supplements: provincial (87%, n=519) and municipal (86%, n= 513) ($\chi^2=.261$ (N = 1199), df = 1 p= .609)

On the other hand more reviews from municipal PHC clinics than from provincial PHC clinics had the following recorded:

- Routine investigations: municipal (88%, n= 525) and provincial (87%,n= 524) ($\chi^2= .063$ (N = 1199), df = 1 p= .802).
- Other investigations: municipal (71%, n=331) and provincial (63%, n=282) ($\chi^2= 6.259$ (N = 916), df = 1 p= .012).
- Informed consent for RVD: municipal (33%, n=193) and provincial (20%, n=118) ($\chi^2= 26.434$ (N = 1168), df = 1 p= .000).
- TB screening: municipal (57%, n=342) and provincial (49%, n=293) ($\chi^2= 8.192$ (N = 1200), df = 1 p= .004).

Table 29 presents results for whether tests or activities were recorded.

Table 4.29: Results per health authority: Activities and tests recorded in the maternity case record cards (n=1 200)

Assessment done	Done									
	Municipal				Provincial				Test statistics	
	Yes	No	Total		Yes	No	Total		χ^2	P-value
Health authority Findings										
History	600 (100%)	0 (0%)	600 (100%)		600 (100%)	0 (0%)	600 (100%)		.000	1.000
Routine investigations	525 (88%)	75 (12%)	600 (100%)		524 (87%)	76 (13%)	600 (100%)		.063	.802
Other investigations	331 (71%)	137 (29%)	468 (100%)		282 (63%)	166 (37%)	448 (100%)		6.259	.012*
Informed consent	193 (33%)	395 (67%)	588 (98%)		118 (20%)	470 (80%)	588 (100%)		26.434	.000*
HIV screening	588 (98%)	12 (2%)	600 (100%)		588 (98%)	12 (2%)	600 (100%)		.000	1.000
TB screening	342 (57%)	258 (43%)	600 (100%)		293 (49%)	307 (51%)	600 (100%)		8.192	.004*
Physical examinations	523 (87%)	77 (13%)	600 (100%)		560 (93%)	40 (7%)	600 (100%)		12.965	.0005*
Pap smears	230 (49%)	240 (51%)	470 (100%)		232 (54%)	200 (46%)	432 (100%)		2.048	.152
Vaginal examinations	365 (61%)	235 (39%)	600 (100%)		468 (78%)	132 (22%)	600 (100%)		46.719	.0005*
Ultra sound	268 (45%)	332 (55%)	600 (100%)		406 (68%)	194 (32%)	600 (100%)		64.461	.0005*
Calcium supplements	513 (86%)	87 (14%)	600 (100%)		519 (87%)	81 (13%)	600 (100%)		.261	.609

* *P-value* < .05

The dates when tests and procedures were done were recorded in (99-100%%, n=258-600) of the reviewed records from both health authorities though there were a few records from both authorities (minimum one, maximum three) where some dates were not recorded. Table 4.30 presents the results indicating whether the dates were recorded. As indicated on Table 4.30 there were no significant differences between the health authorities noted on further testing with regards to recording of dates for when the tests and procedures were done.

Table 4.30: Results per health authority: Records of dates when activities and tests were done (200)

Assessment done	Date								
Health authority	Municipal				Provincial			Test statistics	
Findings	yes	no	Total		yes	No	Total	χ^2	P value
History	600 (100%)	0 (0%)	600 (100%)		600 (100%)	0 (0%)	600 (100%)	.000	1 1.000
Routine investigations	597 (99.5%)	3 (0.5%)	600 (100%)		599 (99.8%)	1 (0.2%)	600 (100%)	1.003	1 .317
Other investigations	316 (99%)	2 (1%)	318 (100%)		283 (100%)	0 (0%)	283 (100%)	1.786	1 .181
Informed consent	193 (100%)	0 (0%)	193 (100%)		117 (100%)	0 (0%)	117 (100%)	No statistics computed because findings were constant	
HIV screening	592 (100%)	0 (0%)	592 (100%)		591 (100%)	0 (0%)	591 (100%)	.000	1 1.000
TB screening	346 (99.7%)	1 (0.3%)	347 (100%)		294 (99.6%)	1 (0.4%)	295 (100%)	642	1 .908
Physical examinations	600 (100%)	0 (0%)	600 (100%)		597 (99.5%)	3 (0.5%)	600 (100%)	.000	1 1.000
Pap smears	228 (99.5%)	1 (0.5%)	229 (100%)		231 (99%)	2 (1%)	233 (100%)	462	1 .573
Vaginal examinations	358 (99%)	2 (1%)	360 (100%)		469 (100%)	0 (0%)	469 (100%)	829	1 .106
Ultra sound	258 (99%)	2 (1%)	260 (100%)		392 (100%)	0 (0%)	392 (100%)	652	1 .082
Calcium supplements	511 (100%)	0 (0%)	511 (100%)		519 (100%)	0 (0%)	519 (100%)	.000	1 1.000

* $P\text{-value} < .05$

The results for all the tests and procedures were recorded in (72-100%, n=228-600) of the reviews from both health authorities except for the results for Pap smears which were recorded in (32%, n=73) in the municipal and

(53%, n=124) of the provincial PHC clinics' charts ($\chi^2 = 21.227$ (N = 459), df = 1 p<.0005).

Table 4.31: Results per health authority: Record of results for the activities and test done

Assessment done	Results								
Health authority	Municipal				Provincial			Test statistics	
Findings	yes	no	Total		yes	no	Total	χ^2	P value
History	593 (99%)	7 (1%)	600 (100%)		600 (100%)	0 (0%)	600 (100%)	1.001	.317
Routine investigations	554 (92%)	46 (8%)	600 (100%)		587 (98%)	13 (2%)	600 (100%)	19.412	.000*
Other investigations	228 (72%)	88 (28%)	316 (100%)		243 (86%)	40 (14%)	283 (100%)	16.375	.000*
HIV screening	592 (100%)	0 (0%)	592 (100%)		591 (100%)	0 (0%)	591 (100%)	.000	1.000
TB screening	291 (84%)	55 (16%)	346 (100%)		263 (89%)	31 (11%)	294 (100%)	3.914	.048*
Physical examination	600 (100%)	0 (0%)	600 (100%)		596 (99%)	4 (1%)	600 (100%)	1.006	.316
Pap smear	73 (32%)	154 (68%)	227 (100%)		124 (53%)	108 (47%)	232 (100%)	21.227	.000*
Vaginal examination	357 (99%)	3 (1%)	360 (100%)		469 (100%)	0 (0%)	469 (100%)	3.923	.048*
Ultra sound	186 (84%)	36 (16%)	222 (100%)		378 (96%)	14 (4%)	392 (100%)	23.462	.000*

* P-value < .05

A significant difference was also noted with the recording of results for:

- Routine investigations: municipal (92%, n=554) and provincial (98%, n=587) ($\chi^2 = 19.412$ (N = 1200), df = 1 p<.0005).
- Other investigations: municipal (72%, n=228) and provincial (86%, n=243) ($\chi^2 = 16.375$ (N = 599), df = 1 p<.0005).
- TB screening: municipal (84%, n=291) and provincial (89%, n=263) ($\chi^2 = 3.914$ (N = 640), df = 1 p=.048).
- Vaginal examinations: municipal (99%, n=357) and provincial (100%, n=469) ($\chi^2 = 3.923$ (N =829), df = 1 p=.048).

- Ultra sound: municipal (84%, n=186) and provincial (96%, n=378) ($\chi^2 = 23.462$ (N = 651), df = 1 p<.0005).

Table 4.31 presents the results indicating whether the results were recorded. As presented in Table 4.32, in most cases (74%-100%) actions, taken in response to abnormal findings, were recorded. There were no significant differences between municipal and provincial PHC clinics where actions, taken in response to abnormal findings, were recorded for all activities and tests except for TB.

Table 4.32: Results per health authority: Actions taken in response to abnormal findings on the results

Assessment done	Action									
Health authority	Municipal				Provincial			Test statistics		
Findings	yes	no	Total		yes	no	Total	χ^2	df	P value
History	97 (81%)	23 (19%)	120 (100%)		59 (78%)	17 (22%)	76 (100%)	.294	1	.588
Routine investigations	128 (83%)	27 (17%)	155 (100%)		135 (86%)	22 (14%)	157 (100%)	.684	1	.408*
Other investigations	60 (74%)	21 (26%)	81 (100%)		12 (60%)	8 (40%)	20 (100%)	18.3 87	1	.000*
HIV screening	227 (99%)	2 (1%)	229 (100%)		247 (99.6%)	1 (0.4%)	248 (100%)	.369	1	.543
TB screening	40 (27%)	108 (73%)	148 (100%)		88 (64%)	49 (36%)	137 (100%)	38.9 89	1	.000*
Physical examinations	31 (86%)	5 (14%)	36 (100%)		61 (81%)	14 (19%)	75 (100%)	.391	1	.532
Pap smears	8 (80%)	2 (20%)	10 (100%)		22 (85%)	4 (15%)	26 (100%)	.111	1	.739
Vaginal examinations	139 (99%)	2 (1%)	141 (100%)		171 (92%)	15 (8%)	186 (100%)	7.18 8	1	.007*
Ultra sound	7 (87.5%)	1 (12.5%)	8 (100%)		11 (100%)	0 (0%)	11 (100%)	1.45 1	1	.228

* P-value < .05

There were fewer (27%, n=40) records in municipal PHC clinics where actions taken in response to abnormal findings of TB screening were recorded and more reviews (64%, n=88) in Provincial PPHC clinics ($\chi^2 = 38.989$ (N 286), df = 1 p<.0005). Table 4.32 presents the results of actions taken in response to abnormal findings.

Processes implemented during follow-up antenatal care consultations

There are specific tests and procedures that should be done for all pregnant women during follow-up ANC visits. The BANC Principles of Good Care and Guidelines specify the specific periods of gestation when these are to be done. According to the BANC documents, the correct timing of these tests and procedures is very important because it influences timely management of abnormal findings. Analysis of the follow-up visits included checking on the timing of repeat tests and assessing whether follow-up actions had been implemented in response to abnormal findings. Both these processes were not done well because there were no such records in more than 20% of the reviewed documents.

All repeat tests that were due during ANC period such as RPR and HIV were done in due time in (73%, n=878) reviews and not done in due time in (27%, n=322) of the reviews. Follow-up actions, in relation to previous findings, were implemented in (59%, n= 582) of the records and not done in (41%, n=412) of the cases. Table 4.33 presents the records of follow-up ANC visits' information.

Table 4.33: Record of the Processes during the follow-up antenatal care visits (n=1 200)

Process assessed	Number of reviews		
	Yes	No	Total
All repeat tests (HIV and RPR) were done in due time	878 (73%)	322 (27%)	1200 (100%)
Follow-up actions in response to previous findings	582 (59%)	412 (41%)	994 (100%)

The tests and activities that needed to be repeated were the routine investigations, HIV screening and issuing of calcium supplements to the pregnant women. Repeat tests were reportedly done in due time in:

- (75%, n=898) records for routine investigations;
- (74%, n=519) records for HIV screening; and
- (89%, n=918) records for supplying calcium supplements.

Table 4.34 presents these results.

Table 4.34: Activities and tests repeated during follow-up antenatal care visits

Process assessed	Number of reviews		
	Yes	No	Total
Routine investigations	898(75%)	299(25%)	1197(100%)
HIV screening	519(74%)	184(26%)	703(100%)
Calcium supplements	918(89%)	112(11%)	1030(100%)

There were no significant differences between the health authorities ($\chi^2 = .153$ (N = 1070), df = 1, p= .696) with repeat tests being done on due time. All repeat tests were done in due time in more than (73%, n=436) of the records of the municipal PHC clinics and in (70%, n= 442) in the PHC clinics of both health authorities. A significant difference ($\chi^2 = 30.477$ (N = 994), df = 1 p<.0005) was observed between the two health authorities with regards to follow-up actions implemented in response to previous findings where 50% (n=264) from the municipal PHC clinics' records and (68%, n= 3180) of the provincial PHC clinics' records contained this information. These results are presented in Table 4.35.

Table 4.35: Results per health authority: Processes followed during the follow-up antenatal care visit

Assessment done	Repeated									
Health authority	Municipal				Provincial			Test statistics		
Findings	Yes	No	Total		Yes	No	Total	χ^2	df	P value
All repeat test were done in due time	436 (73%)	164 (27%)	600 (100%)		442 (70%)	158 (30%)	600 (100%)	.153	1	.696
Follow up on previous findings	264 (50%)	260 (50%)	524 (100%)		318 (68%)	152 (32%)	470 (100%)	30.477	1	.000*

* P-value < .05

Although there were 70% or more reviews from each health authorities where the repeat tests were done in due time for all activities and tests, these repeat tests were not done in due time in (30%, n=158) in the provincial and to (27%, n=164) in the municipal health authority (n=135-164) ($\chi^2 = 3.814$ (N = 1197), df = 1 p=.051). A significant difference ($\chi^2 = 62.732$ (N = 1030), df = 1 p<.0005) was observed between the health authorities with the repeat of calcium

supplements which was done in (97%, n=495) of the cases in the municipal PHC clinics and in (81%, n=423) in the provincial PHC clinics. There were no significant differences ($\chi^2 = .556$ (N = 703), df = 1 p=.456) between the health authorities with regards to repeating the HIV test on time. A total of (73%, n=257) of the reviews showed that HIV tests were repeated on time in the municipal PHC clinics and in (75%, n=262) of the provincial PHC clinics' cases. Table 4.36 presents the findings per health authority.

Table 4.36: Results per health authority: Activities and tests repeated during the follow up antenatal care visit

Assessment done	Repeated									
Health authority	Municipal				Provincial			Test statistics		
Findings	Yes	No	Total		Yes	No	Total	χ^2	df	P value
Routine investigation	434 (73%)	164 (27%)	598 (100%)		464 (77%)	135 (23%)	599 (100%)	3.814	1	.051
HIV screening	257 (73%)	97 (27%)	354 (100%)		262 (75%)	87 (25%)	349 (100%)	.556	1	.456
Calcium supplements	495 97%	16 (3%)	511 (100%)		423 (82%)	96 (18%)	519 (100%)	62.732	1	.000*

* P-value < .05

4.3.4 Performance of the clinics' staff members implementing the Basic Antenatal Care approach (n=59)

An assessment was made as to whether the clinics' staff members were following the guidelines when doing procedures. It was only during (3%, n=2) of the time that the clinics' staff members were always following the guidelines. During most of the time (76%, n=45) they were sometimes following the guidelines and sometimes not and during (20%, n=12) of the time they were not following the guidelines at all. Table 4.37 presents findings on the performance of staff members implementing the BANC approach.

Table 4.37: Performance of the clinics' staff members implementing the Basic Antenatal Care approach

	Yes always	Yes sometimes	No	Total
Clinic staff following the guidelines when doing procedures	2 (3.4%)	45 (76.3%)	12 (20.3%)	59 (100%)

The results were almost the same for municipal and provincial PHC clinics where the staff members were following guidelines all the time only during (3%, n=1) of the time, sometimes following guidelines and sometimes not during more than (79.3%, n=23) of the time in the municipal and (73.3%, n=22) of the time in provincial and not following the guidelines during (17.2%, n=5) in the municipal PHC clinics and in (23.3%, n=7) in the provincial PHC clinics ($\chi^2 = .339$ (N = 59), df = 2 p=.844). These results are presented in Table 4.38.

Table 4.38: Results per health authority: Clinics' staff members' adherence to guidelines when doing procedures (n=59)

Municipal					Provincial				Test statistics		
Yes always	Yes some times	No	Total		Yes always	Yes some times	No	Total	χ^2	df	P value
1 (3.4%)	23 (79.3%)	5 (17.2%)	29 (100%)		1 (3.3%)	22 (73.3%)	7 (23.3%)	30 (100%)	.339	2	.844

* *P-value* < .05

Assessments of performance were done in various work stations and reported narratively describing how activities were performed. The narrative data were analysed and interpreted quantitatively. The areas of observation and activities observed were similar in all 12 PHC clinics. The same activities were observed for the five day observation period in each PHC clinic excluding the days when there were no ANC services in the particular PHC clinic. The services in the various areas observed were mainly provided by the following categories of staff: reception area by the clerks, observation room by the ENAs, injection and blood room by ENs, counselling room by lay counsellors and consultation room by advanced midwives and/or midwives. Table 4.39 presents various activities/procedures observed in each work station and the specific category of staff member(s) performing the activities/procedures.

Table 4.39: Activities observed in various work stations

Work station	Procedures done	Procedure mostly done by
Reception	Registration Enquiry	Clerks
Observation room	Blood Pressure Urine Testing	Enrolled Nursing Assistants
Blood Room	Taking of blood Rapid tests	Enrolled Nurses
Injection Room	Giving of injection	Enrolled Nurses
Counselling Room	Group Counselling	Lay counsellors
Consultation Room	First visit consultation Repeat visit consultation	Midwives and Advanced midwives

Observations were done in the reception area and in observation, blood, injection, counselling and consultation rooms. The focus was on how the staff members performed the procedures in these workstations. This enabled the researcher to assess how each category of staff performed their duties. All the activities by the ENs and LCs which included performing rapid tests, giving of injections and conducting group counselling sessions were done correctly all the time except taking of blood which was done incorrectly 5.3% (n=3) of the time. What was not done correctly when taking blood included not following aseptic technique and not following instructions regarding shaking or not shaking the blood specimen tube after filling it with blood.

The activities done by the ENAs included urine testing which was done correctly (82.8%, n=49) of the time and BP checking which was done correctly (93%, n=55) of the time. What was done incorrectly by the ENAs was mostly the technique for performing the procedure; for an example, with urine testing, correct timing before reading the test strip was not ensured and the test strips readings were not compared with the guide on container. Those done by the clerks included registration of the pregnant women at reception which was done correctly (73.3%, n=43) of the time and attending to enquiries which was done correctly (77.3%, n=46) of the time. What was done incorrectly by the clerks was mainly their attitude towards the pregnant women. The activities that were done poorly were those done by the advanced midwives and midwives. These included consultations during the first ANC visit which were

done correctly (39.3%, n=22) and incorrectly during (60.7%, n=34) of the time and repeat ANC visits which were done correctly during (11.7%, n=7) and done incorrectly during (88.3%, n=35) of the time. The midwives were not using the Principles of Good Care and guideline document as a reference as they are supposed to do thus most of the steps during consultation were omitted. These findings are presented in Figure 4.6.

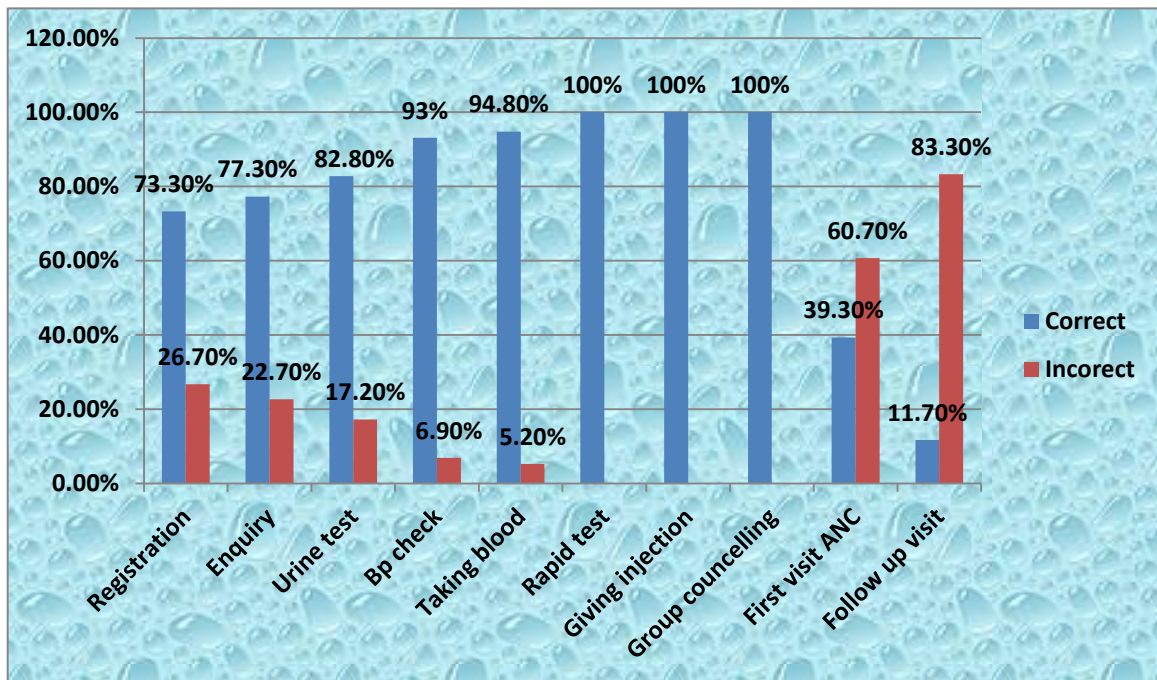


Figure 4.6: Performance of procedures at various work stations in the Primary Health Care clinics

Further analysis, done per health authority, revealed that the rapid tests, giving of injections and group counselling were all done correctly all the time in both health authorities. Some differences were observed with regards to the other activities. While in the provincial PHC clinics attending to pregnant women who came for enquiries, registration of pregnant women, performing urine testing, blood pressure checking, performing rapid tests and taking of blood were all done correctly (76%-100%, n=23-30) of the time. These activities were done correctly between (62%-89%, n=18-26) of the time in the municipal PHC clinics. Further testing between the health authorities revealed the following:

- Attending to pregnant women who came for enquiry was done correctly (100%, n=30) most of the time in Provincial compared to (62%, n=18) in municipal health authority ($\chi^2 = 2.764$ (N = 60), df = 1 p=.536).
- Registration of pregnant women at reception was done correctly (76 %, n=23) most of the time in Provincial compared to (70%, n=20) in municipal health authority ($\chi^2 .086$ (N = 42), df = 1p=.770).
- Performing urine testing was done correctly (100 %, n=30) most of the time in Provincial compared to (63 %, n=18) in municipal health authority ($\chi^2 12.946$ (N = 58), df = 1 p=.000).
- BP checking was done correctly (100 %, n=30) most of the time in Provincial compared to (85%, n=25) in municipal health authority ($\chi^2 4.603$ (N = 58), df = 1p=.032).
- Taking of blood was done correctly (100%, n=30) most of the time in Provincial compared to (89%, n=26) in municipal health authority ($\chi^2 3.390$ (N = 58), df = 1p=.066).

Significant differences were observed with regard to the ANC consultations. The first ANC visit consultation was done correctly (11%, n=3) of the time in the municipal PHC clinics and (68%, n=20) of the time in the provincial PHC clinics ($\chi^2 19.166$ (N = 56), df = 1 p=.000). The repeat visit consultations were done correctly (14%, n=4) of the time in the municipal and (10%, n=3) of the time in the provincial PHC clinics with both health authorities doing the repeat ANC visits' consultations incorrectly more than 80% of the time ($\chi^2 .086$ (N = 42), df = 1p=.770). These findings are presented in Figure 4.7.

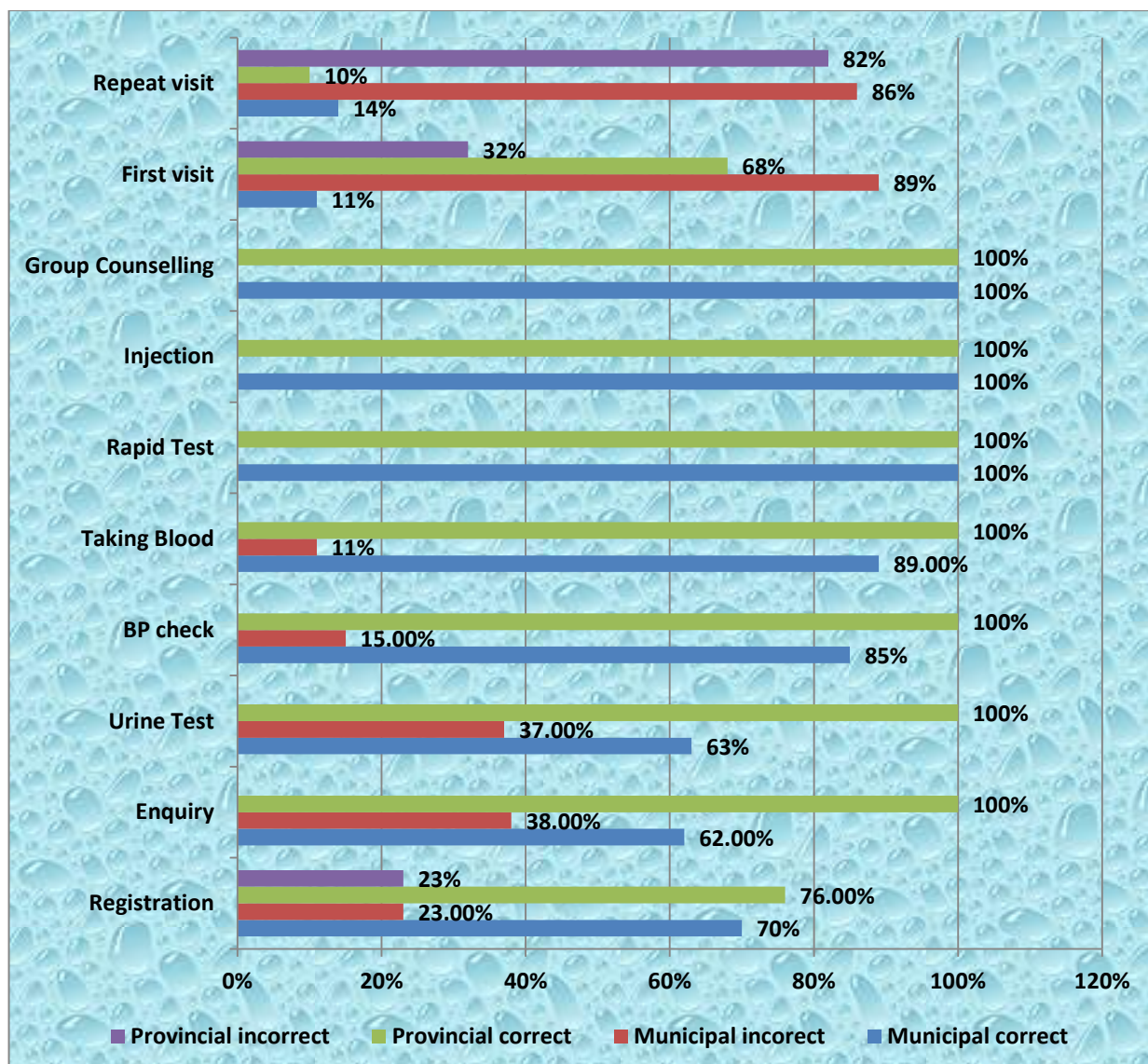


Figure 4.7: Results per health authority: Performance of procedures at various work stations

The information gathered during the interviews revealed that whilst some participants were satisfied with the performance of the clinics' staff members other participants were dissatisfied. Satisfaction with the performance of the healthcare workers was expressed by the interviewed pregnant women in the following ways:

"...Very good care; the sister is amazing very patient even when she is checking the baby's heart she takes her time. She is approachable" (Participant 4 from MW2).

“...The sisters explain what they are doing; they are very approachable and good” (Participant 4 from MW1).

Dissatisfaction of the participants with the performance of the clinics' staff members was evident from the following statements as expressed by the participants:

“...I feel the first nurse did not know what she was doing, the second nurse was better. The first nurse did not even know that she had to change my ARV treatment now that I am pregnant until she was asked to do so by another nurse” (Participant 2 from MW2).

“.....The nurse gave me tablets which she said I must take once a day. The other pregnant women told me that was wrong and said that the tablets are to be taken once a week because they are harmful to the baby. I feel the pregnant women were right because the supply that I was given got finished within one week and I had no more tablets to take yet if I had taken them once a week like the other pregnant women they would have lasted longer until I got back to the clinic for more supply” (Participant 2 from MW2).

“...The nurses in my first clinic did strange things when they were examining us as a result for me they were not able to feel the baby and had to refer me to hospital. Even the hospital confirmed that these nurses did not know what they were doing. I could not go back to that clinic so I decided to come here even if it means paying for transport” (Participant 3 from MS2).

Some participants compared the performance of the clinics' staff members and they viewed some staff members to have better skills than others. This was noted in the following comments by the participants:

“...The first nurse asked me some questions and thereafter asked me to come back the following Wednesday. It was only when I met the elderly nurse that I was checked properly. I feel the first nurse did not know what to do” (Participant 2 from MW2).

“...Sometimes you choose certain individuals whom you know and trust they will give you better care because others; hm!” (Participant 3 from PN1).

The participants also verbalised their concerns about how the clinics’ staff members performed their duties. They commented about the lack of consistency in the information and instructions given by the clinics’ staff members to the pregnant women. They were also not happy about the speed at which the clinics’ staff members were working. This was revealed by the following statements by the participants:

“...Sisters work well in the morning but after lunch things got delayed. Only one sister continues to work and doing everything that is there to be done for the patients including bloods and urine as the result things are too slow in the afternoon” (Participant 3 from MW1).

“...Although they do well but I feel they need to follow the card. They also do not give any explanation I would prefer that they explain things to us otherwise they are ok” (Participant 2 from PW1).

The manner in which the clinics’ staff members performed their duties influenced the missed opportunities occurring in the clinics. The researcher identified several missed opportunities from the statements made by the participants. In these situations the healthcare workers missed opportunities to render services to pregnant women. The majority of these situations were in relation to the timing of first ANC visits. These situations became from the following statements by the participants:

“...I came to the clinic to do a pregnancy test; I was told I am pregnant and motivated me to accept it and they did not offer me any options and did not offer me to start the clinic. I came back again after two weeks to do HIV test because I was worried that may be I am also HIV positive and still they did not make me to start the clinic. On the third visit I came for ANC” (Participant 1 from MW2).

“...They sent me back home and I came back after two months because they had said I must start ANC after three months” (Participant 3 from MW2).

The results showed that the majority of the missed opportunities were as a result of the actions of the clinic staff members but they affected the pregnant women. This is noted in the following comments by the participants:

“...I felt something funny in my tummy and came to the clinic to check. They told me that I am pregnant and advised me to come back in three months which I did but when I came they scolded me that I was late because by then I was five and a half month pregnant” (Participant 1 from PW1).

“...I came, I was one month pregnant and I was sick. They told me it was too early I must come back later but did not give me the date when to come back. I decided to stay at home and only came back to the clinic when I was six months pregnant because I know I always give birth normally with no problems” (Participant 5 from PN1).

“.....I was given the ANC card at the clinic where I did the pregnancy test but they did not do anything to me neither did they write anything in the card. When I went with the same card in the farms they refused to see me and told me to go back to the clinic where I got the card. I did not want to go back to that clinic and decided to come to this clinic” (Participant 5 from MW2).

Whilst it was noted that the majority of the missed opportunities were caused by the staff members, it was also noted that in a few situations, the missed opportunities were caused by the pregnant women themselves. This was evident from the following statement by one participant:

“...They did a pregnancy test and told me I am pregnant, they did not offer me any options but advised me to start ANC. I was rushing to school so I went away and did not wait to be seen by the sister” (Participant 2 from PW1).

Some of the missed opportunities resulted in untoward outcomes such as loss of life, as indicated by one participant who stated:

“...Once I came to the clinic in the afternoon, I was sick and bleeding. They told me it was late. I was satisfied because I could also see it was late. I had to find transport to proceed to hospital. This was for the baby that I lost”
(Participant 2 from MW2).

4.3.5 Commitment of the people involved in the Basic Antenatal Care approach

An assessment was done for both the clinics’ staff members and the pregnant women to check how committed they were to ANC. Commitment of the clinics’ staff members to ANC service provision was assessed by observing whether they were spending most of their time attending to the pregnant women and actively working. The clinics’ staff members were spending most of the time attending to the pregnant women and actively working in the majority of PHC clinics during (66%, n=39) of the observations and during (34%, n=20) of the observations staff members were sometimes spending time attending to patients and actively working. Table 4.40 presents these results.

Table 4.40: Commitment of the clinics’ staff members to antenatal care service provision (n=59)

	Yes always	Yes sometimes	No	Total
Staff spending most of the time attending to pregnant women and actively working	39 (66%)	20 (34%)	0 (0%)	59 (100.0%)

Clinics’ staff members from both health authorities were always spending most of the time attending to pregnant women and actively working about 60% of the time where this was observed during (69%, n=20) in the municipal and during (63%, n=19) of the time in provincial health authority These results are presented in Table 4.41.

Table 4.41: Results per health authority: Commitment of clinics' staff members to antenatal care service provision (n=59)

	Municipal				Provincial			Test statistics		
	Yes always	Yes some times	Total		Yes always	Yes some times	Total	χ^2	df	P value
Clinic staff spending most time attending to pregnant women and actively working	20 (69%)	9 (31%)	29 (100%)		19 (63%)	11 (37%)	30 (100%)	.209	1	.648

* *P-value* < .05

Commitment of the pregnant women to their care was assessed during the interviews. It was noted from the comments of the participants that the pregnant women differed in their commitment to ANC. The comments of some participants showed assertiveness, others showed dissatisfaction whilst others showed that they trusted the nurses. Assertiveness was identified by the following comments:

“...I had to fight and force that I am attended to. At first they told me that I arrived late so I must come the next day I insisted to be seen. Later on they told me that the HIV counsellor who was supposed to do an HIV test for me before I am attended to was going for lunch so I must go home and come back some other time. I could not go home without being seen, I had taken a leave without pay from work. I requested to see the Sister in-charge and finally myself and other pregnant women who were being chased away with me were attended to otherwise if it was not for me we would have all gone home without being seen that day” (Participant 3 from PN1).

“....the sister was angry with me but I didn't care; it was my right to find out why certain things that are indicated in my card have not been done. It is my life and my baby's life I cannot compromise it” (Participant 1 from PS2).

“... I had to tell the sister who was scolding and shouting at me for being pregnant , young and HIV positive that yes I am HIV positive and may

be it is my fault but I am still a human being and deserve to be treated like one” (Participant 4 from MW1).

The comments from participants who were dissatisfied included the following:

“...I had to phone my mother at home for some advice because I could not understand why they did not do a Pap smear for me yet according to my card it was supposed to be done. My mother is not a nurse but she has been pregnant before so I thought she would have an idea and also just for her to advise me what to do about it” (Participant 1 from PN2).

“...When checking on my card most of the things have been done except for the Pap smear I am not sure why they have not done it or when it is supposed to be done or whether they are still going to do it. Nobody has said anything, usually they do not tell I have to read my card to know and unfortunately I do not understand some of the things” (Participant 2 from MN1).

“...Some of the things that are indicated on the card were not done but other people told me that other procedures are not done in this clinic so I am not satisfied” (Participant 2 from PW1).

Those who trusted the clinic staff members and accepted and were satisfied with whatever was offered to them stated:

“...I cannot say that all was done because I am pregnant for the first time, but they know better; so I am sure they did all they were supposed to do for me. I listen to them and follow what they ask me to do” (Participant 5 from PW1).

“...They do what is being done everywhere across the board. They do have the right to give us instructions” (Participant 2 from MS1).

“.....We can’ expect to be here every day. We are taught how to take care of ourselves so we need to learn and follow the orders” (Participant 2 from PS2).

“...I am not involved but I am satisfied with not being involved because the nurses know what is best for me” (Participant 2 from MS2).

4.3.6 Communication in the Primary Health Care clinics

Oakland (2008:23) stated that communication is essential to provide relevant information, convey good practices and generate interest, ideas and awareness. In the current study communication in the PHC clinics was assessed by observing whether the following were done: a) clear directions and instructions given to pregnant women about clinic procedures, b) pregnant women informed about examinations' findings, c) communication with referral institution d) EMRS responding to emergency calls within two hours and e) plan of pregnancy management compiled in consultation with the pregnant women. The results of the study revealed that most of these were not happening in most PHC clinics.

The only aspect of communication that was observed most of the time was communication with referral institutions which was observed 100% of the time when there was a need to do so. However, these findings were not conclusive because of the limited number of situations that necessitated these actions. Clear directions and instructions about clinic procedures were given to pregnant women (51%, n=30) of the time.

Table 4.42: Communication in the Primary Health Care clinics

	Yes	Some times	No	Total
Clear directions and instructions given to pregnant women about clinic procedures	30 (51%)	22 (37%)	7 (12%)	59 (100%)
Pregnant women informed about examination findings	9 (15%)	45 (76%)	5 (9%)	59 (100%)
Communication with referral institution	5 (100%)	0 (0%)	0 (0%)	5 (100%)
EMRS responding to emergency calls within two hours	2 (40%)	0 (0%)	3 (60%)	5 (100%)
Plan of management drawn in consultation with the pregnant women.	2 (3%)	7 (12%)	50 (85%)	59 (100%)

All the other aspects of communication were observed less than 50% of the time. The least performed activity was compiling a plan of pregnancy management which was not done in consultation with the pregnant women (85%, n=50) of the time. Table 4.42 presents findings pertaining to communication.

No observed situations in the provincial PHC clinics required communication with referral institutions and EMRS. Although there were some situations observed in the municipal PHC clinics, these were too few to draw conclusions. Nevertheless, of all the situations observed, communication with referral the institution was always possible but EMRS responded to emergency calls within two hours only (40%, n=2) of the time.

All the aspects of communication observed were done poorly in both health authorities except for giving clear directions and instructions to pregnant women about clinic procedures which was observed (77%, n=23) of the time in provincial PHC clinics but done correctly (24%, n=7) in municipal health authority ($\chi^2 = 24.536$ (N = 59), df = 1 p< .0005). The most poorly done communication aspect was compiling a plan of pregnancy management in consultation with the pregnant woman, which was observed only (3%, n=1) of the time in both health authorities. The results are presented in Table 4.43.

Table 4.43: Results per health authority: Communication

	Municipal				Provincial				Test statistics		
	Yes always	Yes some times	No	Total	Yes always	Yes some times	No	Total	χ^2	df	P value
Clear directions and instructions given to pregnant women about clinic procedures	7 (24%)	20 (69%)	2 (7%)	29 (100%)	23 (77%)	2 (7%)	5 (17%)	30 (100%)	24.536	2	.000*
Pregnant women informed about examination findings	9 (31%)	20 (69%)	0 (0%)	29 (100%)	0 (0%)	25 (83%)	5 (17%)	30 (100%)	14.543	2	.001*
Communication with referral institutions	5 (100%)	0 (0%)	0 (0%)	5 (100%)	No situations presented requiring communication with referral institutions				Not applicable		
EMRS responding to emergency calls within two hours	2 (40%)	0 (0%)	3 (60%)	5 (100%)	No emergency situations requiring EMRS responding				Not applicable		
Plan of pregnancy management compiled in consultation with the pregnant women.	1 (3%)	4 (14%)	24 (83%)	29 (100%)	1 (3%)	3 (10%)	26 (87%)	30 (100%)	.206	2	.902

* *P-value* < .05

The extent and nature of communication between the clinics' staff members and the pregnant women was also assessed based on the comments that were made by the participants during the interviews. Some of the participants verbalised that they had not been given complete information about the ANC service and other relevant issues regarding their care. The following were the comments from the participants:

"...I know the clinic is open all the time even on Sunday but I am not sure whether they attend to pregnant women on Sundays" (Participant 3 from PW1).

"...On my third visit the nurse scolded me for not knowing how to position in bed. She asked me if I was not taught during my first visit. I was never taught this before in fact it was the first time during my third visit that I was made to lie on the couch and also it is the first time that I am pregnant" (Participant 1 from MW2).

"...On the first day they gave me a card only but did not do anything and did not tell me when to come back. After a week my mother asked me to go back to the clinic. When I was at the clinic they said that the first visit pregnant women must go back home because it was not their clinic day. I did not know whether I was the first or the repeat visit but I decided to stay. Fortunately they attended to me that day" (Participant 5 from MW2).

"...I am concerned, they did not give me the injection on the shoulder yet all the other pregnant women has had two already. I am not sure why I am not given" (Participant 4 from MN2).

The participants were also concerned about the inconsistency of information that they were given at the PHC clinics. Their concerns were verbalised in the following statements:

"...In the classes you are told one thing but they end up doing something different. For an example they will say if you come to the clinic early you will be able to go home early, yet when you are early they make you

to wait whilst they are doing other things. This makes planning very difficult; I am working and I do not know whether to take a half or full day leave for coming to the clinic. It is so frustrating” (Participant 3 from PN1).

“...I have a BP and get swollen legs yet I was told calcium will lower my BP and I am taking it as advised. I am confused” (Participant 4 from MN2).

Observations were made regarding relations between the clinic staff and the pregnant women during communication. Good human relations were observed between staff members and pregnant women all the time during (88%, n=52) of the observations but during (12%, n=7) of these observations, the human relations between staff members and pregnant women were sometimes good and sometimes not. These results are presented in Table 4.44.

Table 4.44: Relations between the clinics’ staff members and the pregnant women (n=59)

	Yes	Sometimes	No	Total
Human relations between the clinic staff and the pregnant women	52 (88%)	7 (12%)	0 (0%)	59 (100%)

Observations of whether the clinics’ staff members were courteous, professional and approachable to the pregnant women were made as part of assessing the relations between the clinics’ staff members and the pregnant women. The findings of the observation revealed that the clinic staff were courteous, professional and approachable (53%, n=31) at reception, (76.3%, n=45) in the observation rooms, (92%, n=54) in the blood rooms (95%, n=56) in the injection rooms (100%, n=52) in the counselling rooms and (59%, n=35) in the consultation rooms. Although the staff members were courteous, professional and approachable about 50% of the time or more in the work stations, there were days when staff members were unprofessional and unapproachable in some work stations. During these times they were observed communicating with the pregnant women in an unprofessional manner, sometimes even shouting and scolding the pregnant women. Out of the 60 days spent in the PHC clinics doing observations, the staff members

were observed to be unprofessional and unapproachable in the reception area during six days and during two days in the observation room. Table 4.45 presents findings of the body language of the clinics' staff members at various work stations.

Table 4.45: Courteousness and professionalism of clinics' staff members at various work stations (n=59)

Work station	No of days body language observed			
	Courteous, professional and/or approachable	Neutral	Unprofessional and /or unapproachable	Total
Reception	31 (53%)	22 (37%)	6 (10%)	59 (100%)
Observation	45 (76.3%)	12 (20.3%)	2 (3.4%)	59 (100%)
Blood	54 (92%)	5 (8%)	0 (0%)	59 (100%)
Injection	56 (95%)	3 (5%)	0 (0%)	59 (100%)
Counselling	52 (100%)	0 (0%)	0 (0%)	52 (100%)
Consultation	35 (59%)	24 (41%)	0 (0%)	59 (100%)

Significant differences ($\chi^2 = 8.216$ (n = 59), df = 1, $p < .004$) were observed between the health authorities with regard to human relations between the clinics' staff members and the pregnant women. In the provincial PHC clinics good human relations were observed (100%, n=30) of the time while in municipal PHC clinics there were good human relations (76%, n=22) of the time. Nevertheless the human relations in the municipal health authority were sometimes good and sometimes not during (24%, n=7) of the observations. These results are presented in Table 4.46.

Table 4.46: Results per health authority: Relations between clinics' staff members and the pregnant women

	Municipal				Provincial		Test statistics		
	Yes always	Yes Some times	Total		Yes	Total	χ^2	df	P value
Good human relations between staff and pregnant women	22 (76%)	7 (24%)	29 (100%)		30 (100%)	30 (100%)	8.216	1	.004*

* *P-value* < .05

The results on how the clinics' staff members presented themselves to the pregnant women at various work stations revealed that the clinics' staff members from both health authorities were courteous, professional and approachable or neutral during most of the days in all the work stations. There were four days in municipal PHC clinics and one day in provincial PHC clinics when staff members in the reception area were observed to be ($\chi^2 = 9.869$ ($n = 58$), $df = 1$, $p = .007$). In the observation room there were two days in the municipal PHC clinics and one day in the provincial PHC clinics when staff members were witnessed to be unprofessional and unapproachable to the pregnant women, shouting and scolding the pregnant women ($\chi^2 = .390$ ($N = 58$), $df = 1$, $p = .066$). Table 4.47 presents the results for observations done at various work stations.

Table 4.47: Results per health authority: Courteousness and professionalism of clinic's staff members at various work stations

	Municipal				Provincial				Test statistics		
	Courteous, professional and approachable	Neutral	Unprofessional and unapproachable	Total	Courteous, professional and approachable	Neutral	Unprofessional and unapproachable	Total	χ^2	df	P value
Reception area	20 (69%)	5 (17%)	4 (14%)	29 (100%)	12 (40%)	17 (57%)	1 (3%)	30 (100%)	9.869	2	.007*
Observation room	24 (83%)	3 (10%)	2 (7%)	29 (100%)	29 (97%)	0 (0%)	1 (3%)	30 (100%)	3.390	1	.066
Blood room	29 (100%)	0 (0%)	0 (0%)	29 (100%)	25 (83%)	5 (17%)	0 (0%)	30 (100%)	5.107	1	.024*
Injection room	26 (90%)	3 (10%)	0 (0%)	29 (100%)	30 (100%)	0 (0%)	0 (0%)	30 (100%)	3.390	1	.066
Counselling room	23 (100%)	0 (0%)	0 (0%)	23 (100%)	29 (100%)	0 (0%)	0 (0%)	29 (100%)	No statistics computed because findings were constant		
Consultation room	12 (41%)	17 (59%)	0 (0%)	29 (100%)	23 (77%)	7 (23%)	0 (0%)	30 (100%)	7.292	1	.007*

* *P-value* < .05

4.3.7 Culture that prevailed in the Primary Health Care clinics

The culture that prevails in an organisation between various stakeholders, staff to staff, staff to pregnant women and staff to management is critical to ensure teamwork and co-operation between staff members and to maintain good relations between staff members and pregnant women. Assessments were done during the observations and interviews to identify the type of culture that prevailed in the PHC clinics that were implementing the BANC approach. Observations were made regarding whether a) the staff members were assisting each other when there was a need to do so b) professionalism and courteousness of staff members towards each other c) follow-up ANC visits scheduled based on the pregnant women's convenience d) pregnant women's involvement in their own care and e) satisfaction of the pregnant women with the service and f) maintenance of privacy during consultations and examinations.

4.3.7.1 Clinics' staff members assisting each other when there was a need to do so

There were few opportunities to observe situations that necessitated the clinics' staff members to assist each other. Two such types of situations were observed. This happened when there was an emergency situation when a pregnant woman required more than one staff member to attend to her. Another situation occurred when a staff member allocated to work in one work station, became inundated with many of pregnant women whilst there were either no or few pregnant women at other work stations. It was observed that staff were always assisting each other (50%, n=6), sometimes assisted each other (17%, n=2) and did not assist each other (33%, n=4) of the time.

Table 4.48: Clinics' staff members assist each other when necessary

	Yes	Sometimes	No	Total
The clinics' staff members assisted each other when need arose	6 (50%)	2 (17%)	4 (33%)	12 (100%)

The examples of situations where staff members were not assisting each other included the following: in one PHC clinic one nurse was allocated to do ANC consultations and also to “mind” the labour ward (monitor the pregnant women in labour, conduct deliveries and do post-natal check-up examinations). Although this clinic did not have a very busy labour ward, she would require someone to assist her if there was a delivery while there were still ANC pregnant women to be consulted. The midwife worked alone with hardly any help from the colleagues most of the time. The pregnant women waited for her whilst she was busy with a delivery. In between consultations of the pregnant women she would monitor and assess the pregnant women in the labour ward. Only once during the observation period a manager was observed helping her. In another clinic more than one midwife did ANC consultations during the mornings but during the afternoon one midwife continued with the remaining pregnant women irrespective of the number of pregnant women that still needed to be seen. On certain days there were many pregnant women. This issue was also raised by the pregnant women as a concern and was evident from the following statements:

“...Sisters work well in the morning but after lunch things get delayed. Only one Sister continues to work and doing everything that is there to be done for the patients including bloods, urine and everything else; as the results things are too slow in the afternoon. Sometimes other sisters are sitting and doing nothing” (Participant 3 from MW1).

“...There are so many nurses here but most of the time only one sees to us and you do not see what the others are doing you see them having private conversations and the next thing they tell us they are going for a break.”(Participant 4 from MW1).

The results on whether the Clinics’ staff members were assisting each other when necessary are presented in Table 4.48.

4.3.7.2 Professionalism and courteousness among clinics' staff members

Professionalism and courteousness was observed in the way the clinics' staff members interacted with each other (97%, n=57) of the time in all PHC clinics. Table 4.49 presents the results for the observation regarding professionalism and courteousness among staff members.

Table 4.49: Professionalism and courteousness among clinics' staff members (n=59)

	Yes	Sometimes	No	Total
Professionalism and courteousness between staff	57 (97%)	2 (3%)	0 (0%)	59 (100%)

The comments from the study participants highlighted professionalism and courteousness issues amongst some staff members. This was picked up in the following statements made by the pregnant women:

"...The person that counselled me and the one that did my vitals were absolutely amazing" (Participant 4 from MW1).

"... There is this nurse who was very, very polite I will never forget her" (Participant 3 from MWI).

Other comments from the participants highlighted a lack of professionalism and courteousness of staff members:

"...Some nurses are good but others, they shout at you if there are things that you do not know" (Participant 6 from MS1).

"...In reception the clinic staff members are very rude, no cards, and not explaining things. They gave me a blank card and did not explain what I must do with it. I ended up asking from other pregnant women" (Participant 4 from MW1).

"...When you come with a problem they call you to where they are sitting as a group and they ridicule you scold you in front of others and sometimes they will first just sit and look at you as if you are stupid" (Participant 3 from PW2).

4.3.7.3 Satisfaction of the pregnant women with the antenatal care services

Satisfaction of the pregnant women with the service was assessed as part of the culture that prevailed in the PHC clinics. Extrapolations regarding satisfaction with ANC service were made from the comments by the participants, expressed in the following excerpts:

“...I have been to this clinic for a number of times; I have never experienced anything bad” (Participant 2 from MN1).

“I used this clinic because it is much better than the one closer to my home where nurses embarrass you in front of others” (Participant 5 from MW1).

The majority of participants based their satisfaction with the service on the attitudes of the clinics' staff members towards them. This was evident from the following statements:

“...Nurses are good and they respect us and are at our level, they pass jokes and make us feel welcomed” (Participant 3 from PS1).

“...Most people usually say nurses are rude as a result I was scared to come to the clinic. They have been very patient with me and they tried to understand my situation even though I was late” (Participant 3 from MW1).

“...Nothing bad happens, all goes well if we as pregnant women ask they give us direction and do not scold” (Participant 3 from MW2).

“...If you listen to what they say and tell you to do there is no problem, they treat you well” (Participant 2 from MS1).

The dissatisfaction of the pregnant women with care was expressed as follows:

“...I used this clinic because it is closer to home but I will never advise anyone to use it” (Participant 3 from PW2).

“...When you come with a problem they call you to where they are sitting as a group and they ridicule you scold you in front of others and sometimes they will first just sit and look at you as if you are stupid” (Participant 3 from PW2).

“...Previously the nurses were caring and non-judgmental, today nurses have no passion” (Participant 1 from MS1).

“...I recommend that you teach the nurses how to take care of the patients especially how to talk to us and about human relations” (Participant 3 from PN1).

4.3.7.4 Follow-up visits scheduled based on the pregnant women’s convenience

According to the BANC Principles of Good Care and Guidelines, follow-up visits should be scheduled, based on the pregnant women’s convenience in order to cater for working pregnant women and school-going pregnant teenagers. This would help to ensure that pregnant women are capable of honouring their appointment dates. The results of the study showed that the clinic visits were not scheduled based on the convenience of the pregnant woman in all PHC clinics. This concurs with the finding that the plans of pregnancy management were not compiled in consultation with the pregnant women in all the PHC clinics. The following comment from one participant, who appeared to be very frustrated with the system at the clinic, bears evidence to this observation:

“...In the classes you are told one thing but they end up doing something different. For an example they will say if you come to the clinic early you will be able to go home early; yet when you are early they make you to wait whilst they are doing other things. This makes planning very difficult I am working and I do not know whether to take a half or full day leave for coming to the clinic. It is so frustrating” (Participant 3 from MW1).

Although the majority of the PHC clinics were not scheduling the follow-up visits based on the women's convenience, one participant said: "...I requested to come back on Thursdays because that is the day when I am off at work they agreed" (Participant 3 from MN1). This statement indicates that some PHC clinics were doing it, but probably only at the pregnant woman's request. The results from observations are presented in Table 4.50.

Table 4.50: Scheduling of follow-up antenatal care visits based on pregnant women's convenience (n=59)

	Yes	Sometimes	No	Total
Follow up visits scheduled at the convenience of the pregnant women	0 (0%)	0 (0%)	59 (100%)	59 (100%)

4.3.7.5 Involvement of the pregnant women in their own care

Furthermore an assessment was made regarding the involvement of the pregnant women in their own care as part of culture that prevailed in the clinic. Pattinson (2007: 10) recommended that pregnant women should be actively involved in their own care so as to gain their full co-operation. This is critical when the clinic visits are reduced and spaced far apart to allow the pregnant women to continue monitoring themselves between clinic visits. Observations included whether the plan of pregnancy management for each women was drawn in consultation with the woman. The plan of pregnancy management was not drawn up in consultation with the pregnant women during 50 observational visits. Only during two observational visits it was observed that the plans of pregnancy management were always compiled in consultation with the pregnant women. During seven observational visits it was sometimes done and sometimes not. These results are presented in Table 4.51.

Table 4.51: Drawing of management plans in consultation with the pregnant women (n=59)

	Yes	Sometimes	No	Total
Plans of management were drawn in consultation with the pregnant women	2 (3%)	7 (12%)	50 (85%)	59 (100%)

It was evident from the interviews with the pregnant women that, whilst involvement of the pregnant women in their own care was ensured in some

PHC clinics but, in other clinics it was not ensured. This concurs with the observations that the plans for pregnancy management were mostly not compiled in consultation with the pregnant women and the follow-up visits were not scheduled based on the convenience of the pregnant women. This was confirmed by the following comments of the participants:

“...I listen to them and follow what they ask me to do. But they do not get me involved” (Participant 5 from PW1).

‘.... I am not involved but I am not worried because I know the sisters know what is best for me and my child’ (Participant 3 from PN2).

The comments that they made indicated that some participants were scared to verbalise their opinions and problems to the clinic staff:

“...Now that I am closer to delivery I am attending every week but I am not sure why”(Participant 3 from MN1).

“...I have attended more than 10 times for the baby plus other extra visits; sometimes I have no money for transport. I am not happy about the many visits but I can’t tell them because they will make me to go and attend in the farm yet a person is free to choose where to attend the clinic” (Participant 3 from MN1).

4.3.7.6 Maintenance of privacy during consultations and examinations

Privacy during consultations was maintained (69%, n=41) of the time. These results are presented in Table 4.52.

Table 4.52: Maintenance of privacy during consultations and examinations (n=59)

	Yes	Sometimes	No	Total
Privacy maintained during consultations and examinations	41 (69%)	7 (12%)	11 (19%)	59 (100%)

Further analysis done per health authority regarding culture that prevailed in the PHC clinics were as follows:

- The municipal PHC clinics' staff members were not assisting each other when the need arose; the staff members from the provincial PHC clinics assisted each other (75%, n=6) of the time when there was a need to do so ($\chi^2 = 12.000$ (N = 12), df = 2 p=.002). Nevertheless there were very few situations observed in the Provincial health thus, these findings are not very conclusive.
- Professionalism and courteousness was observed between staff members most of the time in both health authorities. This was observed all the time in provincial PHC clinics authority and more than 70% of the time in municipal PHC clinics ($\chi^2 = 2.142$ (N = 59), df = 1 p=.143).
- Follow-up visits were not scheduled based on the convenience of the pregnant women all the time in both health authorities.
- Plans of pregnancy management were compiled in consultation with the pregnant women only during (3%, n=1) of the time in both health authorities ($\chi^2 = .206$ (N = 59), df = 2 p=.902).
- Privacy was maintained during consultation (62%, n=18) of the time in municipal PHC clinics and (77%, n=23) of the time in provincial PHC clinics ($\chi^2 = 4.256$ (N = 59), df = 2 p=.119).

Table 4.53 presents the findings of the current study relating to the culture that prevailed in the PHC clinics of both health authorities.

Table 4.53: Results per health authority: Culture that prevailed in the Primary Health Care clinics

Assessment done	Results									
	Municipal					Provincial				
	Yes always	Some times	No	Total		Yes always	Some times	No	Total	Test statistics
Findings										χ^2 df P value
The clinic staff assisting each other when need arises	0 (0%)	0 (0%)	4 (100%)	4 (100%)		6 (75%)	2 (25%)	0 (0%)	8 (100%)	12.000 2 .002*
Professionalism and courteousness was observed between staff	27 (93%)	2 (7%)	0 (0%)	29 (100%)		30 (100%)	0 (0%)	0 (0%)	30 (100%)	2.142 1 .143
Follow up visits scheduled at the convenience of the pregnant women	0 (0%)	0 (0%)	28 (100%)	28 (100%)		0 (0%)	0 (0%)	30 (100%)	30 (100%)	No statistics computed because findings were constant
Privacy maintained during consultation and examination	18 (62%)	6 (21%)	5 (17%)	29 (100%)		23 (77%)	1 (3%)	6 (20%)	30 (100%)	4.256 2 .119
Plan of management drawn in consultation with the pregnant women	1 (3%)	4 (14%)	24 (83%)	29 (100%)		1 (3%)	3 (10%)	26 (86%)	30 (100%)	.206 2 .902

* P-value < .05

4.4 SUMMARY

Chapter 4 presented the results for the quantitative and qualitative strands of the study. A composite summary of the findings of the study is presented in a table in Appendix 18. The next chapter presents the discussion of the current study's results, conclusions and recommendations as well as the limitations of the study.

CHAPTER 5 : DISCUSSION OF RESULTS

5.1 INTRODUCTION

The previous chapter presented the results of the study. In Chapter 5, discussions of results are presented in order to highlight how the research questions were answered and objectives achieved. The first section of this chapter discusses the results based on the TQM model as the theoretical framework that guided the study and in the later section, the discussion of results is in relation to the objectives of the study.

5.2 DISCUSSION OF RESULTS BASED ON THE TOTAL QUALITY MANAGEMENT MODEL

The discussion of results aims to highlight the settings and client-specific factors that were identified during the analysis and interpretation of results in order to be able to develop a tailored practice framework to facilitate the implementation of the BANC approach based on these factors which was the fourth objective and the aim of the current study. The discussion of results in this section is guided by the TQM model, focusing on each of the four Ps and the three CS elements of the model to highlight the settings and client-specific factors identified under each element.

5.2.1 People involved in the Basic Antenatal Care approach

The people in the current study were the clients in the PHC clinics and the staff members who were providing ANC services. With regards to the clients, the focus of the study was on assessing whether there were ANC clients at the PHC clinics every day the clinics were open and also to check how many ANC clients were consulted per day. With regards to the clinics' staff members, the focus was on the categories of staff members available and the number of staff members that were involved in providing ANC services. The findings about ANC clients and clinics' staff members

gave the indication of the workload of the staff members, especially the midwives and advanced midwives who were providing ANC services. Furthermore, the availability of supportive supervision was assessed by checking whether each PHC clinic had a manager.

5.2.1.1 Clients present in the Primary Health Care clinics

The results of the study show that out of the 15 244 clients that were at the PHC clinics during the 60 day observation visits, (11.7%, n=1 783) came for ANC services and (88.5%, n=13 461) came for other health care services. Other health care services differed between PHC clinics depending on the package of services that were provided in each clinic and how these were structured. These other services included minor ailments, child care, chronic care, geriatric, sexual and reproductive health services and many others services. This is in line with the provision of the PHC set of norms and standards for South Africa (NDoH 2000: 12) stipulating that all health care services should be available every day of the week for every client who accesses services at a PHC clinic. This increases access to health care services and limits delays in initiating care as it affords an opportunity for the first ANC consultation to be provided to all women who present to the PHC clinics on the day the women present at the clinic or on the day when the pregnancy is confirmed (Pattinson 2007: 7). The practice also helps to avoid missed opportunities because it allows all the clients to be assessed and screened for health problems on their first contact with the health services (Pattinson 2007: 5). These findings were similar in both provincial and municipal PHC clinics except for one municipal PHC clinic which did not have ANC services during one of the five days observation visits conducted at this clinic. No observations were possible at this clinic during the day when there were no ANC clients. This resulted in 59 observation visit conducted; which included 30 days for the provincial and 29 days for the municipal health authority instead of conducting these for 60 days as was initially intended. This is indicated as a limitation in the current thesis.

5.2.1.2 Availability and allocation of staff in the Primary Health Care clinics

According to the findings of the current study, although various categories of staff members were available, several PHC clinics did not have the ADMs. A total of (50%, n=6) of the 12 PHC clinics that were included in the study did not have the ADMs yet the NDoH (2008a: 63) recommends that each ANC clinic should have at least one ADM. These findings could potentially influence the implementation of the BANC approach. This is supported by Bradshaw *et al.* (2008: 14), stating that coverage and quality of care depends on having enough staff members with the right skills in the right places and on training and sustaining adequate numbers of the right health care providers with relevant educational qualifications.

All the six PHC clinics that did not have the ADMs belonged to the municipal health authority. The provincial PHC clinics had one to four advanced midwives in each clinic. The assessment in the current study did not include finding the reasons why there were no ADMs in the municipal health authority PHC clinics. Neither did the current study investigate if there were enough ADMs in the district to be employed in all the PHC clinics. The review of the SANC statistical register for the nurses registered for different qualifications showed that the nurses that are registered for additional qualification including ADMs were not included in the register (SANC n.d).

The ADMs are more likely to be able to provide a higher standard of care than midwives with only basic midwifery training because of the ADMs' added midwifery skills and knowledge. Therefore, the absence of this category of staff in the PHC clinics could have negative influences on the quality of ANC services rendered. This becomes true in the findings of the current study where there were a few areas where the provincial PHC clinics were performing better than the municipal PHC clinics, although several other reasons could have contributed to the differences. The differences between the health authorities were noted in how the clinics'

staff conducted the first visit consultation. This was done correctly (68%, n=20) of the time in provincial and only (11%, n=3) of the time in the municipal health authority. Again, following up on previous abnormal finding was done most of the time (68%, n=318) in provincial compared to (50%, n=264) in municipal health authority.

The absence of the advance midwives in some of the PHC clinics coincides with that during record review the details of the midwife countersigning the card was recorded in (2%, n=22) reviews only. According to the BANC Principles of Good Care and Guidelines, a well experienced nurse preferable an advanced midwife should counter check the ANC record card twice during pregnancy at the initial visit and again at 32 weeks' gestation (Pattinson 2005a: 49). This is done to double check that all aspects of the consultation process have been complied with (Pattinson 2007: 50). This practice is also recommended in the Gauteng ANC policy (Gauteng Department of Health n.d.: 4), where it is stated that ideally an advanced midwife should assess each pregnancy on at least one occasion during ANC. Although this finding was evident in almost all the PHC clinics in both health authorities, the absence of the ADMs could also have influenced this.

5.2.1.3 Practices adopted to allocate staff to provide antenatal care services in the Primary Health Care clinics

Figure 4.1 reflects that a small portion out of the total number of clients that were present in the PHC clinics during the 60 days of the observation came for ANC services, while the bigger portion was the clients who came for other health care services. The maximum of 27 first visit ANC clients with an average of 6 to 11 clients for the first visits and maximum of 53 with an average of 6 to 53 repeat visit ANC clients per day are also indications that there were not too many ANC clients in the PHC clinics per day. Although these numbers appear to be small, provision of ANC services every day could still pose problems to PHC staff members amidst the huge demands for other services as indicated by (88.5%,

n=13 461) clients who came for other health care services. The study participants in the rural Zimbabwean described the large number of programmes being implemented simultaneously as interfering with their performance (Mathole, Lindmark and Ahlberg 2005: 388).

In most PHC clinics, not all staff members were involved in providing ANC services, but each day a few were allocated to provide ANC services while others work with other clients. These findings are evident when comparing the information on Table: 4. 7 regarding the categories and average number of staff per day in each PHC clinic with that in Table 4.8 which presents the categories and the average number of staff involved in provision of ANC services. This is also evident in Table 4.9 which highlights the allocation of the midwives and advanced midwives. While this type of allocation is usually based on the number of clients and the package of services offered in one PHC clinic, it could results to a limited number of staff being allocated to provide ANC services especially considering that on average there were not so many ANC clients in the PHC clinics. This could potentially pose a risk of influencing access to and quality of ANC services as was observed in the current study where not all pregnant women who presented at the clinic were accepted. Again, some processes were not being carried during ANC consultation such as ANC and delivery plans, the use of checklist, counter checking of the ANC records and more others. A similar situation was observed in Zimbabwe (Mathole, Lindmark and Ahlberg 2005: 388), where the nurses ignored the policies and other government directives, designed their own ways of coping with situations and omitted certain activities to ease pressure because of the different programmes being implemented simultaneously.

In the PHC clinics that were providing ANC services only on specific days, the majority of staff members would be involved in providing ANC services on an ANC day because the number of clients seen each day in these clinics were be high. This is reflected for the three PHC clinics in Table

4.6 (MS2, MN1 and MW2) where there were 30-150 repeat visit ANC clients seen in these PHC clinics in one day. As previously stated, this practice is not recommended in the BANC approach. The view of (Pattinson 2007: 7) is that by starting the ANC immediately on the day pregnancy is diagnosed or the day the women present at the clinic and by providing ANC daily the clinic will actually save time, reduce the workload and improve the chances of good outcome of the pregnancy. The high numbers at these clinics that were providing services for repeat clients once a week only supports this view by Pattinson.

In other PHC clinics there was no allocation; the supermarket/one stop shop approach was followed where all clinic staff members were attending to all clients as they presented irrespective of their health-related problems. All services were provided every day by all nurses present in the clinics. This was noted in the PHC clinics that were providing ANC services every day that they were open. These clinics did not have a special section where ANC services were provided. The supermarket approach is recommended by the NDoH (2001: 188) as part the set of norms and standards for South Africa. However, Snyman (2007a: 5) criticise the supermarket approach stating that the approach has many factors which could impact on and influence the quality of ANC such as when nurses with no midwifery qualifications might be compelled to attend to ANC clients. The observation in the current study was that the PNs were not involved in provision of ANC services.

Beksinska, Kunene and Mullick (2006: 297) discovered that staff shortages, training and staff motivation appeared to be particular issues in maternal health care services in South Africa. In contrary, the number of clients versus the staff available in the PHC clinic did not show any risk of staff shortages in the PHC clinics in the current study. De Bernis, Sherratt, AbouZah and Van Lerberghe (2003: 52) advice that it is not only more or better training that is required, although both are crucial, but also more attention is needed for deployment and retention of staff members.

Thus in the current study, the focus was not just on the number of staff but included assessing the categories of staff that were available to provide ANC services as well.

The services, in the current study, were provided by various categories of staff members which included the ADMs, midwives, PNs (except ANC services), ENs, ENAs, LCs and the clerks. This was observed in both health authorities although as previously stated the municipal health authority did not have the ADMs and the PNs as well. The SANC allows that sub-categories of staff work under the direct supervision of a professional nurse and/or midwife (SANC 1973 as amended by SANC 1978). The skills mix in the PHC clinics allowed for various activities to be performed by different categories of personnel thus reducing the workload of the midwives. This approach demands each client to go through several work stations for each consultation visit and to have contact with a number of different staff members. This has been observed in other provinces in South Africa and in other African Countries. The example is Gauteng province where it is stated in their ANC policy (Gauteng Department of Health n.d.: 4) that the clinical assessment of pregnant women should be done by registered midwives or medical practitioners and the less qualified staff should perform some of the support functions such as urine testing. Similarly, in Nigeria various categories of staff are involved in ANC services. The minimum staff requirement according to a proposed organisation of ANC services in Nigeria should include not just the midwives but also the receptionist or record clerk, orderlies and sanitation worker and a laboratory assistant (Ekabua, Ekabua and Njoku 2011: 3).

Whilst the practice of having different categories of staff members relieves the work load on the midwives, it could pose problems if it is not implemented correctly. This practice requires that, at the beginning of the consultation, the pregnant woman should be assessed by a midwife who will do a rapid appraisal to assess the safety of going through all the

different work stations against the need for emergency care (Pattinson 2005b: A5). The co-ordination of the health care regimens, provided for the mother and child by other categories of health personnel, remains the responsibility of the midwife (SANC 1991: 4). Thus, the midwife should be the final person to consult the pregnant women in order to consolidate all the information and examination findings from the different work stations when making a diagnosis, preparing the plan of pregnancy management and giving health information to the woman and to address areas of mismanagement and/or omissions. It is based on the same premise that the BANC and FANC Principles of Good Care and Guidelines stipulate that a senior/skilled midwife, or advanced midwife, should check and counter sign the ANC card at the end of the consultation at least twice during the ANC period (Pattinson 2007; WHO 2002). In the current study neither rapid appraisal at the beginning of the clinic nor counter signing the ANC record card at the end of the pregnant woman's consultation process was being practiced in the PHC clinics.

A different approach, which one of the clinics (a municipal PHC clinic) was practicing, was for the whole consultation process to be done by one midwife. All the activities, tests, examinations procedures were done by one midwife in just one work station. This allowed the women to go through two work stations; the reception and consultation room and two clinic staff members; the clerk who only did admission and registration and the midwife who performed the entire consultation process (history taking, examination, counselling, various tests and pregnancy management planning). In the current study the participants commented that the process became too slow if all activities were carried out by one nurse in one work station for each client. The comments from the participants highlighted the need for more midwives, especially in situation where there are many ANC clients. Flint, together with other authors (Flint 1989; Flint, Poulengeris and Grant 1989), repeatedly recommended this approach to ANC. These authors state that ideally, ANC consultations should be conducted by the same midwife throughout pregnancy and

even during labour and delivery. According to these authors this practice promotes good nurse-patient relationships.

Other countries have modified this practice and introduced the group ANC approach which, according to Novick Reid, Lewis, Kershaw, Rising and Ickovics (2013: 1); is a model that integrates physical assessment with extensive health education. These authors state that this approach has been demonstrated to improve several important pregnancy outcomes. In this approach a group of 8-12 pregnant women of similar gestational age are consulted by a team of health care workers (Novick *et al.* 2013: 2). The women remain in the group throughout pregnancy and the group attends all ANC visits together and is consulted by the same team of health care workers all the time. The group format provides the pregnant women with more contact time with health care providers compared to the traditional approach, thus allowing for more time to discuss a wide range of pregnancy-related health content, pregnancy concerns, childbirth preparation and psycho-social issues (Novick *et al.* 2013: 2). None of the PHC clinics practiced this approach during the current study's observations.

5.2.1.4 Number of staff versus number of antenatal care clients in the Primary Health Care clinics

An assessment was done to check the number of the clinics' staff members providing ANC services in order to note whether staff shortages were evident. This analysis was very difficult due to the systems that already existed in the clinics to reduce the number of clients per day. On specific days of the week, some clinics were either not accepting ANC clients at all or were accepting only first or only repeat ANC visit clients, but not both per day, or had a fixed number of clients that they would accept per day. These established practices masked the potential staff shortages in selected PHC clinics which might exist if all clients were accepted without any restrictions. It was also observed that, although the provincial PHC clinics in the current study had larger numbers of staff

members (ranging from 21 to 37) compared to the municipal PHC clinics (ranging from 11 to 24), the number of staff members providing ANC services was almost the same in both health authorities (4-11 in provincial versus 4-12 in municipal PHC clinics). However, even though the average number of clients in the PHC clinics per day was higher in the provincial PHC clinics (293) compared to the municipal PHC clinics (213), the average number of ANC clients both first and repeat visit clients combined per day was higher in the municipal (34) than in the provincial (25) PHC clinics. Both the findings for the PHC clinics and between the health authorities did not reflect any obvious shortage of staff.

Wildschut and Mqolozana (2008: 144) partly agreed that, according to the number of nurses on the SANC register, South Africa has a favourable nurse per 1000 population ratio, though when comparing it to the same ratios in the Organisation for Economic Cooperation and Development (OECD) countries, the country is seen to be experiencing a shortage of nurses. According to Wildschut and Mqolozana (2008: 147), when rating the nurse-patient ratio against the WHO minimum norm, and only considering actively practising nurses, South Africa seems to have more than an adequate number of nurses (336:100 000). Three questions were posed by Wildschut and Mqolozana (2008: 146) which are also relevant to the current study. These are 1) is the minimum norm by WHO applicable to the South African situation where we might have a sufficient absolute number of nurses, but we need to establish whether we have critical skills shortages at certain occupational levels, 2) if the current situation illustrates that we do not have an absolute shortage, what does the growth in the sector predict for our future nursing supply and 3) how does it influence demand?

The SANC has a differing view regarding staff shortages in South Africa. The SANC (2007 cited in Wildschut and Mqolozana 2008: 144), acknowledges the shortage of nurses in South Africa, but simultaneously tries to present a positive picture by noting past gains asserting that

although there may still be a shortage of qualified nurses in South Africa, the positive side to this overall picture is that the growth in nursing figures is approaching that of the population of South Africa. Gwagwa (2014: 8) also acknowledges that there is a shortage of nurses in South Africa. According to Gwagwa (2014: 8) this is the case because the country is not producing/training sufficient nurses to deal with the health needs of the country directly impacting on the ability of the health sector to deliver an efficient service.

What could pose a problem to service delivery and the number of clinic staff, midwives and advanced midwives in particular is the longer time spent with each client in the BANC approach compared to the traditional approach. This problem has been also identified with the FANC model where more time was required to do consultations with clients with the FANC model compared to the traditional approach. Bbaale (2011: 520) discovered that on average, the time spent for providing ANC service in a traditional approach was found to be 15 minutes and 46 minutes in the FANC model. This author also discovered that a difference of 31 minutes for the first time client and 27 minutes for a revisiting client was noted between the times required to complete the consultation process for these two models. Von Both, Fiessa, Fleba, Makuwani, Mpembeni and Jahn (2006: 22) attest to this saying that the FANC model does not generally save cost and time on the provider side. Von Both *et al.* (2006: 22) suggest that investments in additional human resources are necessary in some local settings to ensure its proper implementation. Given the expected benefits for maternal and perinatal health, this would be a worthwhile investment. This was also confirmed in a study from southern Tanzania where the healthcare workers spent an average of 46 minutes providing FANC to a first time client and 36 minutes for a revisiting client which is 30 minutes more on average than the traditional approach (Von Both *et al.* 2006: 6). The major discrepancy between the first and the revisiting procedures related to counselling. On average, a first visit client was counselled for 30 minutes and repeat counselling hardly took place,

yet for the new model counselling would take about 15 minutes per visit (Von Both *et al.* 2006: 6). The fact that the time required for each FANC visit has implications for staffing levels was also highlighted by Lincetto *et al.* (2006: 59).

5.2.1.5 Supervision for staff members implementing the Basic Antenatal Care approach in Primary Health Care clinics

The current study assessed the availability of the manager as part of the people involved in the implementation of the BANC approach, and assessed whether the manager was available to provide support to staff members. Implementation of the BANC approach requires constant supportive supervision, mentoring and evaluation especially during the early stages until the programme or project has been well established. All PHC clinics had a manager and the clinic manager was available in the PHC clinics to support staff members most of the time. However, the manager was available most of the time (90%, n=27) in the provincial PHC clinics compared to (60%, n=17) of the time in the municipal PHC clinics. There was one municipal clinic where the manager was not available throughout the five day observation period. Koblinsky and Matthews (2006: 368), highlight the importance of availability of the supervisor for successfully implementing the project. These authors also state that good managers need to be able to ensure correct co-ordination and organisation of services, including supply, training and communication, but mostly should be available to support staff.

5.2.2 Planning for the implementation of the Basic Antenatal Care approach in Primary Health Care clinics

An effective ANC package depends on competent health care providers in a functioning health system with referral services and adequate supplies and laboratory support, all of which need to be planned and coordinated effectively (Lincetto *et al.* 2006: 53). This is supported by Bradshaw *et al.* (2008: 8) who state that, coverage and quality of care depends on

planning and the right actions by the right people which include the policy makers, managers, health care providers and the community. The results of the current study revealed that some of the aspects of planning were done well while others were not. According to Earle (2006: 5112), failing to plan is planning to fail. Experiences with innovations, similar to the BANC approach, such as the IMCI programme, indicate the importance of planning. These experiences indicate that with the implementation of the any new programme the first step should be for the manager and personnel to examine what elements of the current protocol could be eliminated, or streamlined (Gerein, Mayhew and Lubben 2002: 180). In cases of the BANC approach, these could include aspects such as reducing the recommended number of ANC visits to four, rooms and personnel could be re-organised so that women could be seen quickly and privately, by skilled personnel with appropriate qualifications. Considering the acclaimed benefit of FANC, Aniebue and Aniebue (2010: 5) suggest that proper planning and adequate finances are needed, together with extensive community mobilisation for the effective implementation of a new health-related programme. These authors further highlight that programme development should involve all stakeholders from the outset, especially health personnel trainers, professional organisations and non-governmental bodies interested in women's health (Aniebue and Aniebue 2010: 5).

The one aspect of planning that was done well by almost all PHC clinics in the current study was having the correct recording system. Proper maternity record cards were used and these were not kept at the clinics but given to pregnant women as client-held records as stipulated in the service delivery guidelines (NDoH 2007a: 19). It was in one provincial PHC clinics where 19 records were not the standardised white maternity record card that is prescribed by the NDoH. The practice of giving the ANC record cards to the pregnant women as client-held records is recommended since it makes the health information of the women readily available whenever the women accesses healthcare services; thus

allowing a continuum of care and reducing duplication of services and delays in initiating care. This practice is supported by Lincetto *et al.* (2006: 54) who state that a number of studies have shown the benefits of client-held records which the authors referred to as home-based records. According to these authors women who hold their own records are more likely to keep follow-up appointments, ask questions about their health and feel in control of their pregnancies. This benefit of using the client hold records was not assessed in the current study.

Other aspects of planning that were assessed in the current study included the availability of and access to ANC services. According to Bradshaw *et al.* (2008: 6), in order to provide the best care and to save most lives, both coverage of care and quality of services need to be high. Coverage of care means ensuring that every mother, baby and child receives services when needed, whilst providing quality care means doing the right thing right, right away (Bradshaw *et al.* 2008: 6). These authors also indicate that in South Africa quality and equitable access to care require new attention in all packages. All municipal and (50%, n=3) of the provincial PHC clinics were closed during weekends, public holidays and after hours. This practice limits access to healthcare services for the working and school going pregnant women. According to the PHC co-standard, an attempt should be made to ensure that healthcare services are available every hour and day of the week (NDoH 2001: 18). In the current study, (25% n=3) out of the six provincial PHC clinics included in the study complied with this by being open every day of the week and for 24 hours including public holidays and weekends. This is practice is promoted by the Gauteng Department of Health, recommending that the working hours should be convenient for pregnant women, caregivers and support services and that the evening and weekend clinics would be acceptable to the province, as are traditional weekday hours (Gauteng Department of Health n.d: 5).

In his endeavor to improve access to health care services, the former president of South Africa President Nelson Mandela, announced during his first hundred days in office, the provision of free health care to children younger than six years of age and pregnant women as one of several programmes (NDoH 2010: 1). This endeavor was later on broadened to include free PHC services for all. Leatt, Shung-King and Monson (2006: 52-53) argue that while the free health care policy has largely delivered on the intention to make basic services free, fees are not the only barrier to accessing health care. These authors look at the broader question of whether children who needed health care accessed it successfully and identified several barriers to accessing health care other than fees. The barriers to accessing services identified by Leatt, Shung-King and Monson (2006: 52-54) included long waiting times, inconvenient operating times, unavailability of medicines, facilities that are not clean, rude staff members, turning clients away and expensive and incorrect diagnoses. All these barriers, except cost and incorrect diagnoses, were identified in the current study, although not all were directly related to access but as problems that influenced implementation of the BANC approach.

It was observed, in the current study, that a number of PHC clinics were not providing ANC services every-day when the clinic was open. Instead, a specific day was set aside for ANC services. The NDoH discourages provision of vertical programmes and promotes a comprehensive package of services in every PHC clinic to ensure availability and accessibility of services to the community every day of the week (NDoH 2001: 18). The advantage of a horizontal programme is that every clinic day is ANC day. This allows every client that visits the clinic to be accepted. Furthermore, all clients whose pregnancies are confirmed at the clinic for the first time are provided with the first ANC consultation on the same day (Pattinson 2007: 7).

Oliveira-Cruz, Kurowski and Mills (2003: 67) state there is usually some tension between the temptation to reach the targets quickly, using a

vertical approach, and the ideal of strengthening the overall health system, which should deliver the interventions but which require more time. These authors also highlight that nurses are usually not in favour of conducting horizontal programmes and prefer to run vertical programmes and to have a specific day set aside for each health programme. Oliveira-Cruz, Kurowski and Mills (2003: 67), suggest that if the MDGs are to be reached through vertical structures, the question is then whether the necessary requirements to achieve a functioning healthcare system are being implemented at the same time. A study of nurses and midwives in rural Zimbabwe by Mathole, Lindmark and Ahlberg (2005) investigated the dilemmas and paradoxes in providing and changing the rendering of ANC services. These authors discovered that the nurses were not in favour of providing a horizontal package of services. They described the large number of programmes implemented simultaneously to be interfering with their performance. Mathole, Lindmark and Ahlberg (2005: 390) reported that, whereas the policy stipulated a practice commonly known as the 'supermarket approach' allowing women to make ANC visits on any day of the week, in Zimbabwe the caregivers made their own arrangements and fixed one day per week for ANC visits in an attempt to reduce the workload on the other days. They avoided Thursdays. Paradoxically Thursdays were no-working days for women for religious reasons and therefore preferred by many women for ANC visits. Similarly, in the current study it was observed that it was during a Friday when the one PHC clinic did not provide ANC services and again there were several other PHC clinics that had very few clients on Fridays.

In the current study, most PHC clinics were providing comprehensive packages of services. However, there were a few PHC clinics where different health care services were provided on specific days as vertical programmes, including ANC services. These clinics had a day set aside just for ANC services either for both first and repeat ANC visits or a different day for first and repeat ANC visits combined. Different schools of thoughts exist with the choice between horizontal versus vertical

programmes in health services. Oliveira-Cruz, Oliveira-Cruz, Kurowski and Mills. (2003: 83) had no problem with either the vertical or horizontal programmes. However, they argued that a comprehensive and integrated health system that has adequate capacity to respond efficiently to the needs of the population would be the ideal to aim for. These authors suggest that interventions need to adapt to local realities and circumstances, and care should be taken in choosing the delivery modes based on how they impact on the system and considering the level of urgency needed to respond to the diseases and conditions of the highest burden in a specific area.

The practice of not having ANC services every day and all the time increased the risk of ANC non-attendance for working women and pregnant school children. Some clients who presented at the clinic were not accepted because they were either first or repeat visits and had come on the wrong day. These findings differed between the health authorities. All pregnant women who presented for ANC were accepted most of the time at the provincial PHC clinics compared to the municipal PHC clinics. Sending these clients home without attending to them created missed opportunities. Some of the clients did not return to the clinic on the day that they were advised to come back. The reality of this was evident in the statements from the participants who decided to stay home and not attend the clinic after not being accepted when they first presented. The Saving Mothers Reports repeatedly highlighted missed opportunities as one of the contributory causes to maternal deaths (NCCEMD 2006; 2009; 2012). During the 2008-2010 triennium 49% of maternal deaths were related to missed opportunities which were patient-oriented, 35.2% were due to administrative factors and 37.5% were healthcare worker-related emergency management problems at primary level of care (NCCEMD 2012: 20). A total of 16.5% (n=713) deaths were as a result of no ANC attendance and 7.0% (n=300) were due to infrequent ANC and 28.8% (n=1241) were as a result of delays in accessing medical help (NCCEMD 2012: 20). This practice could potentially increase the number of clients

that are not booked and/or who book late for ANC both of which have been identified as contributing to maternal and perinatal deaths or untoward pregnancy outcomes. This have been identified and reported in the Saving Babies Report (NDoH *et al.* 2010: xii). It is stated in this report that the most common probable avoidable factors related to perinatal deaths include mothers who never initiated ANC, booked late and /or attended ANC clinics poorly.

According to Mathole, Lindmark and Ahlberg (2005 5), both trained staff and material resources are required in order for ANC to be effective and to meet standards. Although treatment and equipment were available and easily accessible in the majority of PHC clinics, there were a few PHC clinics where this was not the case. As indicated in Table 4.16, treatment and equipment were available more than (82.8-83.3%, n=24-25) of the time in both health authorities' PHC clinics. Equipment form the basis of health assessment and absence of this can lead to inadequate or wrong diagnoses and delayed treatments and/or pregnancy management. Treatment becomes effective if it is used consistently and correctly. Absence or inadequate supplies of treatment can be a cause of delayed or under treatment. Inadequate supplies of medicine were identified to be a general problem in South Africa's public health services by Leatt, Shung-King and Monson (2006: 54). These authors discovered in their study that medicines were reportedly unavailable by 24% of the caregivers in the urban institutions and 17% in the rural institutions. Inadequate supplies of medicines defeat the purpose of ANC as stated by Gross, Schellenberg, Kessy, Pfeiffer and Obrist (2011: 1) that the antenatal period provides excellent opportunities to reach pregnant women with prophylactic medications, vaccinations, diagnosis and treatment of infectious diseases, as well as with health education programmes.

It is important that a clearly defined process map is followed when services are not offered at one point. In the current study a clearly defined process map was followed only during (32%, n=19) of the time. This was

observed less often (24%, n=7) in the municipal PHC clinics compared to (40%, n=12) in the provincial PHC clinics. Following a clearly defined process map not only avoids frustration on the part of the clients but also ensures that a complete service is provided with no client getting lost in the system. This requires planning and organisation of services. The BANC documents provide detailed information on how the BANC services should be organised (Pattinson 2007; 2005a). This information is supported by a flow chart similar to that compiled by the WHO for the FANC model (Pattinson 2007; WHO 2002). In a study conducted by Strategic Evaluation, Advisory and Development Consulting (SEAD) (2011: 17), the most common reasons for process non-compliance were related to requirements either not being available or being available but not usable, lack of staff training, deviations in the roles of the staff members who conducted the activities, and intentional staff errors.

Safety and comfort to both the clients and clinic staff in the clinic structure where ANC services are provided is one of the necessities for rendering good quality care. South Africa, in its strategies towards ensuring good quality care for patients, include in the National Core Standards for Health Establishments in South Africa, that the waiting areas for the patients should be convenient and provide adequate shelter and seating for patients (NDoH 2011a: 42). Some older PHC clinics are very small because when they were built they were offering fewer healthcare services. With the increased number of services there is an obvious increase in the number of clients. In the current study, some participants commented about the size of some clinics and also indicated that there is interference with privacy and confidentiality if the clinic is too small. As stated by Aniebue and Aniebue (2010: 4), the new model at its inception may entail the reconstruction of clinic spaces to ensure individualised consultations, privacy and confidentiality, and to permit care providers to see each client in a defined location at each visit. Similarly, De Bernis *et al.* (2003: 50) state that upgrading of facilities to provide basic or comprehensive obstetric and neonatal care might require both substantial

renovation and a programme of regular maintenance. The proposal by De Bernis *et al.* (2003: 50) is that standards are required not just for clinical care but also for regular and effective maintenance, cleanliness and management, and for renovating or refurbishment of facilities.

In the current study there were several concerns about the waiting times which, according to the interviewed participants, were too long. The waiting time at clinics might influence the clients' level of satisfaction with healthcare services. Sokhela (2011: 49) attest to this stating that the shorter the time that the clients waited at the PHC clinic, the more satisfied they were with the services received. In a study about the quality of ANC services in eastern Uganda the waiting time had the highest percentages of unsatisfied clients (Tetui, Kiracho, Ekirapa, Mutebi, Raymond and Waiswa 2012: 27). Very long waiting times at facilities sometimes resulted in patients being turned away as staff could not always cope with the large numbers that turned up each day (Leatt, Shung-King and Monson 2006: 55). The NDoH has stipulated that waiting times should be monitored and anticipated waiting times should be communicated to the clients so that they become aware of this and are able to plan for the wait (NDoH 2011a: 19). In the current study the participants indicated that although they understood that the long waiting times were sometimes beyond the control of the clinics' staff members, they would prefer being informed about the expected waiting times. Long waiting times can be a cause of clients' missing appointments in future (Leatt, Shung-King and Monson 2006).

5.2.3 Processes involved during the implementation of the Basic Antenatal Care approach in Primary Health Care clinics

Oakland (2007: 13) explained that in every organisation there are some processes which are the activities that the organisation must carry out especially well if its mission and objectives are to be achieved. In the current study assessment included observation of some administration

and ANC consultation processes and noting for the evidence of these in records.

Administration processes

There was limited evidence of the implementation of the BANC approach in the PHC clinics with regards to the administration processes, as most of the processes were not done according to the BANC Principles of Good Care and Guidelines. This was with exception of one process that was done well which was provision of first visit consultations before transferring all pregnant women who for some reason needed to attend ANC at another clinic. All other administration processes were either not implemented at all or done less than 10% of the time. Not performing these administrative processes have implications for the quality of ANC provided to the pregnant women. Administrative processes form an important part of project management and should be included in the planning process in order to ensure that these are executed and monitored.

In the current study all women, whose pregnancies were confirmed, were not offered a choice to keep or terminate the pregnancy. According to the NDoH (1996: 2) a pregnant women has a choice to keep or terminate pregnancy. Early identification of a woman who prefers to terminate a pregnancy and directing her to the correct services is important. This could prevent such a woman from pursuing illegal routes posing a threat to her life and increasing the risks of maternal deaths. According to the Saving Mothers Report 2008-2010 (66%; n=173) of the 261 early pregnancy deaths were from septic miscarriages (NCCEMD 2012: 39). Giving options to keep or terminate a pregnancy is one of the strategies to reduce maternal deaths by reducing unwanted pregnancies and eliminating the need to use illegal abortion services (Mhlanga 2003: 115). South Africa's Minister of Health (NDoH 2012c: 3) called upon all healthcare workers to prioritise five key actions in the sexual and reproductive health programme, one of which is developing strategies to

prevent unwanted pregnancies. The NDoH protects the rights of persons to make decisions concerning reproduction, promotes reproductive rights and extends freedom of choice by affording every woman the right to choose whether to have an early, safe and legal termination of pregnancy or to keep the pregnancy (NDoH 1996: 1).

Provision of the first ANC consultation on the day pregnancy was confirmed or the first time the woman attended the clinic did not happen most of the time. There was small difference between health authorities with regards to this process. Not providing the first ANC consultation on the day when the pregnancy was confirmed or at the very first clinic attendance, created missed opportunities and was also a cause for late ANC booking by some women. This was evident from the comment from participants who decided not to come back to the clinic after they had not been offered a first ANC consultation when they first presented at the PHC clinics. The recommendations by most authors is for the first visit consultation to happen as soon as the pregnancy is confirmed ideally before the end of the first trimester (NDoH 2007a; Pattinson 2007; CCEMD 2008-2010). South Africa is one of the countries that are struggling to get women to attend ANC early during their pregnancies thus every opportunity to get the women to attend ANC early should not be missed. Hoque, Hoque and Kader (2008: 66) discovered, in an audit of ANC services in a rural district of KZN, that the mean gestational age at the first visit was 22 weeks. Early ANC ensures timely identification and management/stabilisation of risk factors. Missed opportunities have been repeatedly listed in the Saving Mothers Reports as one of the contributory causes of maternal deaths (NCCEMD 2005; 2008; 2012). It is based on this understanding that Pattinson (2007: 10) suggests that the first visit consultation should be provided before transfer of all pregnant women who for some reason need to attend ANC at another clinic. This was being practiced for all the cases observed in both municipal and provincial PHC clinics though there were very few cases observed.

In the current study the guidelines were not used as a reference in both municipal and provincial PHC clinics. Principles of Good Care and Guidelines are meant to be used as a reference for providing ANC in order to ensure that services are provided as specified in the guidelines. This could explain the findings of the study where the performance of some of the clinics' staff members, such as the midwives and advanced midwives, the ENAs and the clerks were not working according to the guidelines. The performance of the clinics' staff members was also raised as the concern by some of the participants who indicated that some of the activities and tests listed in the maternity case records were not done for them. The guidelines describe in detail how the ANC process should be conducted (Pattinson 2005b: A5-C20) and emphasise (in the BANC handbook) that ANC should follow the steps as detailed in the guidelines (Pattinson 2007:8). According to Pattinson (2007: i) these guidelines were designed according to IMCI chart booklet following the request by the midwives who were providing ANC services. Similar to the IMCI guidelines, the BANC guidelines also contain a set of flow charts which describe the process of ANC consultation, detailing the general processes, specifying process of the first and follow up ANC visits (Pattinson 2005b; NDoH, WHO and UNISEF 2011). The guidelines were adopted from Pregnancy, Childbirth, Postpartum and Newborn Care which is a guide for essential practice for the FANC model compiled by the WHO (Pattinson 2005b).

A similar situation where guidelines were not used existed in Zimbabwe Mathole, Lindmark and Ahlberg (2005: 4) where daily activities were not guided by the guidelines but by informal rules and routines that had been introduced by the clinics' staff in order to cope with the perceived high PHC work load. Mathole, Lindmark and Ahlberg (2005: 4) state that although officially the facilities provided ANC services daily, in reality pregnant women came for their first ANC visits only on certain days of the week. These authors also discovered that in Tanzania, organisational rules had been created by the individual health facility's teams without the

district authorities' inputs, as the district authorities promoted daily ANC services. These informal rules did not only conflict with the national FANC guidelines but also with the district aims (Mathole, Lindmark and Ahlberg 2005: 4). The creation of informal rules was evident in the PHC clinics where the clinics staff decided against the government directives such as the BANC guidelines, the Primary Health Care package of services and the maternity care guidelines not to provide all services daily and not to attend to all ANC clients that presented at the clinics and not to offer services to both first and repeat visits ANC clients on the same day (Pattinson 2007; NDoH 2007b; NDoH 2001).

In the current study the clinic-specific protocols on pregnancy management were not used in the majority of PHC clinics. These were not used at all in the municipal PHC clinics, but were used during (17%, N=5) of the time in provincial PHC clinics. The protocols might not have been used because the protocols were not available, unknown and unfamiliar to the clinics' staff members or they were available but the staff members preferred to ignore them. The nature of the current study did not address this aspect. However, Ngxongo (2011: 75) discovered in the study conducted in eThekweni district that the protocols were available in the majority of the PHC clinics. Both (Pattinson 2007; NCCEMD 2009) recommend that each PHC clinic should develop its own protocols for the management of pregnant women which should be available in the form of posters, individual booklets and/or tool kits. The NCCEMD (2009: 31) describe the protocols as providing detailed instructions for managing a condition derived from guidelines and specific to each institution and/or level of care.

In the 1999-2001 Saving Mothers' Report (NCCEMD 2003: 12), the recommendation was that the protocols, policies and guidelines be made available in all facilities used by women. This recommendation was adjusted in 2002-2004 and also remained in the 2005-2008 report. The adjustments included that all midwives and doctors should be trained to

use these protocols (NCCEMD 2006: 15). The notion behind this was that although these documents were available in the institutions they were not being used. This concurs with the message from the WHO (2006a) that a list of factors need to be put in place to ensure the successful implementation of the programme, including that protocols and guidelines should not just be available but should be known and be understood by all healthcare workers. Snyman (2005a: 7) also attest to this stating that having guidelines and protocols is essential, but not enough because continuous training and revision of these protocols are essential in all institutions.

The checklists for first and follow up ANC visits were not used in the majority of the PHC clinics most of the time (75%, n=44). They were not used at all in the provincial PHC clinics but used during (21%, n=6) of the time in municipal PHC clinics. Pattinson (2007: 10) recommended that the checklists for the first and follow up ANC visits should be used for ANC. Not using the checklists could hinder differentiation between women who qualifies for the BANC approach and those with special needs and therefore needs to be referred to the higher level of care (Pattinson 2007: 17). The checklists are also important to ensure that the ANC consultation process is complete. The follow up checklist for an example assists in ensuring that all ANC procedures and tests are done in due time, results are available and action on abnormal findings instituted (Pattinson 2007: 21). Again, not using the checklist could impact on identification and instituting follow-up actions of the women who did not attend the ANC clinic on their appointment dates.

Similarly, the WHO (2002: 7010) recommended, in the FANC model, that the classifying checklists should be used for ANC. According to the WHO (2002: 7010), the classifying form is to be used at the first ANC visit to decide which women should follow the basic component of the WHO model and which women would require special care. Snyman (2007a: 5) suggests that including the checklist amongst the tools used during

implementation of the BANC approach facilitates the organisational changes required at facility level for improving ANC. Ngxongo (2011: 75) stated that the use of the checklists safeguards both the client and the midwife because it ensures that appropriate care is provided to the clients but it also safeguards the midwife against omissions in practice both of which are made more effective through the practice of double checking the checklists and the client's ANC card. This author further stated that double checking assists in picking up gaps and omissions on the part of the midwives and to get them corrected and are also important for follow-up actions of pregnant women who did not attend the clinic on their appointment dates.

Pattinson (2007: 10) advises that the checklist should not be given to the clients to take home but, should be kept at the clinic where they are filed according to return dates. This assists with monitoring of compliance of the ANC clients with their scheduled appointments. The checklist for all the clients that are due to attend on each day should be pulled out of the file each day and at the end of each ANC day, follow-up should be done for all pregnant women who did not keep their clinic appointments (Pattinson 2007: 10).

Antenatal care consultation processes

The findings from observations, record reviews and interviews regarding the ANC process concur. They all indicated that, although some of the processes were performed well, there was lack of evidence of the Principles of Good Care and Guidelines in the way some ANC processes were conducted in the PHC clinics.

With regards to the general ANC consultation process the results from the observations were similar in both health authorities. The two processes observed, namely conducting the rapid appraisal in the waiting area and following the principle of "ask, listen and feel" during consultations, were not implemented. However, giving priority to emergency pregnant women

was done all the time in both municipal and provincial PHC clinics. Although very few (100%, n=7) cases requiring this process were observed during the observation period.

Although, according to the results of record reviews done during the current study, the majority of the elements assessed were recorded in (54-98%, n=639-1177), several of these elements were not recorded. These included the ANC and delivery plans and records of the midwife countersigning the record card which were recorded in (2-46%, n=22-550). There were some similarities and differences between the two health authorities with how these elements were recorded. Elements such as ANC and delivery plans were recorded in more records from the provincial PHC clinics while others such as lifestyle counselling, infant feeding choices and future contraception were recorded in more records from the municipal PHC clinics. Olin (2011: 1) emphasises the importance of recording all actions performed. Omitting performing and or recording activities in the process of ANC can also have implications for the quality of care. As stated by Earle (2006: 5112) that if you fail to plan you plan to fail; not having detailed plans for pregnancy management, ANC and delivery could negatively affect the management of the women during ANC and/or delivery. The WHO (2003: 18) recommends that all pregnant women should have a written plan for dealing with birth and any unexpected adverse events, such as complications or emergencies that might occur during pregnancy, childbirth or the immediate postnatal period (Lincetto *et al.* 2006: 57). The plan should be in line with clinical findings and should be implemented (Pattinson 2007; NDoH 2007a).

It was also noted with screening for medical and other related conditions that pre-eclampsia, HIV and foetal movements were recorded in most reviews. However, other conditions such as malnutrition and anaemia, foetal growth, post maturity and congenital abnormalities were sometimes recorded (57-67%, n= 683-806) although the number of records where these conditions were not recorded was also high (33-43%, n=394-517).

As stated by Lincetto *et al.* (2006: 56), several conditions that are prevalent in Africa such as hypertension STIs, maternal and neonatal tetanus, HIV, TB, and some nutritional deficiencies, if not effectively managed, could interact during pregnancy and worsen pregnancy outcomes. ANC offers an opportunity to screen for and diagnose, manage and or stabilise these conditions. In this way, as stated by (Lincetto *et al.* 2006: 56), ANC represents an important entry point for different programmes and for providing integrated care which is beneficial not just for the mother and the baby but also for the health system as missed opportunities and programme costs could be reduced by timely effective interventions.

The findings of the current study's record reviews gave the impression that on the whole the first visit consultations were well done. The results of record reviews reflected that the first ANC visits' activities, the dates when activities were done, results for the tests and actions taken in relation to abnormal findings were recorded in the majority of reviews except for the three aspects were recorded poorly. The activities that were viewed as being recorded poorly were those that were recorded in either less than 50% reviews and included:

- Action taken in response to abnormal TB results (45%, n=128).
- Recording Pap smear results (43%, n=197).
- Obtaining the client's consent to be tested for HIV (27%, n=311).

Analysing these per health authority revealed that the municipal PHC clinics were performing better with regards to obtaining the consent for HIV and performing TB screening. On the other hand the provincial PHC clinics were performing better in relation to Pap smears, recording the results for Pap smears and actions taken for abnormal TB results. These findings were based on the understanding that in the nursing profession what is not recorded is considered not done (Olin 2011: 1).

The results from the current study's record reviews contradicted the findings of the observations where the first ANC consultations were done

correctly only during 39.3% of the time. It was observed that although full physical examination (including a vaginal examination) was done most the time, the PHC clinics were not doing well with the other processes observed. The Rapid screening tests were used for routine tests during (42.4%, n=25) of the time and Pap smear done according to the protocol during (47.4%, n=27) of the time. While there were no differences observed between the two health authorities with regards to performing the physical examinations and Pap smears, a remarkable difference was observed with the use of the rapid tests. These were used most of the time (66.7%, n=20) in the provincial PHC clinics yet, were hardly ever used (16, 5%, n=5) in the municipal PHC clinics. The importance of using the rapid tests in the ANC clinics has been advocated for by the NDoH (2007a: 26) and the WHO (2003: 6). Recommendations are made in the BANC handbook (Pattinson 2007: 10) that rapid, easy-to-perform tests should be used at the ANC clinics to ensure that the results are available the same day so that treatment can be initiated at the clinic without delay. According to the National Guidelines for Maternity Care in South Africa (NDoH 2007a: 26), essential screening investigations should be performed on site with results available to the pregnant women before they complete the first ANC visit. This becomes possible if rapid tests are used. The WHO (2002: 6) recommends, amongst the principles underlying the new ANC model, that rapid and easy to perform tests should be used at the ANC clinic whenever possible so that when tests, such as syphilis, are positive treatment could be initiated at the same clinic on the same day.

TB, HIV and cervical cancer contribute to the high mortality rate in South Africa. Accurate management becomes mandatory if South Africa is to succeed in reducing the death rate. South Africa, in its strategic plan 2012-2016 highlights the important of the HAST programme (NDoH 2012d: 3). The programme is aimed at facilitating integration TB, HIV and AIDS and STI programmes. It is estimated that one third of the global population is infected with TB, and as a result, at risk of developing active

TB. Each year more than eight million people develop TB disease, and about 1.9 million deaths due to TB are reported every year (Miller 2007: 11). TB is curable if clients take a complete and uninterrupted course of appropriate drug therapy (NDoH 2009b: 45). Screening and accurate management of TB during ANC can contribute to the achievement of the TB treatment success rate of more than 85% as targeted by the NDoH. The WHO attributes poor management of TB to the global shortage of well-trained healthcare workers, but is most acutely felt by the low and middle-income countries where HIV/AIDS and TB are taking the greatest toll (WHO 2007: 1). These countries require drastic actions to tackle the human resource crisis in the face of the TB and HIV/AIDS epidemic.

Although the PMTCT programme has been implemented with varying degrees of success, studies continue to show that not all women, who attend ANC clinics, are tested for HIV. According to Mhlanga (2003: 115), although 90% of the pregnant women attended ANC clinics in South Africa, fewer than 70% of them had been tested for HIV.

The WHO and International Union Against Cancer (2005: 19) and Parkin, Bray, Ferlay and Pisani (2005: 74) stated that while cervical cancer is the second most common cancer in women worldwide, it is the most common cancer-caused death in women in SSA, Melanesia, South East Asia, the Caribbean and Latin America. In South Africa, one in 26 women develop cancer in their lifetimes (Cronje and Beyer 2007: 169). It is estimated that 493 243 women are diagnosed with cervical cancer per year and 273 505 die from the disease globally. It is also estimated that out of the population of 267.9 million women, aged 15 and older in Africa, 78 897 are diagnosed with cervical cancer annually and 61 671 (78%) will die from the disease (Denny 2010: 70). This makes it important that every opportunity to screen women for cervical cancer, such as that offered by ANC clinics, should not be missed. Although not many interventions for the management of abnormal Pap smear results could be carried out during pregnancy it is still important that the Pap smear should be done

according to protocol during pregnancy, the results are recorded and communicated to the women in order to plan future management. The WHO (2006b: 12) recommends that a Pap smear be taken during the first visit, if the pregnant women did not have it done elsewhere during the past two years. The KZN cancer screening protocol (KZN Department of Health 2004: 36) stipulates that cervical screening services should be available in all health facilities where women present for health care and that a Pap smear should be taken for all pregnant women aged 30 and older and for all symptomatic and high risk women irrespective of age.

In the current study, full physical examinations at the first ANC visits was done during (74%, n=43) of the time. The findings were almost the same in both health authorities; done during (73.3%, n=22) of the time in provincial and (70%, n=20) of the time in municipal health authority. The expectation is that all the pregnant women should undergo a full physical examination during the first ANC visit (NDoH 2007b: 20).

More reviews with all repeat tests were done in due time and follow-up actions were implemented based on previous findings according to the records in the pregnant women's charts. However, the percentage of reviews where these processes were not recorded for routine investigations was (25%, n=299) and for HIV testing it was (26%, n=184). The results for repeating the HIV test in due time were almost the same in both health authorities but the provincial PHC clinics performed better on follow-up on previous abnormal findings (68%; n=318) compared to (50%; n=264) in municipal PHC clinics. Repeating these tests in due time is important for timely management of the clients. Follow-up of previous abnormal findings is important to note if problems were resolved, assess if any complications had occurred and to note the need for further management and/or treatment. These gaps in the repeat ANC visits' consultation processes coincide with the findings that the repeat visits were not performed according to the BANC guidelines most of the time, the guidelines were not used as a reference, the process of 'ask look

listen and feel' was not followed, the checklists were not used and countersigning of the maternity case records was not done. All these strategies should ensure that the ANC process is done correctly which apparently did not happen in the PHC clinics where the current study was conducted.

Most of the activities that were not done as discussed above are to be performed by the advanced midwives and the midwives. The question that arises is about the training and in-service education that they had received regarding this approach. In a study by Ngxongo and Sibiya (2013a: 79), training and in-service education were identified as challenges regarding the implementation of the BANC approach. In a study by Mathole, Lindmark and Ahlberg (2005) caregivers experienced dilemmas due to inconsistent policy decisions and organisational changes that were made with little consideration of realities experienced by the staff or the users of care. According to Mathole, Lindmark and Ahlberg (2005: 387), such policies exacerbate an already stressful working situation causing the caregivers to fail not only to give optimal care, but also to implement the recommended changes which are meant to improve the working situations. According to the (SANC 1973 as amended by SANC 1978) the support staff members work under the direct supervision of the professional nurses, which in the current study were the midwives and advanced midwives. It was therefore the responsibility of the midwives and advanced midwives to provide supportive supervision to the ENAs who were also discovered, during the current study, to be performing some procedures, such as urine testing, incorrectly.

Poor evidence of the implementation of the BANC approach was also confirmed by the interviewed pregnant women who stated that they were unaware of the change from the old traditional to the new BANC approach. To these participants things were just the same. The two possible suggested by (NDoH *et al.* 2012: 11) for the clients not to be aware on the changes in the system include that either they are unaware

of the change because the PHC clinics did not implement the changes or that the clients might have overlooked the changes.

5.2.4 Performance of clinics' staff members involved in implementing the Basic Antenatal Care approach in the Primary Health Care clinics

Gross *et al.* (2011: 2) pointed out that in many studies national guidelines serve as a “gold standard” to assess healthcare workers’ observed performance during patient consultations. Similarly, in the current study, assessment of performance of staff members was based on the BANC Principles of Good Care and Guidelines. It was only during 3% (n=2) of the time that the clinics’ staff members were observed to be following the guidelines when doing procedures. These observations were similar in both municipal and provincial PHC clinics. The categories of staff members that were performing the duties correctly all the time were the ENS and the LCs and those that were not performing their duties correctly all the time were the advanced midwives, the midwives, the ENAs and the clerks. Gross *et al.* (2011: 2) in their study about ANC care practices in the ANC care clinics in Kilombero Valley in South-Eastern Tanzania discovered that quality assessment of ANC services raised questions about healthcare workers’ performance with practice often diverging from the standard required in the guidelines. According to these authors inadequate and inappropriate care not only leads to a higher incidence of iatrogenic incidents, contributing to disabilities and/ or chronic illnesses among women and new born babies, but it also leads to a lack of confidence in the system and low utilisation of these services. Similar findings were evident in the comments by the participants in their comments about the performance of the clinic staff and their satisfaction with the ANC services. Gross *et al.* (2011: 2), state that although inadequate healthcare workers’ performance has been widely described, determinants of poor performance are not fully understood. The healthcare providers in Kilombero Valley attributed substandard ANC to

irregular supplies of essential equipment and drugs, poor infrastructure for ANC and shortage of staff. In contrary, Nyamtema *et al.* (2012: 70) discovered in a study about the quality of ANC in rural Tanzania that certain procedures were not performed despite the availability of equipment.

While there were categories of staff members that were performing the duties according to the guidelines all the time such as the ENS and the LCs other categories which included the advanced midwives, the midwives, the ENAs and the clerks were not. Snyman (2007b: 7) suggests that, the midwives are crucial people in the healthcare system who play a very important role in the management of pregnant patients and the prevention of maternal deaths. Sub-standard of care has been identified as one of the provider related contributory cause of maternal deaths (NCCEMD 2012: 22) According to Snyman (2007b: 7), all healthcare workers, who are involved in the care of pregnant patients, should know what the important causes of maternal deaths are and what avoidable factors have been identified. This author attests that unless the problems are known, it will be impossible to take the necessary steps to prevent women from dying from pregnancy-related causes. De Bernis *et al.* (2003: 49) suggest that more investment is needed to strengthen the referral facilities within the healthcare system and to ensure that increased access to skilled care goes hand in hand with improved ability of the system to provide quality life-saving care. However, healthcare providers themselves must become more accountable for the quality of the care they provide. In line with this, Bradshaw *et al.* (2008: 8), advice that it is crucial that health care providers acquire and maintain adequate and appropriate skills for their position and to use these skills with caring and respectful attitudes towards their clients. A skilled attendant would be able to provide appropriate triage and thus help minimise delays in receiving appropriate treatment, as well as institute timely actions at all points of the potential delay chain (De Bernis *et al.* 2003: 46).

It is believed that training of healthcare workers and the mobilisation of communities may lead to better health outcomes (Ouma *et al.* 2010: 1). Training that goes beyond the assimilation of knowledge of the pure facts of the content of each visit, but that fosters a deep understanding of the concept of focussed ANC and thus tapping the roots of motivation, is essential to change old practices and to implement the new mode of BANC (Bbaale 2011: 520). However, although training of antenatal staff in Asembo was associated with improvements in performance, the difference with the untrained clinics of Gem was modest (Ouma *et al.* 2010: 1). These authors suggest that the ANC training programme might need to include an evaluation among the attendees over a longer period of time to assess which components of training might require further attention. According to De Bernis *et al.* (2003: 49), there are many ways in which healthcare professionals can play an important and critical role in improving the quality of care. It is therefore essential to promote the principles of evidence-based care, including evidence-based decision-making. Healthcare professionals have a duty not only to ensure they themselves keep up-to-date and base their care on sound evidence and clinical reasoning, but should also assist and facilitate others to do the same (De Bernis *et al.* 2003: 49). If the expectation is that other categories of staff members should work under the direct guidance and supervision of the midwives (SANC 1973 as amended by SANC 1978) then the midwives have a responsibility to ensure that the lower categories of staff members perform their duties correctly. According to De Bernis *et al.* (2003: 52) all health practitioners have an important role in training and supervising less experienced staff members, as well as the induction of new staff members in order to ensure that there is sufficient, well-qualified and appropriately skilled staff members to deliver good quality healthcare services.

Maternal mortality occurs from risks attributable to pregnancy and childbirth as well as from the poor availability and quality of healthcare services (Ouma *et al.* 2010: 1). The findings of this study concur with the

findings of the study by Grosss *et al.* (2011: 1) done in south-eastern Tanzania where provision of ANC was not done according to the guidelines. Some services were not delivered to the women, while others were given to nearly all women, performance during repeat visits was poor, and discrepancies in practices and the requirements of the FANC guidelines, especially concerning health education and counselling, were noted. Similar findings were found by Von Both *et al.* (2006: 8). Changing providers' performance depends on more than training programmes. Other factors including developing new interventions, based on a realistic assessments of potential barriers to change, and reminder systems, such as changed reporting requirements and designing ANC records to prompt behaviours such as providing specific places on the ANC record card to for procedures reminding personnel to carry them out and to record them are as important (Von Both *et al.* 2006: 8). Poor performance has been identified as one of the provider-related causes of maternal deaths. It is reported in the MNCWH Strategic Plan that the most frequent health provider avoidable factors were failure to follow the standard protocols, poor recognition of problems and poorly conducted initial assessments (NDoH 2012a: 11).

5.2.5 Commitment of the clinics' staff members involved in implementing the Basic Antenatal Care approach in the Primary Health Care clinics

Commitment of staff members to ANC service provision was assessed by observing whether the clinics' staff members were spending most of their time attending to patients and actively working and whether clients who did not attend the clinics on their appointment dates were followed up. In the current study the clinics' staff members were spending most of their time attending to patients and actively working during (60%, n=39) of the time. The results were the same in both provincial and municipal PHC clinics. It was evident from the comments by the participants that this increases client satisfaction and the clients acknowledged it as an

indication of hard work. It was also evident from the comments of the participants that though some participants commented that the staff members worked very hard, others were not satisfied with the ANC services and the way staff provided the services. Effective utilisation of time is an important aspect of quality management. Clients get frustrated when they noticed that the clinics' staff members were not spending most of their time attending to patients and actively working. According to Hendrich, Chow, Skieczynski and Lu (2008: 26), an understanding of how nurses spend their time, is essential to target opportunities for improving nursing care effectiveness through improvements in management, workforce-related issues, work processes, and organisational culture. These authors further state that, the nurses' work process and the physical working environment contribute to the efficiency and safety of patient care, thus making how the nurses spend their time a key driver of bold changes in the work environment.

The study also assessed commitment of the clients to their own care. It was noted from the comments of the interviewees that the pregnant women differed in the commitment to health care with some participants showing assertiveness, others showing dissatisfaction whilst others trusted the nurses. De Bernis *et al.* (2003: 52) suggest that when the clinic's staff members are providing education and support at provider-client level, they should adopt the partnership model of care which will encourage the women to make informed decisions about their own care.

5.2.6 Communication in the Primary Health Care clinics implementing the Basic Antenatal Care approach

The study assessed communication between the clinics' staff members and the clients, the referral institutions and the EMRS.

The findings of the current study revealed that, pregnant women were given clear directions and instructions about clinic procedures during (51%, n=30) of the time, informed about examinations' findings during

(15%, n=9) and plans of pregnancy management were often not drawn up in consultation with the pregnant women during (3%, n=2) of the time. These findings reflect poor communication between the clinics' staff members and the pregnant women. Both provincial and municipal PHC clinics were not compiling plans of pregnancy management in consultation with the pregnant women. However, clear directions were given more often in provincial PHC clinics (77%, n=23) than in municipal PHC clinics (24%, n=7). While pregnant women were not informed at all about examinations' findings in the provincial PHC clinics, in the municipal PHC clinics they were always informed during (31%, n=9) of the time.

According to Oakland (2007: 14), excellent communication between customers and suppliers is the key to a total quality performance. According to Beksinska, Kunene and Mullick (2006: 31), the nature of ANC services in the South African public sector does not encourage good provider-patient communication because the patient often see a different provider for each procedure, implying that it is not easy to establish a relationship with any particular provider. ANC visits in many SSA countries provide opportunities to reach pregnant women with messages and interventions (Ouma *et al.* 2010: 2). Individual interactions between the pregnant women and the health care providers are an essential component of ANC visits because the provider and the woman should talk about important issues affecting the woman's health, her pregnancy and the plans for childbirth and the newborn period (JHPIEGO/MNH Program 2004: 2). An attempt was adopted in Kenya to sensitise the community about FANC using educational sessions at clinics in the morning, but this was found to be ineffective because it targeted only the clients who sought services at the clinics and did not reach the community at large (USAID 2008: 4). A different strategy adopted included the development of a community orientation manual (USAID 2008: 4). Clients, family and community should be equipped with appropriate healthcare messages about danger signs and healthcare seeking strategies and are empowered to demand quality care through communication and engagement

(Bradshaw *et al.* 2008: 8). The role played by maternal education in influencing the utilisation of ANC content is articulated in the study by Bbaale (2011: 520). This author stated that, in particular, with the focus on education and counselling as well as on individual counselling, the programme calls for a fundamental change in the attitudes, the skills and qualities required from ANC personnel.

According to De Bernis *et al.* (2003: 44) women with all types of complications need to be able to reach appropriate care in a timely manner if deaths due to pregnancy-related complications are to be averted. Poor communication processes between the PHC clinics and the EMRS and the referral institutions could result in delays in reaching care and delays in receiving appropriate care (De Bernis *et al.* 2003: 44). In the current study communication with the referral institutions was good. However, communication with EMRS appeared to be a problem as they were responding to emergency calls within two hours most of the time. These findings are not very conclusive as the information was only gathered in the municipal PHC clinics as there were no situations in the provincial PHC clinics that enabled such observations. Communication with referral institution and EMRS forms an important aspect of ANC management. Due to the heavy reliance on primary care since the 1970s, limited attention has been given in many resource-poor countries to addressing the need to build adequate and appropriate emergency response systems, including referral systems and facilities that can deal with all types of medical emergencies, especially obstetric emergencies (Beksinska, Kunene and Mullick 2006: 25). These authors also discovered that, in addition to the type of service received, and the quality of that particular service, there are also issues of communication and interaction between patients and providers.

5.2.7 Culture that prevailed in the primary health clinics that implemented the Basic Antenatal Care approach

Culture in any business is defined as a belief that pervades the organisation about how business (Oakland 2005: 32) should be conducted and how employees should behave and should be treated. Anderson, Scrimshaw, Fullilove, Fielding, Normand, and the Task Force on Community Preventive Services (2003: 69) state that cultural issues, relating to language and staff insensitivity, are important factors that could deter some women from accessing ANC early and regularly. In the current study it could be concluded, based on the various positive cultural behaviours that were noted that positive culture prevailed in the majority of the PHC clinics. The positive aspects included that the clinics' staff members were assisting each other whenever there was a need during (50%, n=6), professionalism and courteousness were observed in the way the staff members interacted with each other during (97%, n=57), good human relations were observed between the staff members and the clinic staff and pregnant women (76%, n=22) and privacy was maintained during consultations and examinations during 69%, n=41) of the time. However, a few aspects required improvements to strengthen the positive culture in the PHC clinics. These included not scheduling the follow-up appointments based on clients' convenience which was not done all the time and not drawing up the plans of pregnancy management in consultation with the pregnant women which was only done during (3%, n=2) of the time. These negative cultural practices coincide with the fact that the majority of the pregnant women verbalised that they were not involved in their own care.

When relevant stakeholders are involved, it increases participation and cooperation. According to the African Development Bank (2001: 2), participation is enhanced when information is shared with the stakeholders, their views are listened to and they are involved in processes of development planning and decision-making. This

contributes to their capacity-building and, ultimately, empowers them to initiate, manage and control their own self-development (African Development Bank 2001: 2). In the case of ANC, it would increase compliance with scheduled ANC visits and putting ANC plans into practice and monitoring the women's own pregnancies.

While several participants verbalised their satisfaction with the ANC service, it could be concluded from the comments from other participant that they were not satisfied with the some aspects of the ANC services. Both satisfaction and dissatisfaction were mainly related to the attitudes of the clinics' staff members towards clients. Client satisfaction is considered as one of the desired outcomes of healthcare and it is directly related with the utilisation of healthcare services (Tateke, Woldie and Ololo 2012: 384). Health institutions should work to improve the ability of their employees, particularly healthcare professionals, to win the interests of the clients and have a physical structure appropriate to the expectations of the patients as indicated by the identified determinants of patients' satisfaction with the services (Tateke, Woldie and Ololo 2012: 384).

Although the clinics' staff members were observed to be courteous, professional and approachable in most work stations, some were discourteous, unprofessional and unapproachable during (3.4%-10%, n=2-6) of the time in the observation and reception areas respectively. Mathole, Lindmark and Ahlberg (2005: 392) discovered that in Zimbabwe the caregivers were observed to be too overworked to find time to interact effectively with the women and were sometimes rude to the clients. They were also too stressed out to make time to reflect on their top down interactions. Whereas nursing, including midwifery, is presented as a profession concerned with good quality care, kindness and comfort, women do not always report such experiences during their interactions with nurses and/or midwives. Some studies suggested that professional midwives often treat women with little respect for their needs and concerns (Mathole, Lindmark and Ahlberg 2005: 392). The findings of the

study by Beksinska, Kunene and Mullick (2006: 311) concur with this report. According to these authors, women described caregivers as abusive, humiliating and uncaring and caregivers imposed their control and authority over women. These authors also reported that the services were often provided without privacy such as when their blood pressure readings were taken in full view of other patients making it difficult to discuss any personal problems or concerns without being overheard (Beksinska, Kunene and Mullick 2006: 311).

5.3 DISCUSSION OF THE CURRENT STUDY FINDINGS IN RELATION TO THE OBJECTIVES OF THE STUDY

The discussion of results in this section is focussed on the four objectives that the researcher identified at the beginning of the study towards achieving the aim of the study. These objectives were to:

- Assess the implementation of the BANC approach in the PHC clinics.
- Analyse clients' ANC records for evidence of application of the BANC Principles of Good Care and Guidelines.
- Describe the perceptions of pregnant women regarding ANC services that were provided in the PHC clinics that were implementing the BANC approach.
- Develop a tailored practice framework which is an individualised nursing intervention approach based on settings and client-specific factors to facilitate the implementation of the BANC approach in line with the provision of the BANC Principles of Good Care and Guidelines.

5.3.1 Implementation of the Basic Antenatal Care approach in the primary health clinics

The question to be answered, in an attempt to achieve this objective, was whether the BANC Principles of Good Care and Guidelines were being implemented in the PHC clinics. Answering this question afforded the

researcher with an idea of how the BANC approach was being implemented in the PHC clinics. Several aspects of the BANC Principles of Good Care and Guidelines were assessed using various assessment methods including observations, record reviews and interviews. The results of the study were regarded as a true reflection of how the BANC approach was being implemented because the findings from the different assessment methods concurred, amounting to triangulation of findings obtained from different sources and through different research methods.

According to the results of the study, several aspects of the BANC Principles of Good care and Guidelines were not being implemented in the PHC clinics. However, the eThekweni district is not the only district in this situation. Similar situations have been reported in other countries like Tanzania and Ghana where the FANC model developed by the WHO, which is a model from which the BANC approach has been adapted, has been reported as not being successfully implemented (Ouma *et al.* 2010; Ekabua, Ekabua and Njoku 2011). According to Von Both *et al.* (2006: 22), the FANC model is a great step forward although it will not come for free.

Ouma *et al.* (2010: 1) discovered that provision of ANC services varies widely and were not always in accordance with FANC guidelines in Tanzania and other countries, said to be implementing the FANC model. According to Ekabua, Ekabua and Njoku (2011: 4), one of the reasons why the implementation of FANC is far from being feasible in developing countries, concerns the difficulty of changing the status quo of current medical practices; from traditional practices of routine ANC to the practices of FANC. This could possibly be one of the reasons why not all the PHC clinics in eThekweni district were able to successfully implement the BANC approach. Von Both *et al.* (2006: 22) gave a suggestion regarding the situation in Tanzania that the introduction of the FANC in Tanzania should not just entail a small change from what had been previously practiced over many years, nor just a reduction in the number

of recommended ANC visits. These authors maintain that a focus on interventions, proven to be effective, and an appeal to abolish practices shown to be ineffective or harmful should be implemented and sustained. This suggestion could possibly benefit other countries in a similar situation as Tanzania.

5.3.2 Evidence of the Basic Antenatal Care Guidelines and Principles of Good Care in clients' antenatal care records

The second objective of the study was to identify which of the BANC Guidelines and Principles of Good Care were evident in clients' ANC records. The question that the study intended to answer was: 'Which BANC guidelines, if any, were evident in the pregnant women's ANC records?' The focus was on the records because in nursing what is not recorded is considered not done. Good record keeping is an integral part of nursing and midwifery practice, and it is essential for the provision of safe and effective care (Nursing and Midwifery Council 2009: 3).

According to the view of Bradshaw *et al.* (2008: 11), health policy makers have ensured that South Africa's goals are clear and many policies are in place and the task now is to track and manage progress in the implementation of these policies. In order for the staff members to implement the guidelines, they should be made available in the institutions and the staff members should be made aware of and be familiar with the guidelines. The NCCEMD (2006: 15) realised that it was not enough just to have the protocols and guidelines available in the institutions and therefore recommended that these should be utilised appropriately and that midwives and doctors should be trained in the use of these protocols and guidelines. In the current study some elements of the Guidelines and Principles of Good Care were evident in the records while others were not. The question is why; is it because the staff members were not aware of these, were they not trained in implementing the guidelines or were they intentionally ignoring the guidelines?

A similar situation where the guidelines were not implemented was noted by Mathole, Lindmark and Ahlberg (2005: 388) in Zimbabwe in a study of nurses and midwives which investigated the dilemmas and paradoxes in providing and changing ANC. In this Zimbabwean study, caregivers implied that they designed their own ways of coping with situations. According to the participants one strategy used by nurses and midwives to ease pressure was to ignore the government directives and if they were accused of doing things incorrectly, they would work as usual and pretend they had not seen the new regulations. Mathole, Lindmark and Ahlberg (2005: 387) stated that policies practices, resource constraints and community dynamics intersected, creating a complex work situation resulting in a stressful work environment and paradoxes and dilemmas for the caregivers in implementing recommended changes.

According to Mathole, Lindmark and Ahlberg (2005: 387), issues of policy and practice and organisational context, within which the staff members said they cared and implemented the proposed changes, highlighted conflicts arising when policies were formulated with little reflection about the local conditions within which they had to be implemented. The statement by Mathole, Lindmark and Ahlberg (2005: 392) that “implementing change might be difficult if it is not based on realities, knowledge, experiences and perspectives of those implementing the change and those expected to benefit from it”, supports the idea of basing the current study on the four Ps and three Cs TQM model.

In the Zimbabwean study, observations and informal conversations showed that the FANC guidelines did not play a large role in guiding the daily work of healthcare workers. They did not know whether the FANC guidelines were actually available at the health facility or not. The ANC card provided an important working tool for the healthcare workers because it structured the delivery of the ANC services but the ANC card only covered a subset of the services recommended in the FANC guidelines. This could explain why some of the recommended services

were not delivered to the women (Mathole, Lindmark and Ahlberg 2005: 4). The findings highlight the importance of ensuring that the recording card used is designed in line with the guidelines and updated whenever there are changes made in the operating guidelines. This arouses a question with regards to the findings of the current study which is whether the ANC record was designed in line with the Principles of Good Care and Guidelines. The current study did not address this issue.

The elements of the BANC Principles of Good Care and Guidelines that were and those that were missing or available in a few reviews have been discussed in section 5.2. These were certain elements that were recorded poorly than others. The most poorly recorded activities included the ANC and delivery plans and the details of the midwife countersigning the card which were only evident in (1.8%-45.8%, n=22-550) of the records. The current study did not investigate the reasons why these three elements were so poorly recorded compared to the others. The worst recorded aspect was the midwife's countersignature on the ANC record card. Counterchecking is a wise precaution in most situations and is important to prevent staff members from making errors [Managing Access to Medicines (MDS) 2012: 10]. This practice is also advocated for by the Institute for Safe Medication Practices (ISMP) in their programme called Independent Double Checks (ISMP 2013: 1). According to the ISMP the selective and proper use of independent double checks can play an important role in medication safety. The BANC approach recommends counter checking the first ANC visit and again during the 32nd week visit (Pattinson 2007: 49).

Counter checking requires time. Studies of nurses suggest that it may add up to 20 minutes to each medication round to carry out an independent double check for most medications (ISMP 2013: 1). It is evident that similarly for the BANC approach the midwife will require additional time to counter check her colleagues.

There are various other strategies that could be used to ensure that the clinics' staff members assess their clients correctly and completely. The ISMP (2013: 3) advises that double checks should not be used as a means of fixing problems when more fundamental system redesign is needed and also to avoid sole reliance on double checks because they will sometimes fail for a variety of reasons. The recommendations made by the ISMP (2013: 3), include that a standardised process and tools should be used in order to reduce process inconsistencies and to establish a standard process for carrying out an independent double check during the BANC approach. Another important point highlighted by the ISMP (2013: 3) is that the staff members should be educated about the importance of counterchecking each other and how to carry it out properly as an independent cognitive task and not as a superficial routine task.

Another finding, indicating lack of evidence of implementing the BANC Principles of Good Care and Guidelines was the absence of the record of ANC and delivery plans. According to Pattinson (200b: C16-C17), these plans should be prepared in consultation with the women during the first visit and reviewed and updated at each follow-up visit. Similar recommendations are given by (WHO 2003: 18) in the FANC model (Nickols 2011: 5) suggests that it is important that the plans be prepared because the plan defines goals for future direction and determines resources required to achieve those goals. This author further states that, having a plan of pregnancy management facilitates management by determining the objectives, highlighting the purposes for which various activities are to be undertaken all of which provide a guide for staff members to prepare a blue-print of the course of action which brings order and rationality. According to Nickols (2011: 4), the plan enables the clinic's staff members to focus the attention on the objectives or goals when managing the woman and if it is executed properly, it should lead to focus, coordinated action, control, time management and benefits of the process. Planning typically offers a unique opportunity for information-rich

and productively focussed discussions between the healthcare workers and the clients which provide an agreed context for subsequent management activities.

5.3.3 The perceptions of the pregnant women regarding antenatal care that was provided in the Primary Health Care clinics that were implementing the Basic Antenatal Care approach

The success of any project is best evaluated, based on the satisfaction of the customers, simply because customers will be satisfied only if their requirements are met. Tateke, Woldie and Ololo (2012: 384) suggest that health services need to be satisfactory so as to provide the intended effects of the services. It is also important that the clients should feel that they are part of the process or project as according to Bbaale (2011: 520) ownership of an ANC facility significantly increases the utilisation of ANC content. Similarly, Donabedian (1980: 5) states that patient satisfaction should be investigated since it is an objective of care, a consequence of that care (outcome) that can contribute to the effects of care, as a satisfied patient is more likely to comply with advice, and it is the patient's judgment of the care that has been provided. It was based on these premises that in the current study an assessment of the perceptions of pregnant women regarding ANC, provided in the PHC clinics that were implementing the BANC approach, was undertaken. This would ensure the development of a framework that is acceptable to the pregnant women.

According to Tandon, Parillo and Keefer (2005: 313), women require flexible, individualised ANC services with continuity of care, presented in an accessible format that they can understand. Hispanic women living in the United Kingdom failed to return for ANC appointments because they were not satisfied with the service (Tandon, Parillo and Keefer 2005: 313). These women felt that the staffs were too rushed or simply unwilling to answer their questions. Ekabua, Ekabua and Njoku (2011: 2) identified patients' perceptions of the quality of ANC services as one of the barriers to utilising ANC services effectively. According to these authors,

prolonged outpatient waiting times and unprofessional conduct of service providers were amongst the things that affected the clients' perceptions of ANC negatively. Tateke, Woldie and Ololo (2012: 384) discovered that common determinants of patient satisfaction at private and public hospitals were self-judged health status, expectations about the services, healthcare providers' perceived technical competencies, perceived welcoming approach and perceived adequacy of the consultations' duration. Furthermore, Tateke, Woldie and Ololo (2012: 384) discovered that perceived body signaling and perceived cleanliness of the hospitals were determinants only for public hospital patients while perceived health care providers' empathy, perceived lack of experience and ability, recorded consultation duration, educational status and occupation were unique determinants of patient satisfaction at private hospitals.

The study by Aniebue and Aniebue (2010: 5) shows the need for extensive community mobilisation before the introduction of any alteration in ANC services and suggests that limited advocacy directed only at policy makers and care providers could result in resistance to changes by the clients.

5.3.4 A tailored practice framework to facilitate the implementation of the Basic Antenatal Care approach

It is evident from the findings of the current study that although there were a number of positive findings that highlighted that the clinics' staff were making attempts to implement the BANC approach, a solution was needed to address the gaps identified in order to facilitate successful implementation of this approach. The majority of the gaps identified were setting-related and others were client-specific factors mostly established from the statements of the participants. The presence of these factors makes it necessary that a tailored practice framework, which is an individualised nursing intervention approach based on settings and client-specific factors, be developed to facilitate the implementation of the BANC approach in line with the provisions of the BANC Principles of Good Care

and Guidelines. Nevertheless, there were also several strengths and opportunities which, if used effectively, could help to strengthen the BANC approach in the eThekweni district. The settings and client-specific factors are listed that were identified in the current study are listed in Table 5.1.

Similar situations where there was a need of a tailored practice framework have been observed in other countries such as Nigeria and Australia. A need for a tailored approach was identified in Nigeria where Ekabua, Ekabua and Njoku (2011) discovered, following a review of the Nigerian setting, that a framework for making focussed ANC services accessible was needed. Ekabua, Ekabua and Njoku (2011: 3) discovered that, the setup of ANC in a tropical setting, like Nigeria, should be structured to meet the intended goal of reducing maternal and child morbidity and mortality rates. According to these authors, ANC must be acceptable, accessible, and affordable to the community in order for this to happen. The authors therefore designed a tailored practice framework for Nigeria.

Similarly, the Scottish Government (2011) realised that improving access to ANC services was insufficient. It needed to be accompanied by a focus on continuous, effective, assessment of health and social needs in order to identify any prevention and early intervention actions needed *before* babies are born *and* in the early days of their lives. To do this effectively, maternity care staff members need to work in partnership with each other and with women and their families, using health assets or strengths-based approaches. With this in mind the Scottish Government developed a refreshed framework for Maternity Services in Scotland (Scottish Government 2011: 9).

5.4 SETTING AND CLIENT-SPECIFIC FACTORS IDENTIFIED DURING THE CURRENT STUDY

The study identified several setting and client specific factors from the findings of the study on how the BANC approach was being implemented in the PHC clinics, evidence of the principles of good care and guidelines

in records and how the pregnant women perceived the ANC services that were provided in the PHC clinics that were implementing the BANC approach. These factors were grouped according to the strengths that existed in the district and the gaps identified. The gaps included the areas identified where the PHC clinics were not performing according the principles of good care and guidelines and the BANC handbook. These included things that were partially done and needed to be strengthened and those that were omitted and needed to be introduced. The setting and client -specific factors identified during the study are listed in Table 5.1.

Table 5.1: Setting and client-specific factors identified during the study

TQM Element	Existing strengths and opportunities identified	Gaps identified : Areas needing to be strengthened or introduced
People	<ul style="list-style-type: none"> ANC provided as part of PHC package of services in 11 PHCs Various categories of staff members were available in PHC clinics thus creating a broad skills mix. Number of staff members against the number of ANC clients did not indicate shortages of staff. All PHC clinics had a manager and the managers were available most of the time to support staff in the majority of the PHC clinics. 	<ul style="list-style-type: none"> One PHC identified not providing ANC services daily indicating not all clinics in the district were providing ANC services daily More than 50% PHC clinics did not have advanced midwives. All the municipal PHC clinics did not have advanced midwives. Uniformity between two health authorities as they provide similar services Municipal PHC clinics not having all categories PNs and ADMs
Planning	<ul style="list-style-type: none"> The recording system which was used appeared to be working well. ANC services provided every day the PHC clinics are open in most clinics 	<ul style="list-style-type: none"> Operating times and days especially for the municipal clinics. Not all pregnant women who presented at the clinics were attended to on the days of presentation. The waiting times were long at the PHC clinics. No clearly defined process maps were followed. Structure of some clinics not ideal
Processes	<ul style="list-style-type: none"> Record reviews showed that the majority of the ANC consultation processes were recorded. First ANC consultations were provided before pregnant women, who for some reason needed to attend ANC in another clinic, were transferred. Priority was given to pregnant women encountering emergencies. First ANC provided before women were transferred to other institutions 	<ul style="list-style-type: none"> Clients were not offered the choice to keep or terminate the pregnancy after confirmation of the pregnancy. First visit ANC consultation not provided on the day pregnancy was confirmed or the very first time the pregnant women presented at the clinic. The Principles of Good Care and clinic specific protocols on management of pregnant women and the checklists for first and follow-up visits were not used. Follow-up actions of pregnant women who did not attend ANC clinics on their appointment dates were not implemented. Conducting rapid appraisals in the waiting area and following the principle of “ask, listen and feel” during consultations were not done.
Performance	<ul style="list-style-type: none"> The ENs and the LCs were observed to be performing their duties correctly all the time in all work stations. A few staff commended by the clients for performing their duties well 	<ul style="list-style-type: none"> The advanced midwives, midwives, ENAs and the clerks were not performing their work correctly all the time.
Communication	<ul style="list-style-type: none"> Good communication exist between the PHC clinics and the referral institutions 	<ul style="list-style-type: none"> Poor communication between the PHC clinics and EMRS Poor communication between the clinic staff and the clients
Commitment	<ul style="list-style-type: none"> Commitment to work where staff members were observed to be spending most of their time actively working and attending to the clients, although this was disputed by some interviewees 	<ul style="list-style-type: none"> Some pregnant women lacked commitment to their own care.
Culture	<ul style="list-style-type: none"> On the whole a positive culture existed in the PHC clinics staff members were courteous and professional amongst themselves and towards the pregnant women, except in few circumstances. 	

5.5 SUMMARY

The findings of the current study suggest that a tailored framework is necessary. The setting and client-specific factors that should be considered and/or incorporated when developing the framework to facilitate the implementation of the BANC approach in line with the provision of the BANC Principles of Good Care and Guidelines were identified from the findings of the study. Finding of these factors answered the fourth question of the study which was asking what would be the practice best practice framework to facilitate and sustain the implementation of the BANC approach in eThekweni district. The next chapter will present a proposed framework that has been tailor-made for eThekweni district taking into consideration the findings of the current study which included setting and client-specific factors and the recommendations from the study.

5.6 RECOMMENDATIONS

The following recommendations are made with special reference to policy development and implementation, institutional management and practice, nursing education and further research. These factors were identified as having an influence on the successful implementation of the BANC approach in the PHC clinics that participated in the current study and could be used to strengthen BANC approach at different levels. Several of these aspects will be considered when developing a tailored practice framework in the next and final chapter of this thesis.

5.6.1 Policy development and implementation

The policies and service delivery guidelines give direction to the staff members in the organisation and ensure standardisation of performance on a wider scale. Protocols are equally important in each PHC clinic because they provide clear directions to staff members within the clinics, taking into consideration specific individual PHC factors. It is critical that relevant policies, service delivery guidelines and protocols should be available in all

PHC clinics that provide ANC services and all staff members and managers should be trained to use these documents to ensure safe and standardised practice. Records should be designed so that relevant aspects of the implementation of policies required are recorded – this will facilitate auditing of the implementation of policies.

5.6.2 Institutional management and practice

It is recommended that institutional management and practice should focus and be guided by the four Ps and three Cs as detailed by Oakland (2007) to ensure total quality management of the programme. The recommendations on this aspect for the current study were also based in the elements of the TQM Model.

People

The clinic staff members who had been trained and oriented towards the implementation of the BANC approach and the use of guidelines and protocols should be allocated to provide ANC services. Constant monitoring of staff-client ratios should be done to safeguard against staff overload. The managers should ensure that they are available all the time to provide supportive supervision to staff members and if they are not available a system should be available to have relief managers.

Planning

Services should be fully integrated to ensure the accessibility and availability of BANC services which should be available every day of the week and at every health facility where women present for both first and repeat ANC visits.

It is important that human and material resources should be reviewed for adequacy when new programmes are introduced. Adequate and constant supplies of human and material resources should be ensured at all times. Active participation of all clinic staff members, who are involved in implementing the BANC approach, should be encouraged. All levels of staff members should be allowed opportunities to give inputs and make

suggestions about the planning process so that they feel that they belong and are important to the ANC programme. Clinics should have active clinic committees and other relevant avenues so as to create forums where the clients can voice their inputs, and make comments and suggestions about ANC service provision.

Although changing the structure of the clinic forms part of the long term plan, an interim short term plan should be prepared and implemented to make sure that clients are well accommodated and comfortable and that staff members are able to perform activities in a safe and private environment.

Processes and performance

Supportive supervision should be strengthened to ensure that all categories of the clinics' staff members get adequate support and guidance. The managers should ensure that staff members are compliant with the provision of the guidelines and that they follow instructions. Guidance, support and encouragement should be given to the staff members until they gain confidence in carrying out the new procedures. Continuous evaluation should be done. Each PHC clinic should have a performance and quality audit team which conduct regular audits and SWOT analyses of how ANC services are being provided. Feedback should be provided to the manager and all the clinic's staff members who will thereafter compile implementation plans and action audit reports.

Communication

Open communication should be available at all levels of care and in all directions to ensure that relevant new information is cascaded accordingly and timeously and that referral of clients is done smoothly and within the set time frames to avoid delays in initiating care. Two-way communication ensures that messages are conveyed to the staff and that feedback is obtained regarding the progress and challenges encountered by the staff members and that strategies to resolve challenges are instituted.

Commitment and culture

Only the clinic staff members with a passion for the BANC approach and maternity services, and who are constantly courteous, professional and/or approachable when executing their duties, should be allocated to work in ANC services. This will facilitate commitment and promote a positive culture in the ANC clinics. ANC clinic staff members require support services such as debriefing, counselling and team building workshops which should be made available to assist them to deal with stressful work situations and to encourage staff members with untoward attitudes and human relations to improve.

5.6.3 Nursing education

Effective training and skills development, including commitment to ongoing learning and development, are needed to ensure the successful implementation of the BANC approach. All midwives, involved in ANC, should have received some training in BANC. Training in BANC should be incorporated into the basic midwifery training in order to ensure that all the midwives are trained in implementing the BANC approach. Ongoing in-service education for the practicing midwives should be available to keep them abreast with the BANC Principles of Good Care and Guidelines and the new developments in the BANC approach. The managers should be included in the workshops and in-service education to ensure that they understand the approach for providing safe and constructive supportive supervision.

5.6.4 Further research

It is recommended that a broader study involving other districts and other provinces should be conducted so that each can have a tailored framework developed to support and facilitate the implementation of the BANC guidelines should such a need be identified.

5.7 LIMITATIONS OF THE STUDY

Data collection did not include gathering information from the clinics' staff members who were involved in the implementation of the BANC approach. This source of information could have enriched the study's findings. The duration of observation in each PHC clinic was short (five days) not affording the researcher the opportunity to witness enough of the aspects that she had planned to observe such as attending to emergency situations and communication with referral institutions. No interviews were conducted with people from ANC clinics that adhered to the old traditional method and therefore could not supply specific information as to why they did not yet implement the BANC approach. Observations were done for 59 days instead of 60 days which included 30 days for the provincial and 29 days for the municipal health authority as was initially intended because one clinic which belonged to the municipality had no ANC clients during day five of the observation visit. The reflection on the experiences of pregnant women attending the PHC clinics were integrated with the quantitative findings, making their voices less pronounced.

CHAPTER 6 : A TAILORED PRACTICE FRAMEWORK FOR THE IMPLEMENTATION OF THE BASIC ANTENATAL CARE APPROACH IN THE ETHEKWINI DISTRICT

6.1 INTRODUCTION

In the previous chapter the results of the current study were discussed. The areas of success and those where improvements were needed, in the implementation of the BANC approach in the eThekweni district, were highlighted. Chapter 6 presents and proposes a tailored practice framework for the successful implementation of the BANC approach in the eThekweni district which was the fourth and final objective and the main aim of the study.

6.2 SUMMARY OF FINDINGS FROM THE CURRENT STUDY

The focus of the study in all the information that has been presented so far has been on the first three objectives of the study which were to:

- Assess the implementation of the BANC approach in the PHC clinics.
- Analyse clients' ANC records for evidence of application of the BANC Principles of Good Care and Guideline.
- Describe the perceptions of pregnant women regarding ANC that was provided in the PHC clinics that were implementing the BANC approach.

The findings in relation to these objectives guided the development of a tailored practice framework. A more detailed summary is presented in a table format in Appendix 18. The findings for each objective are summarised as follows:

6.2.1 Implementation of the Basic Antenatal Care approach in the Primary Health Care clinics

The findings of the study revealed that although the BANC approach was being implemented in the PHC clinics, several aspects of the BANC Principles of Good Care and Guideline were not being complied with. These were identified as barriers to the successful implementation of the BANC approach in the eThekweni District. What was good was that several strengths and opportunities which could be used to strengthen the successful implementation of the BANC approach prevailed in the district. These have been discussed in section 5.8 of this thesis.

6.2.2 Evidence of the application of the Basic Antenatal Care Principles of Good Care and Guidelines in clients' antenatal care records

The findings of the study revealed that the application of most of the BANC Principles of Good Care and Guidelines was evident in the clients' ANC records. The absence of other principles in the records such as the ANC and delivery plan and the counter checking of the ANC record cards by the midwife portrayed that all facets of the BANC approach were not being successfully implemented.

Some of the findings of the record reviews did not tally with the observations. An example of this was with the first visit consultation which was recorded in the majority of record reviews as being conducted fairly well. However, during the observations in the current study, first ANC visits were done correctly only 39.3% of the time. Performance of certain categories of staff especially the ADMs and the midwives was identified as not always being of an expected standard. Such discrepancies raised concerns about how the BANC was actually being implemented especially those where the activities were not performed at all throughout the eThekweni district such as the use of guidelines, protocols and the checklists.

6.2.3 Pregnant women's perceptions regarding antenatal care provided in the Primary Health Care clinics that were implementing the Basic Antenatal Care approach

While several participants perceived the ANC that was provided in the PHC clinics that were implementing the BANC approach to be good and appropriate, other participants raised several concerns about this service. Some of the pregnant women were not aware that there has been any change from the traditional to the BANC approach. It was evident from the statements of the participants that inadequate access and availability of ANC services was a factor in a few PHC clinics. The participants highlighted several aspects of the BANC approach that needed to be addressed such as the structure of the PHC clinics, the waiting times and availability and utilisation of resources. Performance and attitude of clinics' staff towards the pregnant women were two of the factors that were perceived by the participants as not being always up to their expected standards. Satisfaction of the participants with ANC services differed with some participants being satisfied and others not satisfied.

6.3 THE NEED FOR A TAILORED PRACTICE FRAMEWORK

It is apparent from the findings of the study that eThekweni district is required to put strategies in place to facilitate the implementation of the BANC approach. Several setting and client-specific factors as listed in Table 5.1 were identified as influencing how the BANC approach was being implemented thus highlighting the need to develop a tailored practice framework for the eThekweni district. The findings of the study, in relation to its first three objectives, highlight the areas on which to focus when developing the tailored practice framework.

6.4 PROPOSED FRAMEWORK FOR THE IMPLEMENTATION OF THE BASIC ANTENATAL CARE APPROACH

According to the results of the study, attention needs to be paid to each of the elements of the TQM Model. The recommendations that the researcher proposed, based on the findings of the study require actions and could be addressed at three levels/spheres of operation which are: management and administration, in-service training and skills development and operational levels. It is important that the three levels/spheres of operation should co-operate to put systems and processes in place to implement the BANC approach. Strategies for monitoring, evaluation and feedback are important and these should be in place at and between all levels. Communication between the three spheres and with other relevant stakeholders, a positive organisational culture and commitment to work should be strengthened in the eThekweni district.

6.4.1 Management and administration

Several aspects of planning that require managers' and administrators' decisions, or at least their support and guidance to be put in place, were not in place during the data collection phase of the current study. Amongst these were planning for service days and times and the categories of staff members that were involved in providing ANC services. Several management and administration processes were not performed according to the BANC Principles of Good Care and Guidelines. It is one of the main responsibilities of the management and administration team to ensure that national policies are communicated properly to the operational level through making them available, known and implemented at all relevant stake holders' levels. What is more critical is supportive management of the staff at operational level during implementation of the policies and guidelines. The following aspects are all responsibilities of the management and administration team:

- Facilitation of co-operative team work of relevant stakeholders such as the education and training section, operational level, EMRS and referral institutions.

- Involvement of the team members in identifying needs, areas and plans for change.
- Having strategies for monitoring, evaluation and feedback.
- Co-ordination of team building workshops for operational staff members to promote communication, a positive organisational culture and commitment.

6.4.2 In-service education and skills development

In the current study performance of certain categories of staff members was not up to standard. Several reasons could be responsible for this. The categories of staff in the PHC clinics were all qualified nurses in their respective fields of operation, who therefore would benefit from continuous in-service training in order to improve their performance and to keep them abreast with the current development in their practice. It is the responsibility of in-service education and skills development department/section to ensure that the skills and knowledge of the clinic's staff members are appropriate for the level of care and that they are kept up to date with the current developments in their field of practice. The in-service education and skills development team needs to be actively involved in the implementation of new developments in health services. It is evident from the findings of the current study with regards to performance of the clinics' staff that the involvement of the training colleges could benefit the implementation of the BANC approach. However, the current study did not assess the involvement of the training colleges. The importance of keeping trainers from the in-service education and skill development department/section updated about new developments so that they could be able to cascade the new development is evident. This would ensure that teaching and learning content during in-service education and training is in line with new developments and that necessary, adjustments and alignments of teaching content are done to incorporate new developments, where necessary. However, this aspect was also not addressed in the current study.

6.4.3 Operational level

Oakland (2007: 26) highlight the importance of the hard management necessities, also known as the four Ps (people, planning, processes and performance) and the soft outcomes, also known as the three Cs (communication, commitment and culture) in ensuring total quality management of any operation. According to Oakland (2007: 27), only if all four Ps and three Cs are integrated will they provide a simple framework for excellent performance, covering all angles and aspects of an organisation and its operations. The findings of the current study highlighted performance of the eThekwini district in respect of all four Ps and three Cs with some of these being performed well but others were not being implemented at all. It is evident that staff members at the operational level need to work hard to put systems in place with the support of the management and administration and education and training departments. Figure 6.1 presents a proposed framework for the implementation of the BANC approach in the eThekwini district. The framework includes the strategy for transition from the traditional approach to the BANC approach as this was identified to be one of the reasons that limited the successful implementation of the BANC approach in the current study.

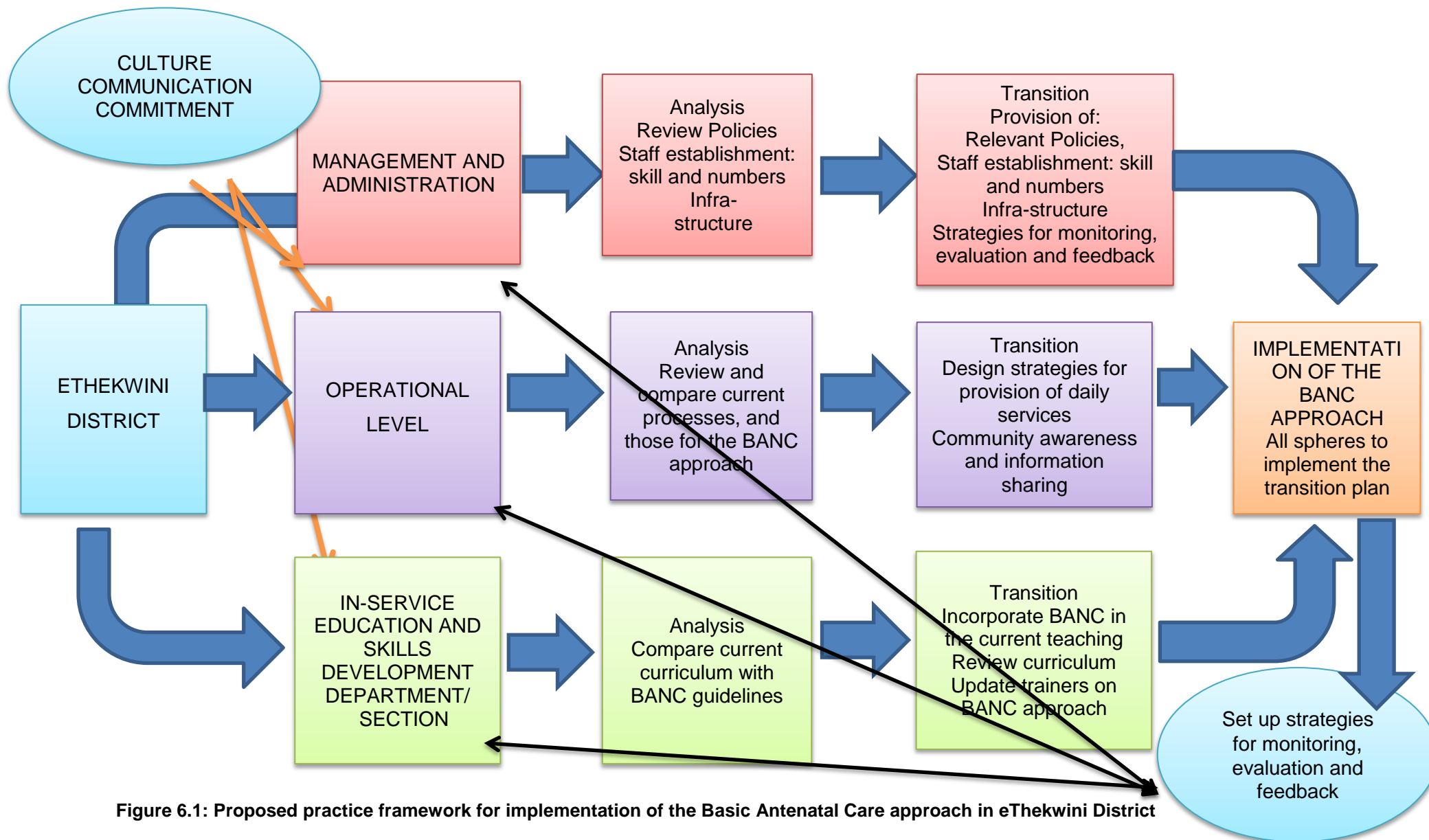


Figure 6.1: Proposed practice framework for implementation of the Basic Antenatal Care approach in eThekweni District

6.5 IMPLEMENTATION OF A TAILORED PRACTICE FRAMEWORK

All the spheres/levels, as discussed in section 6.2 of this thesis, should begin with creating an understanding of what needs to be done and how it should be done by conducting a situational analysis. This should entail comparing the current practice with requirements according to the BANC approach as detailed in the BANC Handbook (Pattinson 2007) and the BANC Principles of Good Care and Guidelines (Pattinson 2005a). This process should create an understanding of things that should be eliminated and those that should be retained in the current practice. Some of the things that should be retained could need to be strengthened. All aspects of the BANC approach that are missing in the current practice should be identified as things that need to be introduced. These were identified in the current study and are discussed in Chapter 4 and indicated in the summary of findings in Appendix 18.

Introducing change needs to be done gradually otherwise resistance to change could occur. The Victoria Quality Council (2006: 5) stated that even healthy changes involve discomfort, uncertainty and conflict and suggested that in order to minimise resistance, a careful and phased-in approach to change is required and an open trusting environment must be cultivated during the implementation of any change process. It is therefore important that everything that needs to be done is ranked according to priority beginning with the most important aspects. Strategies should, thereafter, be developed regarding the transition process to facilitate moving from the current to the ideal state. The next step should be the implementation phase, during which implementation of the BANC approach should be done according to the BANC Principles of Good Care and Guidelines. Strategies for monitoring and evaluation should also be put in place. It is important that all relevant stakeholders be involved or informed so as to gain their inputs and/or co-operation. Table 6.1 presents a guide on how to implement the framework; the findings of the current study are indicated as examples in the relevant sections. The guide is suitable to be used by all PHC clinics that are providing ANC services; those that are implementing the BANC approach and those

that are still commence the implementation. This guide could be used at regular interval to evaluate the programme.

(Transition from current state/traditional approach to the new)

A: UNDERSTANDING WHAT NEED TO BE DONE AND HOW IT IS TO BE DONE			
Current Practice	BANC approach		
Situational analysis: Policies and Guidelines Material and Human resources Processes and Practices	Analysis of implementation needs Policies and Guidelines Material and Human resources Processes and Practices		
B: TRANSITION PROCESS			
Current Practice	BANC approach		
Things to done away with People e.g. discrepancies between staff establishment in relation to skills and numbers	Things to retain People	Things already in place to strengthen People	Things to introduce People
Planning:	Planning	Planning	Planning
Processes	Processes	Processes	Processes
Performance:	Performance	Performance	Performance
Communication	Communication	Communication	Communication

6.6 CONCLUSION

Chapter 6 presented a framework for the implementation of the BANC approach in the eThekweni district and provided a guide on how to implement the framework. There are many factors that have been and are still contributing to increased and persistent maternal mortality rates in South Africa, such as disease burden including HIV and AID pandemic. The credit that most authors have attributed to the potential of ANC in reducing maternal and perinatal mortality rate cannot be discredited despite that the traditional approaches to provision of ANC services that have been used in developing countries including South Africa have been apparently unsuccessful to reduce these rates. The factors that impact on the high maternal and neonatal mortality rates in South Africa include quality of ANC; therefore, effective ANC is important for helping to reduce the mortality rates of mothers and babies.

The NDoH advocated for the implementation of the BANC approach as a quality improvement strategy in an attempt to reduce pregnancy-related mortalities. This was based on an understanding that quality ANC is a cornerstone for improving maternal and child care services. Much effort has been devoted to the implementation of the BANC approach and to the development of policies and protocols to strengthen maternal and child care services at national district and provincial levels. The current study has shown that some aspects of the BANC approach were implemented but many aspects were only partially applied or not applied at all in the PHC clinics that participated in the study such as the use of guidelines as the reference during service provision, development and, adherence to protocols specific to each PHC clinic and the use of checklists for the first and follow up visits, to name a few. This implies that there were many missed opportunities to enhance pregnancy-related outcomes through providing effective BANC services.

The current study identified the importance of strong collaboration and cooperation between relevant stake holders/spheres of operation such as management and administration, inservice education and skills development and the operational levels. The cooperative efforts of all these spheres of

operation can together assist to address some of the identified gaps especially that of making available clinic staff with skill, competence and passion to perform and implement the BANC approach. Consideration of clients and setting-specific factors that were identified in the eThekweni district by the current study were considered during the development of the framework and the implementation guide. The strength and opportunities are used as pillars that the district can build on in improving the quality of ANC services. The framework and guide could enhance the success of implementing BANC services in this district. Successful implementation of BANC services could help to reduce the maternal and neonatal mortality rates and pregnancy outcomes in this district, and possibly also in other districts of the KZN province and of other provinces of South Africa.

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UNICEF – see United Nations International Children's Emergency Fund.

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APPENDICES

Appendix 1: REC 27/13 Ethics approval by Durban University of Technology (Pilot/Pre-test)



INSTITUTIONAL RESEARCH ETHICS COMMITTEE (IREC)

31 May 2013

IREC Reference Number: **REC 27/13**

Ms T S P Ngxongo
16 Talana Place
Seaview
4094

Dear Ms Ngxongo

Implementation of the Basic Antenatal Care approach: A tailored practice framework for eThekweni District KwaZulu-Natal

I am pleased to inform you that Full Approval has been granted to your proposal REC 27/13.

The Proposal has been allocated the following Ethical Clearance number IREC 043/13. Please use this number in all communication with this office.

Approval has been granted for a period of one year, before the expiry of which you are required to apply for safety monitoring and annual recertification. Please use the Safety Monitoring and Annual Recertification Report form which can be found in the Standard Operating Procedures [SOP's] of the IREC. This form must be submitted to the IREC at least 3 months before the ethics approval for the study expires.

Any adverse events [serious or minor] which occur in connection with this study and/or which may alter its ethical consideration must be reported to the IREC according to the IREC SOP's. In addition, you will be responsible to ensure gatekeeper permission.

Please note that any deviations from the approved proposal require the approval of the IREC as outlined in the IREC SOP's.

Please note that you may continue with validity testing and piloting of the questionnaire. Research on the proposed project may not proceed until IREC reviews and approves the final questionnaire.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'D. Naude'.

Dr D F Naude
Chairperson: IREC



Appendix 2: REC 27/13 Full Ethics approval by Durban University of Technology



INSTITUTIONAL RESEARCH ETHICS COMMITTEE (IREC)

30 July 2013

IREC Reference Number: **REC 27/13**

Ms T S P Ngxongo
16 Talana Place
Seaview
4094

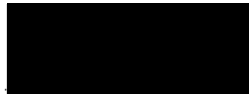
Dear Ms Ngxongo

Implementation of the Basic Antenatal Care approach: A tailored practice framework for eThekweni District KwaZulu-Natal

The Institutional Research Ethics Committee acknowledges receipt of your notification regarding the piloting of your data collection tools.

Please note that you may now proceed with research on the proposed project.

Yours Sincerely,



Prof J K Adam
Chairperson: IREC

Appendix 3a: Support Letter from the Professional Statistician
(Sampling)

Gill Hendry B.Sc. (Hons), M.Sc. (Wits)
Mathematical and Statistical Services

Cell: 083 300 9896

email: hendryfam@telkomsa.net

19 February 2013

To whom it may concern

Please be advised that Thembelihle Ngxongo (student number 21031625) who is presently studying for a D Tech: Nursing is consulted with me regarding the sampling strategy she will use for her study.

Yours sincerely

Gill Hendry (Mrs)

Appendix 3b: Support Letter from the Professional Statistician (Data analysis)

Gill Hendry B.Sc. (Hons), M.Sc. (Wits)
Mathematical and Statistical Services

Cell: 083 300 9896
email : hendryfam@telkomsa.net

22 May 2015

To whom it may concern

Please be advised that I have assisted Thembelihle Ngxongo (student number 21031625), who is presently studying for a D Tech: Nursing, with the statistical analysis for her study.

Yours sincerely

Gill Hendry (Mrs)

Appendix 4: Support Letter from the Professional Language Translator



To whom it may concern

This is to confirm that I **Nqobile L. Biyela (BTech: Translation and Interpreting practice)** assisted **Ms Thembelihle Ngxongo** in translating the information letter and interview guide for the participants from English into isiZulu and back to English.

My assistance included verifying that no messages were lost or altered during the translation and back translation.

Regards

Nqobile Lovable Biyela



Lecturer

EMAIL : nqobileb1@dut.ac.za

TEL : +27 31 373 6804 or

TEL : +27 31 373 5119

Appendix 5a: Support Letter from the Professional Language Editor

Valerie Janet Ehlers

Nurse Consultant and Researcher

Emeritus Professor and Research Fellow: University of South Africa

Associate Editor: International Nursing Review

**(B Soc Sc (University of Natal), Honours B Soc Sc, BA Cur, Honours BA Cur,
MA Cur, D Lit et Phil, Diploma in Development Administration, TAALKU-F for
Diploma in Translation- Unisa))**

CONFIRMATION LETTER: EDITING OF A DOCUMENT

**266 Pat Dyer Avenue
ERASMUSRAND
0181**

**PO Box 65075
ERASMUSRAND
0165
22 May 2015**

Tel: 012 347 8287
Cell: 084 587 3303

e-mail: ehlersjh@mweb.co.za

2 March 2015	I hereby certify that I have edited the following doctoral thesis entitled: Implementation of the basic antenatal care approach: a tailored practice framework for eThekweni district, Kwazulu-Natal by Ms STP Ngxongo
-----------------	---

Thank you

Prof VJ Ehlers

Appendix 5b: Support Letter from the Professional Language Editor

DR RICHARD STEELE

BA, HDE, MTech(Hom)

HOMEOPATH and EDUCATOR

Registration No. A07309 HM

Practice No. 0807524

Part-time lecturer, Dept of Homeopathy, DUT
Freelance academic editor

110 Cato Road
Glenwood, Durban 4001
031-201-6508/082-928-6208
Fax 031-201-4989
Postal: P.O. Box 30043, Mayville 4058
Email: rsteele@telkomsa.net

EDITING CERTIFICATE

Re: Thembelihle Sylvia Patience Ngxongo

**Implementation of the Basic Antenatal Care approach: A tailored practice framework
for eThekweni District, KwaZulu-Natal**

I confirm that I have edited the layout and references of this thesis. I was not asked to edit the main text. I am a freelance editor specialising in proofreading and editing academic documents. My original tertiary degree which I obtained at UCT was a B.A. with English as a major and I went on to complete an H.D.E. (P.G.) Sec. with English as my teaching subject. I obtained a distinction for my M.Tech. dissertation in the Department of Homeopathy at Technikon Natal in 1999 (now the Durban University of Technology). In my capacity as a part-time lecturer in the Department of Homeopathy I have supervised numerous Master's degree dissertations.

Dr Richard Steele

05 June 2015

electronic

Appendix 6a: Permission Letter to Provincial Office

16 Talana Place
Seaview
4094
5 June 2013

The Provincial Manager
Provincial Health Authority
Department of Health
Box 330 Langalibalele Road
Pietermaritzburg
3200

Dear Sir/ Madam

Re: REQUEST FOR A PERMISSION TO CONDUCT A STUDY

I am presently registered as a PHD student at the Durban University of Technology in the Department of Community Health Studies, Nursing Programme. The proposed title of my research project is Implementation of the Basic Antenatal Care approach: *A tailored practice framework for eThekweni District KwaZulu-Natal*. The aim of the study is to develop a tailored best practice framework to facilitate and sustain implementation of the BANC approach in eThekweni district in line with the provision of the BANC Principles of Good Care and Guidelines.

The study will be conducted in the fixed PHC clinics of eThekweni district using both Municipality and PROVINCIAL HEALTH AUTHORITY clinics and will be conducted in two phases. Observations and record reviews will be done in the first phase to assess how the ANC approach is being implemented. The second phase will include individual semi-structured interviews with the pregnant women to assess their experiences with the health care that they receive in the PHC clinics that are implementing the BANC approach. The information from the two phases will be used to develop a tailored the best practice framework for eThekweni District.

The researcher will safeguard against compromising the safety of the pregnant women. She will involve the midwives working in the PHC clinics and her experience as the advanced midwife to establish the safety of spending some time with the pregnant women during the information giving,

and also during interview sessions. The researcher will also ensure not to disrupt the normal functioning of the PHC clinics. An arrangement will be made with the manager in-charge of the PHC clinic and also with the midwives regarding the suitable time when the group and individual sessions will be conducted. The codes will be assigned for the health authority, the PHC clinic, the pregnant women and the maternity case record in order to ensure that there is no link between the information and the study participant. The codes will be used throughout the entire study including in the presentation of results.

I hereby request your permission to conduct a research project at your institute. I will require to use a total of seven PHC clinics. One of which will be used for a pretesting the data collection instruments and procedures and the other six clinics will be for the main study. I will randomly select two PHC clinics from each sub-district. However the study will focus only on the PHC clinics with the ANC pregnant woman caseload of 200 or more pregnant women per month. My research proposal has been attached for your perusal.

Your support and permission to conduct the study in your facility will be appreciated.

Yours sincerely

.....
Mrs. TSP Ngxongo: Student Number 21031625

Supervisor: Prof. MN. Sibiya

Co-supervisor: Prof NS. Gwele

Appendix 6b: Approval Letter from Provincial Office



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

Health Research & Knowledge Management sub-component
10 – 103 Natalia Building, 330 Langalibalele Street
Private Bag x9051
Pietermaritzburg
3200
Tel.: 033 – 3953189
Fax.: 033 – 394 3782
Email.: hrkm@kznhealth.gov.za
www.kznhealth.gov.za

Reference : HRKM 184/13
Enquiries : Mr X Xaba
Tel : 033 – 395 2805

Dear Ms TSP Ngxongo

Subject: Approval of a Research Proposal

1. The research proposal titled '**Implementation of the Basic Antenatal Care approach: A tailored practice framework for eThekweni District**' was reviewed by the KwaZulu-Natal Department of Health.

The proposal is hereby **approved** for research to be undertaken at PHC clinics implementing Antenatal care using the Basic Antenatal Care Approach.

2. You are requested to take note of the following:
 - a. Make the necessary arrangement with the identified facility before commencing with your research project.
 - b. Provide an interim progress report and final report (electronic and hard copies) when your research is complete.
3. Your final report must be posted to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to hrkm@kznhealth.gov.za

For any additional information please contact Mr X. Xaba on 033-395 2805.

Yours Sincerely

Dr E Lutge

Chairperson, Health Research Committee

Date: 26/06/2013

uMnyango Wezempilo . Departement van Gesondheid

Fighting Disease, Fighting Poverty, Giving Hope

Appendix 7a: Permission Letter to eThekweni District Office

16 Talana Place

Seaview

4094

5 June 2013

The District Manager
EThekweni Department of Health
Highway House
Durban
4000

Dear Sir/ Madam

REQUEST FOR A PERMISSION TO CONDUCT A STUDY

I am presently registered as a PHD student at the Durban University of Technology in the Department of Community Health Studies, Nursing Programme. The proposed title of my research project is *Implementation of the Basic Antenatal Care approach: A tailored practice framework for eThekweni District KwaZulu-Natal*. The aim of the study is to develop a tailored best practice framework to facilitate and sustain implementation of the BANC approach in eThekweni district in line with the provision of the BANC Principles of Good Care and Guidelines.

The study will be conducted in the fixed PHC clinics of eThekweni district using both Municipality and Provincial Health Authority clinics and will be conducted in two phases. Observations and record reviews will be done in the first phase to assess how the ANC approach is being implemented. The second phase will include individual semi-structured interviews with the pregnant women to assess their experiences with the health care that they receive in the PHC clinics that are implementing the BANC approach. The information from the two phases will be used to develop a tailored the best practice framework for eThekweni District.

The researcher will safeguard against compromising the safety of the pregnant women. She will involve the midwives working in the PHC clinics and her experience as the advanced midwife to establish the safety of spending some time with the pregnant women during the information giving, and also during interview sessions. The researcher will also ensure not to disrupt the normal functioning of the PHC clinics. An arrangement will be made with the manager in-charge of the PHC clinic and also with the midwives regarding the suitable time when the group and individual sessions

will be conducted. The codes will be assigned for the health authority, the PHC clinic, the pregnant women and the maternity case record in-order to ensure that there is no link between the information and the study participant. The codes will be used throughout the entire study including in the presentation of results.

I hereby request your permission to conduct a research project at your institute. I will require to use a total of seven PHC clinics. One of which will be used for pretesting data collection instruments and procedures and the other six clinics will be for the main study. I will randomly select two PHC clinics from each sub-district. However the study will focus only on the PHC clinics with the ANC pregnant woman caseload of 200 or more pregnant women per month. My research proposal has been attached for your perusal.

Your support and permission to conduct the study in your facility will be appreciated.

Yours sincerely

.....
Mrs. TSP Ngxongo: Student Number 21031625

Supervisor: Prof MN. Sibiya

Co-supervisor: Prof NS. Gwele

Appendix 7b: Approval Letter from eThekwini District Office



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

Postal Address: Private Bag X54318 Durban 4000
ss: 83 Jan Smuts Highway, Mayville, Durban 4001
Tel. 031 2405308; Fax: 031 2405500
Email: nan.hoosain@kznhealth.gov.za
www.kznhealth.gov.za

Enquiries: Ms Jabu Hlazo
Tel: 031 240 5303
Date: 6 June 2013

Attention: Ms. T.S.P. Ngxongo – thembelihlen@dut.ac.za

REQUEST TO CONDUCT RESEARCH:

"Implementation of the Basic Antenatal approach : A tailored Practice framework for eThekwini District KwaZulu-Natal." Ref: REC 27/13

Support is hereby granted to conduct research on the above topic.

Please note the following:

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regard to this research.
2. This research will only commence once this office has received confirmation from the Provincial Health Research Committee in the KZN Department of Health.
3. Please ensure that this office is informed before you commence your research.
4. The District Office will not provide any resources for this research.
5. You will be expected to provide feedback on your findings to the District Office.


For The District Manager
eThekwini Health District
Telephone: 031 2405303
Fax: 031 2405500
Email: jabulisiwe.hlazo@kznhealth.gov.za

uMnyango Wezempilo . Departement van Gesondheid

Appendix 8a: Permission Letter to eThekweni Municipality

16 Talana Place
Seaview
4094
5 June 2013

The Head of Health Unit
EThekweni Municipality
9 Archie Gumede Place
Durban
4000

Dear Sir/ Madam

Re: REQUEST FOR A PERMISSION TO CONDUCT A STUDY

I am presently registered as a PHD student at the Durban University of Technology in the Department of Community Health Studies, Nursing Programme. The proposed title of my research project is *Implementation of the Basic Antenatal Care approach: A tailored practice framework for eThekweni District KwaZulu-Natal*. The aim of the study is to develop a tailored best practice framework to facilitate and sustain implementation of the BANC approach in eThekweni district in line with the provision of the BANC Principles of Good Care and Guidelines.

The study will be conducted in the fixed PHC clinics of eThekweni district using both Municipality and Provincial Health Authority clinics and will be conducted in two phases. Observations and record reviews will be done in the first phase to assess how the ANC approach is being implemented. The second phase will include individual semi-structured interviews with the pregnant women to assess their experiences with the health care that they receive in the PHC clinics that are implementing the BANC approach. The information from the two phases will be used to develop a tailored the best practice framework for eThekweni District.

The researcher will safeguard against compromising the safety of the pregnant women. She will involve the midwives working in the PHC clinics and her experience as the advanced midwife to establish the safety of spending some time with the pregnant women during the information giving, and also during interview sessions. The researcher will also ensure not to disrupt the normal functioning of the PHC clinics. An arrangement will be made with the manager in-charge of the PHC clinic and also with the midwives regarding the suitable time when the group and individual sessions will be conducted. The codes will be assigned for the health authority, the PHC clinic, the pregnant women and the maternity case record in-order to ensure that there is no link between the information and the study participant.

The codes will be used throughout the entire study including in the presentation of results.

I hereby request your permission to conduct a research project at your institute. I will require to use a total of seven PHC clinics. One of which will be used for pretesting data collection instruments and procedures study and the other six clinics will be for the main study. I will randomly select two PHC clinics from each sub-district. However the study will focus only on the PHC clinics with the ANC pregnant woman caseload of 200 or more pregnant women per month. My research proposal has been attached for your perusal.

Your support and permission to conduct the study in your facility will be appreciated.

Yours sincerely

.....
Mrs. TSP Ngxongo: Student Number 21031625

Supervisor: Prof MN Sibiyi

Co-supervisor: Prof NS Gwele

Appendix 8b: Approval Letter from eThekwini Municipality



HEALTH, SOCIAL SERVICES Health Unit

9 Archie Gumede Place
P O Box 2443, Durban, 4000
Durban, 4001
Tel: 031 311 3523, Fax: 031 311 3530
www.durban.gov.za

Dear T.S.P. Ngxongo

3 September 2013


Subject: Approval of a research proposal.

The research proposal titled: **Implementation of Basic Ante natal care approach: A tailored practice framework for eThekwini district Natal** was reviewed by the eThekwini Municipal Health Department Research Committee. The study is hereby **approved**.

The following to be noted:

- Submission of the indemnity form obtainable from the EThekwini Municipality Health Unit before commencement of the study.
- Prior arrangements to be made with the facility and an assurance that all services will not be disrupted.
- No staff member should be used for collecting data for the researchers.
- Progress reports to be provided and the final report of the study to the eThekwini Municipality Health Unit or emailed to: grace.mufamadi@durban.gov.za
- Obtain permission from the eThekwini municipality health department for press releases and release of results to communities/stakeholders.
- The department has to receive recognition for the assistance given.
- Any amended to the study to be communicated with the eThekwini Municipality Health Unit and the relevant amendment form obtainable from the unit to be submitted.
- Withdrawal of permission to conduct research will be left to the discretion of the eThekwini Municipality Health Unit.

Yours faithfully
Dr N. Ngomane
Deputy Head: Clinical Support

Signature: 

Date: 05.09.2013

Appendix 8c: Indemnity for eThekweni Municipality

No. M.1/1/2

Director : Health
Box 2443
DURBAN
4000

Researcher- Name: MRS. T. S. P. Ngxongo
Institution- Name: DURBAN UNIVERSITY OF TECHNOLOGY
Institution- Address: P.O. BOX 1334
Durban
4000

Research Subject:

1. PHASE 1A:- Observations done on staff in action and clinic processes
2. PHASE 1B:- Record Review - Maternity Case Records
3. PHASE 2:- Interviews with Pregnant Women

Dear Sir/Madam

RESEARCH SITE : ETHEKWINI MUNICIPALITY HEALTH DEPARTMENT

I, the undersigned, hereby wish to apply for permission to attend the eThekweni Health Department to undertake research on Council property.

I understand that any permission granted to me will be subject to:

- (a) there being no additional cost to the Council; and
- (b) the exigencies of the eThekweni Health Department, and provided that no interference with its programme will ensue.

In consideration of the facilities given and to be given to me by the eThekweni City Council, as aforesaid, I hereby indemnify the said Council and its officers and hold it and them harmless against and hereby waive, renounce and abandon any claim for damages or compensation arising from injury or loss which I may sustain whilst on Council property or transport or on the way to or from any Council property or place of research or which I may sustain in any way whatsoever whilst conducting research.

I further indemnify the eThekweni Council and its officers against any claim whatsoever which may in any way result from the facilities afforded to me and be brought against the said Council or its officers.

Date: 10/09/2013

[Signature]
Researcher's Signature

Witness: [Signature]

TIEMBELE SLYVIA PATIENCE NGXONGO
Researcher's Name (in capital letters)

Permanent Address:

16 TALANA PLACE SEAVIEW 4094

Period
From: 23/09/2013 to 23/09/2014

Appendix 8d: Acknowledgement of Research Conditions (eThekweni Municipality)



**HEALTH, SOCIAL SERVICES
Health Unit**

9 Archie Gumede Place
P O Box 2443, Durban, 4000
Durban, 4001
Tel: 031 311 3523, Fax: 031 311 3530
www.durban.gov.za

3 September 2013

ACKNOWLEDGEMENT OF RESEARCH CONDITIONS:

I Ms. T.S.P. Ngxongo undertake to comply with EThekweni Health Unit's conditions for the study, as stipulated in the permission letter.

Name and signature of principal investigator:

Name: T.S.P. Ngxongo Signature: [Redacted] Date: 10/09/2013

Name and signature of other researchers:

Name: _____ Signature: NONE Date: _____
Name: [Redacted] Signature: _____ Date: _____
Name: [Redacted] Signature: _____ Date: _____
Name: [Redacted] Signature: _____ Date: _____

Appendix 9: Agreement between Researcher and Research Assistants



LETTER OF AGREEMENT BETWEEN THE RESEARCHER AND RESEARCH ASSISTANT PLUS INSTRUCTIONS

The researcher in her study on Implementation of the Basic Antenatal Care approach: A tailored practice framework for eThekweni District KwaZulu-Natal requires collecting data from 12 PHC clinics in eThekweni district. Data will be collected in the months of October to December 2013. The research assistant is required to assist with observations, record reviews and distribution of information letters and signing of consent forms.

Instructions to the research assistant

- 1 The research assistant will be expected to visit 12 fixed PHC facilities that has been identified by the researcher.
- 2 Transport will be provided for the assistant to travel to and from all 12 facilities.
- 3 The assistant will be paid R100.00 per day.
- 4 A total of R9000.00 will be paid in cash on completion of data collection.
- 5 The research assistant will assist with distribution and collection of consent forms and information letters to the pregnant women, observations and record reviews of maternity case records in each facility visited.
- 6 Observations will be done for a duration of five days in each of the 12 PHC clinics (total 60 days for the entire study)
- 7 A total of 100 maternity case records must be reviewed in each PHC facility (total 1200 for the entire study).
- 8 Each pregnant woman who agrees that her maternity case record be reviewed will be made to sign a written consent.
- 9 The research assistant must work and return the maternity case record back to the pregnant woman immediately (same day).
- 10 The research assistant must ensure timing of using the maternity case record that will not disrupt the functioning of the PHC facility or inconvenience the pregnant woman.
- 11 The research assistant should remain in the facility for the whole day (08h00-15h30) so that:
 - She/he is available to guide the pregnant women in signing up the consent forms;
 - She/he has sufficient time to review the maternity case records without disrupting the functioning of the PHC facility.
 - Able to observed all the stipulated activities

Agreement

This is to certify that I
ID. No:have agreed to assist the researcher
Mrs T.S.P Ngxongo in the process of collecting data from the 12 PHC facilities
in eThekweni District. I have read and fully understood all the written
instructions as stated in this agreement letter. I voluntary agree to assist the
researcher on the agreement that the researcher will pay me R100.00 for
each day that I will visit the PHC facility and that a total of R9 000.00 will be
paid in cash on completion of data collection.

Signed_____ Date_____

Research assistant

Signed_____ Date_____

Researcher

Signed_____ Date_____

Witness

Acknowledgement of payment

I.....
..... ID. No..... acknowledge that on the
..... a total amount of R9000.00 was paid to me in cash by
Mrs TSP Ngxongo for having assisted her with data collection in the 12 PHC
facilities for her study on Implementation of the Basic Antenatal Care
approach: A tailored practice framework for eThekweni District KwaZulu-Natal.

Signed_____ Date_____

Research assistant

Signed_____ Date_____

Researcher

Signed_____ Date_____

Witness

Appendix 10a: Letter of Information and Consent (English)



Thank you for agreeing to participate in this study.

Title of the Research Study: Implementation of the Basic Antenatal Care approach: A tailored practice framework for eThekweni District KwaZulu-Natal

Principle Investigator/s/researcher: Ms TSP Ngxongo (D Tech Candidate)

Co-Investigator/s/supervisor/s: Dr MN Sibiya (D Tech: Nursing) and Prof NS. Gwele PhD

Brief Introduction and Purpose of the Study: I will be conducting the study about the quality of care that you are getting at the clinic as you are pregnant. I am interested to find out two things (1) how the clinic provides care to the pregnant women and (2) your experiences and your opinion regarding the care that you are getting at your clinic as you are pregnant. I will use the information to prepare and write the steps that should be followed by the nurses at your clinic in order to make sure that the care that you receive is improved

Outline of the Procedures: I will start by observing how the pregnant women are being cared for at your clinic. As part of the observations I am requesting your permission to check for some information from your clinic card. This will help me to assess the quality of care that you are receiving from the clinic. I will remain in your clinic for a maximum of one week. I am requesting that during one of the days in that week, you give me your clinic card. I will keep it for about 15-20 minutes thereafter return it back to you the very same day. This will be on one of the days when you visit the clinic for your routine pregnancy care. I am also requesting to conduct a meeting with you to discuss how you have experienced the care at the clinic as you are pregnant. I will prepare a few sets of simple questions for you, not as a test but just to make sure that our meeting allows me to gather the information that I need. You will be allowed to express your feelings and experiences in your own way and in your own words during the meeting. The meeting will take place in a safe, comfortable and private place in the clinic. The meeting will be at the time that is convenient to you and that will not interrupt your care at the clinic. The researcher will be using a voice recorder to record the conversation during the meeting in order to ensure that the information is captured correctly. The researcher will also write down some notes in order to substantiate the information that will be recorded.

Discomforts to the Subject: There is no risk or discomfort that will be happen when you take part in the study. We will have a relaxed friendly talk and I will ensure that the place where we meet is comfortable and private for you. You will be allowed to respond or discuss only the matters that you are comfortable to discuss. The meeting will not be too long. I am anticipating

that it will take about 30-45 minutes. However, we will stop at any point if for some reasons you are not comfortable to continue with the meeting.

Benefits: The study will benefit you as pregnant women to verbalise how you feel about the care that you are getting at the clinic. I intend to use the information that you will share with me to develop a guide that will be used by the nurses at your clinic when taking care the pregnant women. This will help to improve the care that you and other women are getting at the clinics when you are pregnant.

Reason/s why the Subject May Be Withdrawn from the Study: You are allowed not to join the study if you wish. If you decide to join but later on you feel you do not want to continue anymore, you are allowed to stop at any point.

Remuneration: You will not be expected to pay anything for taking part in the study and also there will be no payment in the form of money or any other form that you will receive for taking part in the study

Confidentiality: All the information will be kept in strict privacy. Your name will not be appearing on the notes that will be written during the study except on the top sheet of the notes and the form that you will have signed to give the permission take part in the study. Both these two pieces of papers will be removed immediately after the meeting and will be locked away in a safe and private place, separate from other documents for this study. All the information gathered during the study will be used for the purpose of this study only.

Research-related Injury: No compensation, however: The nature of the study does not have any risk of injury to you.

Persons to Contact in the Event of Any Problems or Queries:

The researcher 083 376 1747 office 031-3732609 or the supervisor at or the supervisor at 031-3732606 or the Institutional Research Ethics administrator on 031-373 2900.

Statement of agreement to participate in the research study: If you are willing to participate in the study may I request that you sign the agreement in the next page.

Statement of Agreement to Participate in the Research Study:

I,(subject's full name).

ID number: have read this document in its entirety and understand its contents. Where I have had any questions or queries, these have been explained to me by Mrs TSP Ngxongo to my satisfaction. Furthermore, I fully understand that I may withdraw from this study at any stage without any adverse consequences and my future health care will not be compromised. I, therefore, voluntarily agree to participate in this study and also agree that my clinic record card be used during the study.

Subject's name (print)

Subject's signature:Date:

Researcher's name (print):

Researcher's signature:Date:

Appendix 10b: Letter of Information and Consent (IsiZulu)



Siyabonga kakhulu ngokuvuma ukuba inxenye yalolucwaningo.

Isihloko socwaningo: Ukusetshenziswa kohlelo lwabantu abakhulelwe oluyisiqalo: Indlela yokusebenza evumelana nesifundazwe saseThekwini KwaZulu-Natal

Umcwaningi ophezulu : Nkosikazi TSP Ngxongo (umfundi weziqu zobudokotela)

Abacwaningi abasebenzisana naye : Dokotela MN Sibiya (udokotela kwezobuhlengikazi) kanye no Solwazi. NS. Gwele (Iziqu zobuDokotela)

Isingeniso esifishane nenhloso yocwaningo: Ngizobe ngenza ucwaningo ngobuhle bokunakekelwa okuthola emtholampilo njengoba ukhulelwe. Ngifisa ukwazi ngezinto ezimbili: (1) Ukuthi umtholambilo unikeza kanjani usizo lokunakekelwa kwabesifazane abakhulelwe kanye (2) nalokho ohlangabezana nakho kanye nemibono yakho maqondana nokunakekelwa okuthola emtholampilo wakho njengoba ukhulelwe. Lemininingwane ngizoyisebenzisa ukuhlela ngibhale izinyathelo okudingeka ukuba zilandelwe abahlengikazi emtholampilo wakho ukuze kube nesiqiniseko sokuthi ukunakekeleka kwakho kuyathuthuka.

Uhlelo lwezinyathelo zocwaningo: Ngayoqala ngokubheka indlela okunakekelwa ngayo abesifazane abakhulelwe emtholampilo wakho. Njengemvume yalolucwaningo ngicela ungivumele ukuthi ngibheke ikhadi lakho lasemtholampilo. Lokhu kuyongisiza ukuthi gnithole ulwazi lokuthi lingakanani izinga lokunakekelwa kwakho emtholampilo. Ngiyoba semtholampilo isikhathi esingangesonto elilodwa. Ngiyacela ukuthi ngolunye usuku kulelosonto unginike ikhadi lakho. Ngiyoligcina imizuzwana eyishumi nanhlanu kuya kwengamashumi amabili kuphela bese ngilibuyisela emuva kuwena ngalo lolosuku. Lokhu kuyoba ngosuku oluvele luhlelwe ukuba uvakashele umtholampilo wakho ukuzoxukuza. Ngiyacela futhi ukuba sibe nomhlangano nawe ukuze sixoxisane ngezinga lempatho ohlangabezane nayo njengoba ukhulelwe. Ngiyohlela imibuzo embalwa futhi elula, hayi ngenhloso yokukuhlola kodwa ukunikeza isiqiniseko sokuthi umhlangano wethu unginikeza lololwazi engiludingayo. Umhlangano uyokunikeza ithuba lokuthi ubeke imizwa yakho kanye nalokho ohlangabezane nakho ngendlela yakho nangamazwi akho. Ngiyosiqiniseka ukuthi umhlangano wethu uba sendaweni ephephile, ethokomele futhi eyimfihlo emtholampilo. Umhlangano uyoba ngesikhathi esivumelana nawe futhi esingeke siphazamise ukunakekelwa kwakho emtholampilo. Umcwaningi uyosebenzisa isiqophamazwi ukwenzela isiqiniseko sokuthi ingxoxo yomhlangano ithathwe ngendlela eyiyo. Futhi umcwaningi uyobhala phansi amanothi ukwenzela ukulekelela leyo mininingwane eqoshiwe

Ukungaphatheki kahle kongenele ucwaningo: Abukho ubungozi kumbe ukungaphatheki kahle okuyokwenzeka uma ungenela ucwaningo. Siyoba nengxoxo ekhululekile futhi ngiyoyikelela ukuthi indawo lapho siyohlanganela khona ithokomele futhi iyimfihlo. Uyovumeleka ukuphendula nokuxoxa lezoxoxo okhululekile ukuzixoxa. Umhlangano wethu angeke ube mude kakhulu, ngilindele ukuba uthathe imizuzwana engamashumi amathathu kuya kwengamashumi amane nesihlanu. Kodwake, siyoma kunoma iliphi ithuba uma ngesizathu esithile ungasakhululekile ukuqhubeka nomhlangano

Inzuzo: Lolucwaningo luyokusiza wena njengomama okhulelwe ukuba uveze uvo lwakho ngezinga lokunakekeleka okuthola emtholampilo wakho. Ngihlose ukusebenzisa imininingwane oyonginika yona ukwakha uhlelo oluyosetshenziswa abahlengikazi emtholampilo wakho. Lokhu kuyosiza ukukhuphula izinga lokunakekeleka okutholwa nguwe kanye nabanye abesifazane abakhulelwe kwimitholampilo

Isizathu esingenza ongenele ucwaningo aphume kucwaningo: Uvumelekile ukungalungeneli lolucwaningo uma ufisa kanjalo. Uma uhlela ukulungenelela lolucwaningo kodwa kuthi endleleni uzizwe ungasafisi ukuqhubeka uvumelekile ukuma kunoma iliphi izinga.

Umhlomulo: Awulindelekile ukukhokha lutho ngokungenela lolucwaningo, ngokunjalo nawe akukho nokhelo oyoyithola ngohlelo lwemali noma okunye ngokulungenelela lolucwaningo.

Imfihlo: Yonke imininingwane yogcinwa ngendlela efihlele kakhulu. Igama lakho angeke libhalwe emapheshaneni aqukethe izingxoxo ngaphandle kwepheshana elingaphezulu kuhlelo lwemihlangano kanye nepheshana oyolisebenzisa ukusayina imvume yokungenela ucwaningo. Womabili lamapheshana ayohlusulwa ngokushesha emuva komhlangano wethu abese eyogcinwa endaweni ephephile, eyimfihlo futhi ehlukile kwamanye amapheshana ocwaningo. Yonke imininingwane eqoqiwe iyosetshenziselwa inhloso yalolucwaningo kuphela.

Ukulimala okuqondene nocwqaningo: Asikho isinxephezelo, kodwa isimo salolucwaningo asinabo ubungozi kuwena

Abantu onabathinta uma kukhona izinkinga noma zaluphi uhlobo nemibuzo

Umcwaningi 083 376 1747 Ihovisi 031-3732609 noma

Umeluleki 031 3732606 kumbe osizana nomeluleki 031-373 2284 noma

Umhleli wophiko lwezokucwaninga :031-373 2900.

Umusho wesivumelwano sokubamba iqhaza kucwaningo: Uma unesifiso sokubamba iqhaza kulolucwaningo ngiyacela ukuba usayinde isivumelwano ekhasini elilandelayo.

Umusho wesivumelwano sokubamba iqhaza kucwaningo:

Mina,(amagama aphelele alowo ongenela ucwaningo). Inombolo kamazisi:ngifundile lencwajana ngokuphelele futhi ngiyaqonda konke okubhalwe kuyo. Lapho benginemibuzo nokungaqondi khona konke lokhu kuchaziwe kimi unkosikazi T Ngxongo ngendlela enganelisayo. Okungaphezulu ngiyaqonda ngokugcwele ukuthi ngingakwazi ukuphuma kulolucwaningo noma ngasiphi isikhathi ngaphandle kokwehlelwa izimo ezimbi futhi impilo yami yakusasa angeke iphazamiseke. Ngaloko-ke mina ngokuzikhethela ngiyavuma ukubambisana nalolucwaningo futhi ngiyavuma ukuthi imibhalo esekhadini lami lasemtholampilo isetshenziswe kulolucwaningo.

Igama longenele ucwaningo:

Isishicilelo songenele ucwaningo:Usuku:

Igama lomcwaningi:

Isishicilelo somcwaningi:.....Usuku:

Ufakazi:.....

Isishicilelo sikafakazi:Usuku:

Appendix 11: Data Collection Tool for the Observations

OBSERVATION TOOL

Section A: Identification information

FACILITY Code

Health authority Code

Visit No

Observer:

.....

Date:.....

Day:

.....

From: (time).....

To:

.....

Pregnant woman load	Number
Total number of pregnant woman in the clinic	
Total ANC pregnant women first time	
Total ANC pregnant women repeat visit	
Operational manager	

Operating Hours of the clinic	From	To	Total	Monday to Friday		Weekends and Public Holidays	
				YES	NO	YES	NO

Staff establishment	Number in the clinic	Number involved in ANC
Total number of Advanced midwives		
Total number of midwives		
Total number of professional nurses		
Total number of enrolled nurses		
Total number of enrolled nursing assistance		

Total number of counsellors		
Total number of clerks		

NB: The observer to gather the information required on this page from the person in-charge of the clinic on the day of observations.

Section: B.

ACTIVITY/ELEMENT OBSERVED		Yes Always	Yes Sometimes	No
1. Provision of ANC :	Service available every day of the week			
	All pregnant who present at the clinic for ANC services accepted			
2. Evidence of using BANC:	All women who are diagnosed with pregnancy are offered choice to keep or terminate the pregnancy			
	First ANC provided on the day pregnancy is diagnose or the very first time the women presents at the clinic			
	First visit consultation provided before transfer of all pregnant women who for some reason need to attend ANC in another clinic			
	Principles of good Care & Guidelines used as reference to provide ANC			
	Clinic specific protocols on management of pregnant women used			
	Checklist for first and follow up visits used			
	Maternity case records given to pregnant women to take home			
3. Clinic culture and Communication	Clinic staff courteous, professional and approachable to the pregnant women			
	Clear directions and instructions given to pregnant women about clinic procedures			
	Professionalism and courteousness between staff			
	Clinic staff assisting each other when need arises			
	Communication with referral institution possible			
	EMRS respond to emergency calls within two hours			
	Pregnant women informed about examination findings			

ACTIVITY/ELEMENT OBSERVED		Yes Always	Yes Sometimes	No
Performance and processes	Rapid appraisal done by midwives in the waiting area			
	Emergency pregnant women given priority			
	Privacy maintained during consultation and examination			
	All equipment and treatment available in easy access for use			
	A clearly defined process map followed from the arrival of the women in the clinic till end of consultation			
	Manager available on site to support staff			
People skill, and commitment	Clinic staff spending most time attending to patients and actively working			
	Clinic staff following guidelines when doing procedures			
	Checklist classifying first and follow up visits used			
	Ask, look, listen & feel criteria followed during Consultation			
	Rapid screening tests used for routine screening			
	Full physical including vaginal examination done on first visit			
	Pap smear done according to protocol			
	Plan of management drawn in consultation with the women			
	Follow up visits scheduled base on the pregnant women's convenience			

Section C: Narrative observation data

Who	Doing what	Where	How	Staff Body language	Pregnant women non-verbal response

Appendix 12: Data Collection Tool for Record Review

CHECKLIST FOR RECORD REVIEW

SECTION A: Type of record

Instructions: Indicate findings with a tick (✓) in an appropriate column

	YES	No
White maternity case record used		
ANC card Kept at the PHC facility		
Given to pregnant women as pregnant woman held record		

SECTION B: Compliance with the BANC Principles of good care and guidelines

Instructions: Indicate findings with a tick (✓) in an appropriate column

	INFORMATION	YES	NO
The following information recorded on ANC card	• LNMP		
	• EDD		
	• ANC plan		
	• Delivery plan		
	• Transport arrangement		
	• Future contraception		
	• Lifestyle counselling		
	• Infant feeding choice		
	• Problem list highlighted in red		
	• ANC graph plotted		
	• Referral, admission and notes for other consultation, tests and procedures recorded under clinical notes		
	• Full name and qualification of midwife assessing the pregnant women		
	• Full name and signature of midwife counterchecking the card		
First visit consultation	• All tests and procedures due in the first visit done		
	• ANC plan in line with all clinical findings		
	• ANC plan implemented		
	• Advice given to the pregnant women in line with clinical findings and ANC plan		
	• Schedule of next visit according to BANC guidelines		
	• Assessment done whether the woman is eligible for the BANC approach		

	INFORMATION	YES	NO
Follow up visit	• All repeat tests done in due time		
	• Follow up done on previous abnormal findings		
	• Delivery plan adjusted as required		
Assessment done for the following conditions	• Pre-eclampsia		
	• Anaemia and malnutrition		
	• Foetal growth and post maturity		
	• HIV infection		
	• Congenital abnormality		
	• Foetal movements		
	• Pre-eclampsia		

SECTION C : Consultation Process

Instructions: Write in each block Y for yes and N for no

NB: Shaded areas indicate not applicable

Procedure	Done	REPEATED IN DUE TIME	Date recorded	Results recorded	Action on abnormal findings recorded
Full history					
Routine investigations					
Other investigations					
Informed consent to RVD					
HIV screening					
TB screening					
Full physical examination					
Pap smear					
Vaginal examination					
Ultrasound					
Calcium supplements					

Appendix 13a: Interview Guide for the Pregnant Women (English)

Name:

Physical Address:

Contact Number:

Alternative Contact number:

Enter code

Enter code

Health authority:

PHC facility:

Participant Number:

NB: This information is private and confidential: Remove page immediately and keep in a private safe place, will only be used by the researcher if need arise

Interview Guide for Pregnant Women

Enter code

Enter code

Health authority:

PHC facility:

Participant Number:

Date of interview: -----

Grand Tour Question:

Describe in your own words your experiences at the clinic as you are attending ANC

Guided Tour questions

1. Describe your experiences when you came to the clinic for the first time for ANC
2. What is your opinion about the schedule for your subsequent visits?
3. In your opinion to what extent are your individual needs met by your clinic
4. Discuss your involvement in your care as you are pregnant
5. What is your opinion regarding the care that you are getting?

NB: Only Applicable to women who have attended ANC before and not applicable to those who are attending ANC or pregnant for the first time

- 6 Based on your experience; state what has been done differently from your last pregnancy.
7. What is your opinion regarding the change that you have noticed?

Appendix 13b: Interview Guide for the Pregnant Women (IsiZulu)

Uhlelo lokuqondisa umhlangano nabesifazane abakhulelwe

Imininingwane yongenela ucwaningo

Igama:

Ikheli:

Inombolo yocingo:

Enye inombolo yocingo:

Faka ikhodi

Faka ikhodi

Isigceme sezempilo:

Umtholampilo:

Inombolo yongenele ucwaningo:

NB: Lelikhasi liyimfihlo, likhiphe ngokushesha uligcine endaweni ephephile neyimfihlo, liyosetshenziswa umcwaningi kuphela uma kuvela isidingo.

Uhlelo lokuqondisa umhlangano nabesifazane abakhulelwe

	Faka ikhodi	Faka
ikhodi		
Isigceme sezempilo:	<input type="text"/>	Umtholampilo : <input type="text"/>
Inombolo yongenele ucwaningo:	<input type="text"/>	
Usuku lomhlangano: -----		

Umbuzo omkhulu womhlangano:

- Chaza ngamazwi akho loko ohlangabezane nakho kulesikhathi uhamba umtholampilo wokukhulelwa.

Imibuzo yokusekela umhlangano

1. Chaza loko ohlangabezane nako ngenkathi ufika okokuqala emtholampilo wokukhulelwa.
2. Uyini umbono wakho ngokuhlelwa kwezikhathi ezilandelayo zokuza kwakho emtholampilo?
3. Ngokombono wakho ngabe lithini izinga okunakekelwa ngalo izidingo zakho emtholampilo wakho?
4. Ake uxoxe ngokungenelela kwakho ekuzinakeleleni njengoba ukhulelwe
5. Uthini umbono wakho ngokunakekelwa okutholayo emtholampilo wakho?

NB: Lemibuzo elandelayo iqondene kuphela nalabo abesifazane asebakhe bahamba umtholampilo wabakhulelwe ngaphambili; ayiqondene nalabo abangakaze bahambe umtholampilo wabakhulelwe kanye nalabo abaqalayo ukuza emtholampilo noma abaqalayo ukukhulelwa.

6. Ukusukela kulokho osekwe wahlangabezana nacho ake usho ukuthi kuyini lokhu osekwenziwa ngendlela ehlukile kunalokho okwakwenzeka ngenkathi ukhulelwe ngaphambili
7. Uthini umbono wakho ngalolushintsho olubonayo?

Appendix 14a: Structured observation data analysis report per PHC clinic

People involved in the implementation of the BANC approach

Pregnant women at the PHC clinics

Facility = PS1	N	Min	Max	Sum	PS2	N	Min	Max	Sum
Pregnant woman in the clinic	5	196	327	1374		5	197	307	1245
ANC pregnant women first time	5	0	18	37		5	1	12	28
ANC pregnant women repeat visit	5	0	43	70		5	0	39	52
Operational manager	5	1	1	5		5	1	1	5
Operating hours	5	24	24	120		5	24	24	120

Facility = MS1	N	Min	Max	Sum	MS2	N	Min	Max	Sum
Pregnant woman in the clinic	5	178	293	1278		5	73	210	622
ANC pregnant women first time	5	0	24	34		5	4	20	53
ANC pregnant women repeat visit	5	0	124	124		5	0	150	150
Operational manager	5	1	1	5		5	1	1	5
Operating hours	5	8	8	40		5	8	8	40

Facility = PN1	N	Min	Max	Sum	PN2	N	Min	Max	Sum
Pregnant woman in the clinic	5	368	501	2114		5	260	360	1528
ANC pregnant women first time	5	3	13	46		5	4	11	40
ANC pregnant women repeat visit	5	9	32	107		5	9	30	98
Operational manager	5	1	1	5		5	1	1	5
Operating hours	5	24	24	120		5	8	8	40

Facility = MW1	N	Min	Max	Sum	MW 2	N	Min	Max	Sum
Pregnant woman in the clinic	5	103	360	1184		5	89	180	577
ANC pregnant women first time	5	8	26	82		5	1	8	24
ANC pregnant women repeat visit	5	15	80	267		5	0	30	30
Operational manager	5	1	1	5		5	1	1	5
Operating hours	5	8	8	40		5	8	8	40

Staff in the PHC clinics

Facility = PS1	N	Min	Max	Sum	PS2	N	Min	Max	Sum
ADM	5	2	2	10		5	1	1	5
Midwives	5	8	9	43		5	7	9	43
PN	5	2	2	10		5	2	2	10
EN	5	6	6	30		5	5	6	28
ENA	5	5	5	25		5	5	5	25
Counsellors	5	1	3	11		5	3	3	15
Clerks	5	2	2	10		5	2	2	10

Facility = MS1	N	Min	Max	Sum	MS2	N	Min	Max	Sum
ADM	5	0	0	0		5	1	1	5
Midwives	5	7	7	35		5	6	6	30
PN	5	0	0	0		5	0	0	0
ENA	5	1	1	5		5	2	2	10
Counsellors	5	5	5	25		5	2	2	10
Clerks	5	0	1	3		5	1	1	5

Facility = MN1	N	Min	Max	Sum	MN2	N	Min	Max	Sum
ADM	5	0	8	12		5	0	1	2
Midwives	5	6	8	38		5	11	14	61
PN	5	0	0	0		5	0	0	0
EN	5	1	2	8		5	2	2	10
ENA	5	2	2	10		5	1	2	9
Counsellors	5	1	1	5		5	2	2	10
Clerks	5	2	2	10		5	3	4	19

Facility = PW1	N	Min	Max	Sum	PW2	N	Min	Max	Sum
ADM	5	0	0	0		5	0	0	0
Midwives	5	9	9	45		5	17	17	85
PN	5	1	1	5		5	1	1	5
EN	5	4	4	20		5	10	10	50
ENA	5	2	2	10		5	4	4	20
Counsellors	5	2	2	10		5	2	2	10
Clerks	5	1	1	5		5	2	2	10

Facility = MW1	N	Min	Max	Sum	MW2	N	Min	Max	Sum
ADM	5	1	1	5		5	0	0	0
Midwives	5	12	12	60		5	4	4	20
PN	5	3	3	15		5	0	0	0
EN	5	2	2	10		5	2	2	10
ENAs	5	2	2	10		5	1	1	5
Counsellors	5	2	2	10		5	3	3	15
Clerks	5	3	3	15		5	1	1	5

Staff involved in ANC

Facility = PS1	N	Min	Max	Sum	PS2	N	Min	Max	Sum
ADM	5	1	2	8		5	5	1	1
Midwives	5	1	3	10		5	5	0	1
ENs	5	0	1	3		5	5	0	1
ENAs	5	1	1	5		5	5	1	1
Counsellors	5	1	3	11		5	5	1	2
Clerks	5	2	2	10		5	5	1	1

Facility = PN1	N	Min	Max	Sum	PN2	N	Min	Max	Sum
ADM	5	5	2	2		5	5	1	1
Midwives	5	5	3	3		5	5	4	4
ENs	5	5	2	2		5	5	2	2
ENAs	5	5	2	2		5	5	1	1
Counsellors	5	5	1	1		5	5	1	1
Clerks	5	5	1	1		5	5	1	1

Facility = MN1	N	Min	Max	Sum	MN2	N	Min	Max	Sum
Midwives	5	5	0	2		5	5	2	3
ENs	5	5	0	2		5	5	1	2
ENAs	5	5	0	1		5	5	1	2
Counsellors	5	5	1	1		5	5	2	2
Clerks	5	5	2	2		5	5	4	4

Facility = MS1	N	Min	Max	Sum	MS2	N	Min	Max	Sum
Midwives	5	1	6	10		5	5	1	6
ENs	5	1	2	8		5	5	0	0
ENAs	5	1	1	5		5	5	0	1
Counsellors	5	1	6	10		5	5	2	2
Clerks	5	1	1	5		5	5	1	1

Facility = PW1	N	Min	Max	Sum	PW2	N	Min	Max	Sum
ADM	5	5	0	0		5	5	1	1
Midwives	5	5	2	2		5	5	2	2
ENs	5	5	0	0		5	5	1	1
ENAs	5	5	2	2		5	5	0	0
Counsellors	5	5	2	2		5	5	2	2
Clerks	5	5	1	1		5	5	1	1

Facility = MW1	N	Min	Max	Sum	MW2	N	Min	Max	Sum
Midwives	5	1	5	1		5	5	1	1
ENs	5	1	5	0		5	5	1	1
ENAs	5	1	5	1		5	5	1	1
Counsellors	5	2	5	1		5	5	3	3
Clerks	5	1	5	1		5	5	1	1

Managers in PHC clinics

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes	1	1	1	1	1	1	1	1	1	1	1	1
Total	1	1	1	1	1	1	1	1	1	1	1	1

Daily availability of manager to support staff

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	4	3	4	1	5	5	3	0	5	5	5	5
Sometimes	1	2	0	4	0	0	2	0	0	0	0	0
Not observed	0	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Planning for implementation of the banc approach

Operating days and times

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Open Mon day to Friday	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Open weekends	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No
Public holidays	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No
Operating hours	24hrs	8hrs	8hrs	8hrs	8hrs	24hrs	8hrs	8hrs	24hrs	8hrs	8hrs	8hrs

ANC services provided daily

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	5	5	4	5	5	5	5	5	5	5	5	5
No	0	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

All pregnant who present at the clinic for ANC services accepted

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	5	0	2	1	2	5	1	5	5	3	0	1
Yes sometimes	0	5	0	0	2	0	4	0	0	0	1	1
No	0	0	2	4	1	0	0	0	0	2	1	3
Not observed	0	0	1	0	0	0	0	0	0	0	3	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

All equipment and treatment available in easy access for use

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	5	5	4	0	5	0	5	5	5	5	5	5
Yes sometimes	5	5	0	2	0	0	0	0	5	5	0	0
No	5	5	0	3	0	0	0	0	5	5	0	0
Not observed	5	5	1	0	0	5	0	0	5	5	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Maternity case records given to pregnant women to take home

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	5	5	4	5	5	5	5	5	5	5	5	5
Not observed	5	5	1	5	5	5	5	5	5	5	5	5
Total	5	5	5	5	5	5	5	5	5	5	5	5

A clearly defined process map followed from the arrival of the women in the clinic till end of consultation

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	2	5	0	1	5	0	1	5	0	0	0	0
No	3	0	4	4	0	5	4	0	5	5	5	5
Not observed	0	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Processes followed during the implementation of the banc approach

Evidence of implementing the BANC approach

All women who are diagnosed with pregnancy are offered choice to keep or terminate the pregnancy

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
No	1	2	0	1	0	2	5	2	5	1	1	2
Not observed	4	3	5	4	5	3	0	3	0	4	4	3
Total	5	5	5	5	5	5	5	5	5	5	5	5

First ANC provided on the day pregnancy is diagnosed or the very first time the women presents at the clinic

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	0	0	0	0	0	1	0	0	0	0	1	0
Yes sometimes	0	0	0	2	0	0	0	0	0	0	1	0
No	4	2	0	0	2	1	2	0	5	1	0	3
Not observed	1	3	5	3	3	3	3	5	0	4	3	2
Total	5	5	5	5	5	5	5	5	5	5	5	5

First visit consultation provided before transfer of all pregnant women who for some reason need to attend ANC in another clinic

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	0	0	0	1	0	3	0	0	5	2	2	0
Not observed	5	5	5	4	5	2	5	5	0	3	3	5
Total	5	5	5	5	5	5	5	5	5	5	5	5

Principles of good Care & Guidelines used as reference to provide ANC

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
No	5	5	4	5	5	5	5	5	5	5	5	5
Not observed	0	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Clinic specific protocols on management of pregnant women used

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	0	0	0	0	0	0	0	0	0	5	0	0
No	5	5	4	5	5	5	5	5	5	0	5	5
Not observed	0	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Checklist for first and follow up visits used

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	0	0	0	0	0	0	4	0	0	0	2	0
Yes sometimes	0	0	0	5	0	0	2	0	0	0	3	0
No	5	5	4	0	5	5	0	5	5	5	0	5
Not observed	0	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

ANC consultation process according to the BANC approach

Rapid appraisal done by midwives in the waiting area

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
No	5	5	4	5	5	5	5	5	5	5	5	5
Not observed	0	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Emergency pregnant women given priority

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	0	1	1	0	0	0	1	0	0	2	2	0
Not observed	5	4	4	5	5	5	4	5	5	3	3	5
Total	5	5	5	5	5	5	5	5	5	5	5	5

Ask, look, listen & feel criteria followed during Consultation

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes sometimes	0	0	0	5	0	0	5	0	0	0	0	0
No	5	5	4	0	5	5	0	5	5	5	5	5
Not observed	0	0	1	0	0	2	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Full physical including vaginal examination done on first visit

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	4	3	3	4	5	2	4	5	5	3	4	1
Yes sometimes	0	0	1	1	0	3	1	0	0	2	1	2
No	0	2	0	0	0	0	0	0	0	0	0	2
Not observed	1	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Pap smear done according to protocol

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	2	1	2	1	1	1	3	5	5	3	3	0
Yes sometimes	0	3	1	1	2	2	2	0	0	0	0	3
No	1	1	1	3	2	2	0	0	0	2	2	2
Not observed	2	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Rapid screening tests used for routine screening

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	5	5	0	0	5	0	5	0	0	5	0	0
Yes sometimes	0	0	4	5	0	0	0	0	0	0	5	0
No	0	0	0	0	0	5	0	5	5	0	0	5
Not observed	0	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Performance of staff involved in implementing the BANC approach

Clinic staff following guidelines when doing procedures

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	1	0	1	0	0	0	0	0	0	0	0	0
Yes sometimes	0	1	3	5	5	5	5	0	5	5	5	5
No	4	3	0	0	0	0	0	5	0	0	0	0
Not observed	0	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Commitment of clinic staff to the BANC approach

Clinic staff spending most time attending to pregnant women and actively working

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	4	5	1	5	5	5	3	2	0	0	4	5
Yes sometimes	1	0	3	0	0	0	2	3	5	5	1	0
Not observed	0	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Communication in the PHC clinics implementing the BANC approach

Clear directions and instructions given to pregnant women about clinic procedures

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	5	3	0	0	5	5	2	5	0	5	0	0
Yes sometimes	0	2	4	5	0	0	3	0	0	0	5	3
No	0	0	0	0	0	0	0	0	5	0	0	2
Not observed	0	0	2	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Pregnant women informed about examination findings

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	0	0	0	4	0	0	2	3	0	0	0	0
Yes sometimes	4	1	4	1	5	5	3	2	5	5	5	5
No	1	4	0	0	0	0	0	0	0	0	0	0
Not observed	0	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Communication with referral institution possible

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	0	0	0	1	0	0	0	2	0	0	2	0
Not observed	5	5	5	4	5	5	5	3	5	5	3	5
Total	5	5	5	5	5	5	5	5	5	5	5	5

EMRS respond to emergency calls within two hours

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	0	0	0	1	0	0	0	1	0	0	0	0
No	0	0	0	0	0	0	0	1	0	0	2	0
Not observed	5	5	5	4	5	5	5	3	5	5	3	5
Total	5	5	5	5	5	5	5	5	5	5	5	5

Plan of management drawn in consultation with the women

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	1	1	0	0	0	0	0	0	0	0	1	0
Yes sometimes	1	2	0	0	0	0	1	2	0	0	1	0
No	3	3	4	5	5	5	4	3	5	5	3	5
Not observed	0	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Culture in the PHC clinics implementing the BANC approach

Clinic staff assisting each other when need arises

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	5	0	0	0	0	1	0	0	0	0	0	0
Yes sometimes	0	0	0	0	0	0	0	0	0	2	0	0
No	0	0	0	2	0	0	0	0	0	0	0	2
Not observed	0	5	5	3	5	4	5	5	5	3	5	3
Total	5	5	5	5	5	5	5	5	5	5	5	5

Professionalism and courteousness between staff

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	5	5	4	5	5	5	3	5	5	5	5	5
Yes sometimes	0	0	0	0	0	0	2	0	0	0	0	0
Not observed	0	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Clinic staffs courteous, professional and approachable to the pregnant women

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	5	5	2	2	5	5	5	5	5	5	3	5
Yes sometimes	0	0	2	3	0	0	0	0	0	0	2	0
Not observed	0	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Follow up visits scheduled base on the pregnant women's convenience

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
No	5	5	4	4	5	5	5	5	5	5	5	5
Not observed	0	0	1	1	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Privacy maintained during consultation and examination

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Yes always	0	5	4	5	5	5	2	5	5	3	0	2
Yes sometimes	1	0	0	0	0	0	3	0	0	0	2	1
No	4	0	0	0	0	0	0	0	0	2	3	2
Not observed	0	0	1	0	0	0	0	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Appendix 14b: Structured observations data analysis report whole sample

People involved in implementation of the BANC approach

Pregnant woman load	N	Minimum	Maximum	Sum
Total number of clients in the clinic	60	577	2114	15244 (100%)
Total clients for other health services	60	419	1961	13461(88.5%)
Total number of pregnant woman in the clinic	60	54	349	1783 (11,7)
Total ANC pregnant women first time	60	24	82	1285 (8.4%)
Total ANC pregnant women repeat visit	60	30	267	498 (3.3%)

Staff in the clinics	ADMs	Midwives	PNs	ENs	ENAs	Counsellors	Clerks
N	60	60	60	60	60	60	60
Minimum per day	0	4	0	1	1	1	0
Maximum per day	8	17	5	10	9	5	4
Sum in 60 days	69	570	90	256	199	161	102

Staff involved in ANC	ADMs	Midwives	ENs	ENAs	Counsellors	Clerks
N	60	60	60	60	60	60
Minimum per day	0	0	0	0	1	1
Maximum per day	2	7	2	2	5	4
Sum in 60 days	40(58%)	111(20%)	47(18%)	60(30%)	103(64%)	84(82%)

	Yes always	Yes sometimes	No	Total
Manager available to support staff	45 (76.2%)	9 (15.3%)	5 (8.5%)	59 (100%)

Planning for implementation of the BANC approach

Operating days and times

	Open 24hours/day	Open 7days /week	Open week end and p/h
Number of clinics Yes	3 (25%)	3 (25%)	3 (25%)
Number of clinics No	9 (75%)	9 (75%)	9 (75%)
Total number of clinics	12(100%)	12(100%)	12(100%)

	ANC services provided daily	All pregnant women accepted	All equipment and treatment available in easy access for use	Maternity case records given to pregnant women to take home	A clearly defined process map followed from the arrival of the women in the clinic till end of consultation
Yes always	59 (98.3)	30 (51%)	49 (83%)	59 (100%)	19 (32%)
Yes sometimes	0 (0%)	8 (14%)	2 (3%)	0 (0%)	0 (0%)
No	1 (1.7%)	18(36%)	8 (14%)	0 (0%)	40 (68%)
Number observed	60 (100%)	56 (100%)	59 (100%)	59 (100%)	59 (100%)

Processes involved during implementation of the BANC approach

Evidence of using BANC

	Yes always	Yes sometimes	No	Total
All women who are diagnosed with pregnancy are offered choice to keep or terminate the pregnancy	0 (0%)	0 (0%)	22(100%)	22 (100%)
First ANC provided on the day pregnancy is diagnosed or the very first time the women presents at the clinic	2 (7%)	4 (14%)	22 (79%)	28 (100%)
First visit consultation provided before transfer of all pregnant women who for some reason need to attend ANC in another clinic	13(100%)	0 (0%)	0 (0%)	13 (100%)
Principles of good Care & Guidelines used as reference to provide ANC	0 (0%)	0 (0%)	59(100%)	59 (100%)
Clinic specific protocols on management of pregnant women used	5 (8.5%)	0 (0%)	54 (91.5%)	59 (100%)
Checklist for first and follow up visits used	6 (10%)	9 (15%)	44 (75%)	59 (100%)

ANC consultation process

	Yes always	Yes sometimes	No	Number observed
Rapid appraisal done by the midwives at the reception area	0 (0%)	0 (0%)	59(100%)	59 (100%)
Emergency women given priority	7(100%)	0 (0%)	0 (0%)	7 (100%)
Ask ,look listen and feel criteria followed during consultation	0 (0%)	10 (17%)	49 (83%)	59 (100%)
Physical examination including vaginal exam done during first visit	43 (74%)	11 (19%)	4 (7%)	58 (100%)
Pap smear done according to protocol	27 (47%)	14 (25%)	16 (28%)	57 (100%)
Rapid screening test used to do routine tests	25 (42%)	14 (24%)	20 (34%)	59 (100%)

Performance of staff involved in implementing the BANC approach

	Yes always	Yes sometimes	No	Number observed
Clinic staff following guidelines when doing procedures	2 (3.4%)	45 (76.3%)	12 (20.3%)	59(100%)

Commitment of clinic staff to the BANC approach

	Yes always	Yes sometimes	No	Number observed
Clinic staff spending most time attending to pregnant women and actively working	39 (66%)	20 (34%)	0 (0%)	59(100%)
Follow up of women who did not attend on appointment date done	0 (0%)	0 (0%)	59(100%)	59(100%)

Communication in the PHC clinics implementing the BANC approach

	Yes always	Yes sometimes	No	Number observed
Clear directions and instructions given to pregnant women about clinic procedures	30 (51%)	22 (37%)	7 (12%)	59 (100%)
Pregnant women informed about examination findings	9 (15%)	45 (76%)	5 (9%)	59 (100%)
Communication with referral institution possible	5 (100%)	0 (0%)	0 (0%)	5 (100%)
EMRS respond to emergency calls within two hours	2(40%)	0 (0%)	3 (60%)	5 (100%)
Plan of management drawn in consultation with the women	2 (3%)	7 (12%)	50 (85%)	59 (100%)

Culture in the PHC clinics implementing the BANC approach

	Yes always	Yes sometimes	No	Number observed
Clinic staff assisting each other when need arises	6 (50%)	2 (17%)	4 (33%)	12 (100%)
Good human relation amongst staff	57 (97%)	2 (3%)	0 (0%)	59 (100%)
Clinic staff friendly and maintaining good relation with pregnant women	52 (88%)	7 (12%)	0 (0%)	59 (100%)
Follow up visits scheduled base on the pregnant women's convenience	0 (0%)	0 (0%)	58 (100%)	58 (100%)
Privacy maintained during consultation and examination Privacy maintained during consultation and examination	41 (69%)	7 (12%)	11 (19%)	59 (100%)

Appendix 14c: Structured observation data analysis report per health authority

People involved in implementation of the BANC approach

Health authority	Manager available on site to support staff			Total
	Yes always	Yes sometimes	No	
KZNPA	27 (90%)	3 (10%)	0 (0%)	30 (100%)
Municipal	18 (62%)	6 (21%)	5 (17%)	29 (100%)
Total	45 (76%)	9 (15%)	5 (9%)	59 (100%)

Crosstab:

Health authority		Yes always	Yes sometimes	No	Total
KZNPA	Count	27	3	0	30
	Expected Count	22.9	4.6	2.5	30.0
	Std. Residual	.9	-.7	-1.6	
Municipal	Count	18	6	5	29
	Expected Count	22.1	4.4	2.5	29.0
	Std. Residual	-.9	.7	1.6	
Total	Count	45	9	5	59
	Expected Count	45.0	9.0	5.0	59.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	7.785 ^a	2	.020	.017		
Likelihood Ratio	9.746	2	.008	.015		
Fisher's Exact Test	7.595			.012		
Linear-by-Linear Association	7.627 ^b	1	.006	.005	.004	.003
N of Valid Cases	59					

a. 4 cells (66.7%) have expected count less than 5. The minimum expected count is 2.46.

b. The standardized statistic is 2.762.

Planning for implementation of the BANC approach

ANC services daily				All equipment and treatment available in easy access for use			
Health authority	Yes always	No	Total	Yes always	Yes sometimes	No	Total
Provincial	30(100%)	0(0%)	30(100%)	25(83%)	0(0%)	5(17%)	30(100%)
Municipal	29(97%)	1(3%)	30(100%)	24(83%)	3(10%)	2(7%)	29(100%)
Total	59(98%)	1(2%)	60(100%)	49(83%)	2(3%)	8(14%)	59(100%)

ANC services daily Maternity case records given to pregnant women to take home			A clearly defined process map followed from the arrival of the women in the clinic till end of consultation		
Health authority	Yes always	Total	Yes always	No	Total
Provincial	30(100%)	30(100%)	12(40%)	18(60%)	30(100%)
Municipal	29(100%)	29(100%)	7(24%)	22(76%)	29(100%)
Total	59(100%)	59(100%)	19(32%)	40 (68%)	59(100%)

Processes for implementation of the BANC approach

All pregnant who present at the clinic for ANC services accepted					All women who are diagnosed with pregnancy are offered choice to keep or terminate the pregnancy	
	Yes always	Yes sometimes	No	Total	No	Total
Provincial	20(67%)	2(7%)	8(26%)	30(100%)	11(100%)	11 (100%)
Municipal	10(38.5%)	6(23%)	10(38.5%)	26(100%)	11(100%)	11(100%)
Total	30(54%)	8(14%)	18(32%)	56(100%)	22(100%)	22(100%)

First ANC provided on the day pregnancy is diagnosed or the very first time the women presents at the clinic				
	Yes always	Yes sometimes	No	Total
Provincial	1(6%)	0 (0%)	15 (94%)	16 (100%)
Municipal	1 (8%)	4 (33%)	7 (58%)	12 (100%)
Total	2 (7%)	4 (14%)	22 (79%)	28 (100%)

First ANC provided on the day pregnancy is diagnosed or the very first time the women presents at the clinic					
Health authority		Yes always	Yes sometimes	No	Total
Provincial	Count	1	0	15	16
	Expected Count	1.1	2.3	12.6	1.1
	Std. Residual	-.1	-1.5	.7	-.1
Municipal	Count	1	4	7	1
	Expected Count	.9	1.7	9.4	.9
	Std. Residual	.2	1.7	-.8	.2
Total	Count	2	4	22	2
	Expected Count	2.0	4.0	22.0	28.0

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	6.470 ^a	2	.039	.024		
Likelihood Ratio	7.949	2	.019	.024		
Fisher's Exact Test	6.281			.024		
Linear-by-Linear Association	2.680 ^b	1	.102	.120	.099	.074
N of Valid Cases	28					

a. 4 cells (66.7%) have expected count less than 5. The minimum expected count is.86.

b. The standardized statistic is -1.637.

First visit consultation provided before transfer of all pregnant women who for some reason need to attend ANC in another clinic			Principles of good Care & Guidelines used as reference to provide ANC	
	Yes always	Total	No	Total
Provincial	10 (100%)	10(100%)	30(100%)	30(100%)
Municipal	3(100%)	3(100%)	29(100%)	29(100%)
Total	13(100%)	13(100%)	59(100%)	59(100%)

Clinic specific protocols on management of pregnant women used				Checklist for first and follow up visits used			
	Yes always	No	Total	Yes always	Yes sometimes	No	Total
Provincial	5(18%)	25 (86%)	30(100%)	0 (0%)	0 (0%)	30(100%)	30(100%)
Municipal	0(0%)	29(100%)	29(100%)	6(21%)	9 (31%)	14 (48%)	29(100%)
Total	5 (8%)	54 (92%)	59(100%)	6(10%)	9 (15%)	44 (75%)	59 (100%)

Crosstabs

Checklist for first and follow up visits used					
Health authority		Yes always	Yes sometimes	No	Total
Provincial	Count	0	0	30	30
	Expected Count	3.1	4.6	22.4	30.0
	Std. Residual	-1.7	-2.1	1.6	
Municipal	Count	6	9	14	29
	Expected Count	2.9	4.4	21.6	29.0
	Std. Residual	1.8	2.2	-1.6	
Total	Count	6	9	44	59
	Expected Count	6.0	9.0	44.0	59.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	20.807 ^a	2	.000	.000		
Likelihood Ratio	26.731	2	.000	.000		
Fisher's Exact Test	21.703			.000		
Linear-by-Linear Association	17.570 ^b	1	.000	.000	.000	.000
N of Valid Cases	59					

a. 4 cells (66.7%) have expected count less than 5. The minimum expected count is 2.95.
The standardized statistic is -4.192.

ANC consultation process according to BANC approach

Rapid appraisal done by midwives in the waiting area			Ask, look, listen & feel criteria followed during Consultation		
	No	Total	Yes sometimes	No	Total
Provincial	30(100%)	30(100%)	0(0%)	30(100%)	30(100%)
Municipal	29(100%)	29 (100%)	10 (34%)	19(66%)	29(100%)
Total	59(100%)	59 (100%)	10 (17%)	49 (83%)	59(100%)

Crosstab

Ask, look, listen & feel criteria followed during Consultation				
Health authority		Yes sometimes	No	Total
Provincial	Count	0	30	30
	Expected Count	5.1	24.9	30.0
	Std. Residual	-2.3	1.0	
Municipal	Count	10	19	29
	Expected Count	4.9	24.1	29.0
	Std. Residual	2.3	-1.0	
Total	Count	10	49	59
	Expected Count	10.0	49.0	59.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	12.456 ^a	1	.000	.000	.000	
Continuity Correction ^b	10.127	1	.001			
Likelihood Ratio	16.337	1	.000	.000	.000	
Fisher's Exact Test				.000	.000	
Linear-by-Linear Association	12.245 ^c	1	.000	.000	.000	.000
N of Valid Cases	59					

a. 1 cells (25.0%) have expected count less than 5.

The minimum expected count is 4.92.

b. Computed only for a 2x2 table

c. The standardized statistic is -3.499.

Full physical including vaginal examination done on first visit

	Yes always	Yes sometimes	No	Total
Provincial	22(76%)	5(17%)	2(7%)	29(100%)
Municipal	21 (72%)	6 (21%)	2(7%)	29(100%)
Total	43(74%)	11 (19%)	4 (7%)	58(100%)

Pap smear done according to protocol

	Yes always	Yes sometimes	No	Total
Provincial	13 (46%)	7(25%)	8 (29%)	28(100%)
Municipal	14 (48%)	7 (24%)	8 (28%)	29(100%)
Total	27(47%)	14 (25%)	16 (28%)	57(100%)

Rapid screening tests used for routine screening					
Health authority		Yes always	Yes sometimes	No	Total
Provincial	Count	20	0	10	30
	Expected Count	12.7	7.1	10.2	30.0
	Std. Residual	2.0	-2.7	.0	
Municipal	Count	5	14	10	29
	Expected Count	12.3	6.9	9.8	29.0
	Std. Residual	-2.1	2.7	.1	
Total	Count	25	14	20	59
	Expected Count	25.0	14.0	20.0	59.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	22.990 ^a	2	.000	.000		
Likelihood Ratio	29.028	2	.000	.000		
Fisher's Exact Test	25.544			.000		
Linear-by-Linear Association	4.907 ^b	1	.027	.036	.019	.010
N of Valid Cases	59					

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.88.

b. The standardized statistic is 2.215.

Performance of staff involved in implementation of the BANC approach

Clinic staff following guidelines when doing procedures				
	Yes always	Yes sometimes	No	Total
Provincial	1(3.3%)	22(73.3%)	7(23.3%)	30(100%)
Municipal	1 (4%)	23 (79%)	5 (17%)	29(100%)
Total	2(3.4%)	45(76.3%)	12 (20.3%)	59(100%)

Commitment of staff implementing the BANC approach

Clinic staff spending most time attending to patients and actively working				Follow up of women who did not attend on appointment date done	
	Yes always	Yes sometimes	Total	No	Total
Provincial	19 (63%)	11 (37%)	30(100%)	30(100%)	30(100%)
Municipal	20 (69%)	9 (31%)	29(100%)	29(100%)	29(100%)
Total	39 (66%)	20 (34%)	59(100%)	59(100%)	59(100%)

Communication in the PHC clinics implementing the BANC approach

Clear directions and instructions given to pregnant women about clinic procedures				
	Yes always	Yes sometimes	No	Total
Provincial	23 (76%)	2 (7%)	5 (17%)	30(100%)
Municipal	7(24%)	20 (69%)	2 (7%)	29(100%)
Total	30(51%)	22 (37%)	7 (12%)	59(100%)

Crosstab

Clear directions and instructions given to pregnant women about clinic procedures					
Health authority		Yes always	Yes sometimes	No	Total
Provincial	Count	23	2	5	30
	Expected Count	15.3	11.2	3.6	30.0
	Std. Residual	2.0	-2.7	.8	
Municipal	Count	7	20	2	29
	Expected Count	14.7	10.8	3.4	29.0
	Std. Residual	-2.0	2.8	-.8	
Total	Count	30	22	7	59
	Expected Count	30.0	22.0	7.0	59.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	24.536 ^a	2	.000	.000		
Likelihood Ratio	27.398	2	.000	.000		
Fisher's Exact Test	25.947			.000		
Linear-by-Linear Association	5.578 ^b	1	.018	.023	.014	.009
N of Valid Cases	59					

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 3.44.

b. The standardized statistic is 2.362.

Pregnant women informed about examination findings					Communication with referral institution possible		
	Yes always	Yes sometimes	No	Total		Yes always	Total
Provincial	0 (0%)	25 (83%)	5 (17%)	30(100%)		0 (0%)	0 (0%)
Municipal	9 (31%)	20(69%)	0 (0%)	29(100%)		5(100%)	5(100%)
Total	9 (15%)	45 (76%)	5(9%)	59(100%)		5(100%)	5(100%)

Crosstab

Pregnant women informed about examination findings					
Health authority		Yes always	Yes sometimes	No	Total
Provincial	Count	0	25	5	30
	Expected Count	4.6	22.9	2.5	30.0
	Std. Residual	-2.1	.4	1.5	
Municipal	Count	9	20	0	29
	Expected Count	4.4	22.1	2.5	29.0
	Std. Residual	2.2	-.5	-1.6	
Total	Count	9	45	5	59
	Expected Count	9.0	45.0	5.0	59.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	14.543 ^a	2	.001	.000		
Likelihood Ratio	19.948	2	.000	.000		
Fisher's Exact Test	15.229			.000		
Linear-by-Linear Association	14.175 ^b	1	.000	.000	.000	.000
N of Valid Cases	59					

a. 4 cells (66.7%) have expected count less than 5. The minimum expected count is 2.46.

The standardized statistic is -3.765.

EMRS respond to emergency calls within two hours				Plan of management drawn in consultation with the women				
	Yes always	No	Total		Yes always	Yes sometimes	No	Total
Provincial	0 (0%)	0(0%)	0 (0%)		1(3%)	3(10%)	26(87%)	30(100%)
Municipal	2(40%)	3(60%)	5(100%)		1(3%)	4(14%)	24(83%)	29(100%)
Total	2(40%)	3(60%)	5(100%)		2(3%)	7(12%)	50(85%)	59(100%)

Culture in the PHC clinics implementing the BANC approach

Clinic staff assisting each other when need arises						Professionalism and courteousness between staff		
	Yes always	Yes sometimes	No	Total		Yes sometimes	No	Total
Provincial	6(75%)	2(25%)	0 (0%)	8(100%)		30(100%)	0 (0%)	30(100%)
Municipal	0 (0%)	0(0%)	4(100%)	4(100%)		27(93%)	2(7%)	29(100%)
Total	6(50%)	2(17%)	4(33%)	12(100%)		57(97%)	2(3%)	59(100%)

Crosstab

Clinic staff assisting each other when need arises					
Health authority		Yes always	Yes sometimes	No	Total
Provincial	Count	6	2	0	8
	Expected Count	4.0	1.3	2.7	8.0
	Std. Residual	1.0	.6	-1.6	

Municipal	Count	0	0	4	4
	Expected Count	2.0	.7	1.3	4.0
	Std. Residual	-1.4	-.8	2.3	
Total	Count	6	2	4	12
	Expected Count	6.0	2.0	4.0	12.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	12.000 ^a	2	.002	.002		
Likelihood Ratio	15.276	2	.000	.002		
Fisher's Exact Test	10.355			.002		
Linear-by-Linear Association	9.293 ^b	1	.002	.002	.002	.002
N of Valid Cases	12					

6 cells (100.0%) have expected count less than 5. The minimum expected count is .67.

Clinic staffs courteous, professional and approachable to the pregnant women				Privacy maintained during consultation and examination			
	Yes always	Yes sometimes	Total	Yes always	Yes sometimes	No	Total
Provincial	30(100%)	0 (0%)	30(100%)	23(96%)	1(4%)	0 (0%)	24(100%)
Municipal	22(76%)	7(24%)	29(100%)	18(72%)	6(24%)	1(4%)	25(100%)
Total	52(88%)	7(12%)	59(100%)	41(84%)	7(14%)	1(2%)	49(100%)

Crosstab

Clinic staffs courteous, professional and approachable to the pregnant women				
Health authority		Yes always	Yes sometimes	Total
Provincial	Count	30	0	30
	Expected Count	26.4	3.6	30.0
	Std. Residual	.7	-1.9	
Municipal	Count	22	7	29
	Expected Count	25.6	3.4	29.0
	Std. Residual	-.7	1.9	
Total	Count	52	7	59
	Expected Count	52.0	7.0	59.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	8.216 ^a	1	.004	.005	.005	
Continuity Correction ^b	6.070	1	.014			
Likelihood Ratio	10.923	1	.001	.005	.005	
Fisher's Exact Test				.005	.005	
Linear-by-Linear Association	8.077 ^c	1	.004	.005	.005	.005
N of Valid Cases	59					

a. 2 cells (50.0%) have expected count less than 5.

The minimum expected count is 3.44.

b. Computed only for a 2x2 table

c. The standardized statistic is 2.842.

Appendix 15a: Observation Narrative Data Analysis Report Per PHC Clinic

How Activities were performed

Reception: Registration	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Accepted without reservation	5	5	1	1	2	1	4	5	5	5	5	5
Accepted with reservations	0	0	3	3	3	4	0	0	0	0	0	0
Not Accepted	0	0	0	1	0	0	0	0	0	0	0	0
Not observed	0	0	1	0	0	0	1	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Reception: Enquiry	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Well attended	1	2	0	2	0	3	0	0	3	0	5	1
Poorly attended	0	0	2	0	0	0	1	0	0	0	0	1
Not Attended	0	0	1	0	0	0	0	0	0	0	0	0
Not observed	4	3	2	3	5	2	4	5	2	5	0	3
Total	5	5	5	5	5	5	5	5	5	5	5	5

Observation room

Urine test	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Done correctly	5	5	4	0	5	5	4	5	5	5	0	5
Done incorrectly	0	0	0	5	0	0	0	0	0	0	5	0
Not observed	0	0	1	0	0	0	1	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

BP check	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Done correctly	5	5	0	5	5	5	4	5	5	5	5	5
Done incorrectly	0	0	4	0	0	0	0	0	0	0	0	0
Not observed	0	0	1	0	0	0	1	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Blood room

Taking Blood	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Done correctly	5	5	2	5	5	5	4	5	5	5	5	5
Done incorrectly	0	0	3	0	0	0	0	0	0	0	0	0
Not observed	0	0	1	0	0	0	1	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Rapid tests	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Done correctly	5	5	4	5	5	5	4	5	5	5	5	5
Not observed	0	0	1	0	0	0	1	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Injection room

Giving injections	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Done correctly	5	5	4	5	5	5	4	5	5	5	5	5
Not observed	0	0	1	0	0	0	1	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Consultation room

First visit consultation	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Done correctly	3	0	1	0	5	5	0	0	2	4	2	0
Done incorrectly	1	5	3	5	0	0	4	5	3	0	3	5
Not observed	1	0	1	0	0	0	1	0	0	1	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Repeat visit consultation	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Done correctly	3	4	0	0	0	0	0	0	2	0	2	0
Done incorrectly	1	0	1	1	5	5	1	5	3	5	3	1
Not observed	1	1	4	4	0	0	4	0	0	0	0	4
Total	5	5	5	5	5	5	5	5	5	5	5	5

Maintenance of privacy

Reception	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Complete	5	0	0	0	0	0	0	0	5	0	0	0
Partial	0	0	0	0	0	0	0	5	0	0	0	0
None	0	5	4	5	5	5	4	0	0	5	5	5
Not observed	0	0	1	0	0	0	1	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Observation room	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Complete	5	0	0	0	5	5	4	5	5	0	0	0
Partial	0	0	0	0	0	0	0	0	0	0	0	5
None	0	5	4	5	0	0	0	0	0	5	5	0
Not observed	0	0	1	0	0	0	1	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Blood room	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Complete	5	5	0	5	5	5	4	5	5	2	0	0
Partial	0	0	0	0	0	0	0	0	0	3	0	0
None	0	0	4	0	0	0	0	0	0	0	5	5
Not observed	0	0	1	0	0	0	1	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Injection room	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Complete	5	5	0	5	5	5	4	5	5	5	0	0
None	0	0	4	0	0	0	0	0	0	0	5	5
Not observed	0	0	1	0	0	0	1	0	0	0	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Consultation room	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2
Complete	4	0	4	5	5	5	3	3	5	4	0	2
Partial	0	3	0	0	0	0	1	2	0	0	4	1
None	0	2	0	0	0	0	0	0	0	0	1	2
Not observed	1	0	1	0	0	0	1	0	0	1	0	0
Total	5	5	5	5	5	5	5	5	5	5	5	5

Appendix 15b: Narrative observation data analysis report whole sample

How activities were performed at various work stations

Reception area

	Registration			Enquiry			
	Frequency	Percent	Valid Percent		Frequency	Percent	Valid Percent
Accepted without any reservations	44	73.3	75.9	Well attended	17	28.3	77.3
Accepted with some reservations	13	21.7	22.4	Poorly attended	4	6.7	18.2
Not accepted	1	1.7	1.7	Not attended	1	1.7	4.5
Total observed	58	96.7	100.0	Total observed	22	36.7	100.0
Miss Unobserved ing	2	3.3		Missing	63.3		
Total	60	100.0		Total	60	100.0	

Observation room

	Urine test				BP check		
	Frequency	Percent	Valid Percent		Frequency	Percent	Valid Percent
Done correctly	48	80.0	82.8		54	90.0	93.1
Done incorrectly	10	16.7	17.2		4	6.7	6.9
Total observed	58	96.7	100.0		58	96.7	100.0
Missing/not observed	2	3.3			2	3.3	
Total	60	100.0			60	100.0	

Blood room

	Taking blood				Rapid tests		
	Frequency	Percent	Valid Percent		Frequency	Percent	Valid Percent
Done correctly	55	91.7	94.8		58	96.7	100.0
Done incorrectly	3	5.0	5.2		0	0	0
Total observed	58	96.7	100.0		58	96.7	100.0
Missing/not observed	2	3.3			2	3.3	
Total	60	100.0			60	100.0	

Injection room

	Giving injection		
	Frequency	Percent	Valid Percent
Done correctly	58	96.7	100.0
Total observed	58	96.7	100.0
Missing/not observed	2	3.3	
Total	60	100.0	

Consultation room

	First visit				Follow up visit		
	Frequency	Percent	Valid Percent		Frequency	Percent	Valid Percent
Done correctly	22	36.7	39.3		7	11.7	16.7
Done incorrectly	34	56.7	60.7		35	58.3	83.3
Total observed	56	93.3	100.0		42	70.0	100.0
Missing/not observed	4	6.7			18	30.0	
Total	60	100.0			60	100.0	

Maintenance of privacy at various work stations

	Reception area				Observation room		
	Frequency	Percent	Valid Percent		Frequency	Percent	Valid Percent
Complete	10	16.7	17.2		29	48.3	50.0
Partial	5	8.3	8.6		5	8.3	8.6
None	43	71.7	74.1		24	40.0	41.4
Total observed	58	96.7	100.0		58	96.7	100.0
Unobserved	2	3.3			2	3.3	
Total	60	100.0			60	100.0	

	Blood room				Injection room		
	Frequency	Percent	Valid Percent		Frequency	Percent	Valid Percent
Complete	41	68.3	70.7		44	73.3	75.9
Partial	3	5.0	5.2		0	0	0
None	14	23.3	24.1		14	23.3	24.1
Total observed	58	96.7	100.0		58	96.7	100.0
Unobserved	2	3.3			2	3.3	
Total	60	100.0			60	100.0	

Appendix 15c: Narrative observation data analysis report per health authority

How activities were performed in work stations

Reception area

Reception registration				Reception enquiry		
	Done correctly	Done Incorrectly	Total	Done correctly	Done Incorrectly	Total
Municipal	21(75%)	7(25%)	28(100%)	8(62%)	5(38%)	13(100%)
Provincial	23(77%)	7(23%)	30(100%)	9(100%)	0(0%)	9(100%)
Total	44(76%)	14(24%)	58(100%)	17(77%)	5(23%)	22(100%)

Observation room

Urine test	Urine test				BP check		
	Done correct	Done incorrect	Total		Done correct	Done incorrect	Total
Municipal	18(64%)	10(36%)	28(100%)		24(86%)	4(14%)	28(100%)
Provincial	30(100%)	0(0%)	30(100%)		30(100%)	0(0%)	30(100%)
Total	48(83%)	10(17%)	58(100%)		54(93%)	4(7%)	58(100%)

		Urine test - How			BP check		
Health authority		Done correctly	Done Incorrectly	Total	Done correctly	Done Incorrectly	Total
Provincial	Count	30	0	30	30	0	30
	Expected Count	24.8	5.2	30.0	27.9	2.1	30.0
	Std. Residual	1.0	-2.3		.4	-1.4	
Municipal	Count	18	10	28	24	4	28
	Expected Count	23.2	4.8	28.0	26.1	1.9	28.0
	Std. Residual	-1.1	2.4		-.4	1.5	
Total	Count	48	10	58	54	4	58
	Expected Count	48.0	10.0	58.0	54.0	4.0	58.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability		Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	12.946 ^a	1	.000	.000	.000			4.603 ^a	1	.032	.048	.048	
Continuity Correction ^b	10.564	1	.001					2.647	1	.104			
Likelihood Ratio	16.826	1	.000	.000	.000			6.144	1	.013	.048	.048	
Fisher's Exact Test				.000	.000						.048	.048	
Linear-by-Linear Association	12.723 ^c	1	.000	.000	.000	.000		4.524 ^c	1	.033	.048	.048	.048
N of Valid Cases	58							58					

a. 1 cells (25.0%) have expected count less than 5.

The minimum expected count is 4.83.

b. Computed only for a 2x2 table

c. The standardized statistic is 3.567.

a. 2 cells (50.0%) have expected count less than 5.

The minimum expected count is 1.93.

b. Computed only for a 2x2 table

The standardized statistic is 2.127.

Blood room

	Taking blood				Rapid tests	
	Done correct	Done incorrect	Total		Done correct	Total
Municipal	25	3	28(100%)		28(100%)	28(100%)
Provincial	30(100%)	0	30(100%)		30(100%)	30(100%)
Total	55	3	58(100%)		58(100%)	58(100%)

Injection room

	Giving injections	
	Done correct	Total
Municipal	28(100%)	28(100%)
Provincial	30(100%)	30(100%)
Total	58(100%)	58(100%)

Consultation room

	First visit				Repeat visit		
	Done correct	Done incorrect	Total		Done correct	Done incorrect	Total
Municipal	3(11%)	25(89%)	28(100%)		2(14%)	12(86%)	14(100%)
Provincial	19(66%)	10(34%)	29(100%)		5(18%)	23(82%)	28(100%)
Total	22(39%)	35(61%)	57(100%)		7(17%)	35 (83%)	42(100%)

Crosstab

Consultation - first visit - How		Done correctly	Done Incorrectly	Total
Provincial Health authority	Count	19	9	28
	Expected Count	11.0	17.0	28.0
	Std. Residual	2.4	-1.9	
Municipal Health authority	Count	3	25	28
	Expected Count	11.0	17.0	28.0
	Std. Residual	-2.4	1.9	
Total	Count	22	34	56
	Expected Count	22.0	34.0	56.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	19.166 ^a	1	.000	.000	.000	
Continuity Correction ^b	16.845	1	.000			
Likelihood Ratio	20.808	1	.000	.000	.000	
Fisher's Exact Test				.000	.000	
Linear-by-Linear Association	18.824 ^c	1	.000	.000	.000	.000
N of Valid Cases	56					

a. 0 cells (.0%) have expected count less than 5.

The minimum expected count is 11.00.

b. Computed only for a 2x2 table

c. The standardized statistic is 4.339.

Maintenance of privacy in work stations

Privacy	Reception area					Observation Room			
	Complete	Partial	None	Total		Complete	Partial	None	Total
Municipal	0(0%)	5 (18%)	23(82%)	28(100%)		9(32%)	5(18%)	14(50%)	28(100%)
Provincial	10(33%)	0(0%)	20 (67%)	30(100%)		20(67%)	0(0%)	10(33%)	30(100%)
Total	10(17%)	5 (9%)	43(74%)	58(100%)		29(50%)	5(9%)	24(41%)	58(100%)

Maintenance of privacy		Reception area				Observation room			
Health authority		Complete	Partial	Total		Complete	Partial	None	Total
Provincial	Count	10	0	20		20	0	10	30
	Expected Count	5.2	2.6	22.2		15.0	2.6	12.4	30.0
	Std. Residual	2.1	-1.6	-.5		1.3	-1.6	-.7	
Municipal	Count	0	5	23		9	5	14	28
	Expected Count	4.8	2.4	20.8		14.0	2.4	11.6	28.0
	Std. Residual	-2.2	1.7	.5		-1.3	1.7	.7	
Total	Count	10	5	43		29	5	24	58
	Expected Count	10.0	5.0	43.0		29.0	5.0	24.0	58.0

Chi-Square Tests

		Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability			Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square		15.158 ^a	2	.001	.000					9.782 ^a	2	.008	.005		
Continuity Correction ^b		20.935	2	.000	.000					11.811	2	.003	.003		
Likelihood Ratio		16.121			.000					9.604			.005		
Fisher's Exact Test		5.746 ^b	1	.017	.017	.012	.007			4.115 ^b	1	.043	.054	.029	.014
Linear-by-Linear Association		58								58					
N of Valid Cases		15.158 ^a	2	.001	.000					9.782 ^a	2	.008	.005		

a. 1 cells (25.0%) have expected count less than 5.

The minimum expected count is 2.41

b. Computed only for a 2x2 table

c. The standardized statistic is 2.397.

a. 2 cells (50.0%) have expected count less than 5.

The minimum expected count is 2.41

b. Computed only for a 2x2 table

The standardized statistic is 2.029.

Privacy	Blood room					Injection Room		
	Complete	Partial	None	Total		Complete	None	Total
Municipal	14(50%)	0(0%)	14(50%)	28(100%)		14 (50%)	14 50%)	28(100%)
Provincial	27(90%)	3(10%)	0(0%)	30(100%)		30 (100%)	0(0%)	30(100%)
Total	41(71%)	3(5%)	14(24%)	58(100%)		44 (76%)	14(24%)	58(100%)

Maintenance of privacy		Blood room					Injection room		
Health authority		Complete	Partial	None	Total		Complete	None	Total
Provincial	Count	27	3	0	30		30	0	30
	Expected Count	21.2	1.6	7.2	30.0		22.8	7.2	30.0
	Std. Residual	1.3	1.2	-2.7			1.5	-2.7	
Municipal	Count	14	0	14	28		14	14	28
	Expected Count	19.8	1.4	6.8	28.0		21.2	6.8	28.0
	Std. Residual	-1.3	-1.2	2.8			-1.6	2.8	
Total	Count	41	3	14	58		44	14	58
	Expected Count	41.0	3.0	14.0	58.0		44.0	14.0	58.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2- sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)	Point Probability		Value	df	Asymp. Sig. (2- sided)	Exact Sig. (2- sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	21.078 ^a	2	.000	.000				19.773 ^a	1	.000	.000	.000	
Continuity Correction	27.692	2	.000	.000				17.136	1	.000			
Likelihood Ratio	22.954			.000				25.293	1	.000	.000	.000	
Fisher's Exact Test	15.759 ^b	1	.000	.000	.000	.000					.000	.000	
Linear-by-Linear Association	58							19.432 ^c	1	.000	.000	.000	.000
N of Valid Cases	21.078 ^a	2	.000	.000				58					

a. 1 cells (25.0%) have expected count less than 5.
The minimum expected count is 1.45

b. Computed only for a 2x2 table

c. The standardized statistic is 3.970.

a. 2 cells (50.0%) have expected count less than 5.
The minimum expected count is 6.76

b. Computed only for a 2x2 table

The standardized statistic is 4.408.

	Consultation room			
Privacy	Complete	Partial	None	Total
Municipal	17(61%)	8 (29%)	3 (10%)	28(100%)
Provincial	25 (83%)	3 (10%)	2 (7%)	30(100%)
Total	42(72%)	11 (19%)	5 (9%)	58(100%)

Appendix 16a: Record review data analysis report per PHC clinic

Section A: Type of record used

White maternity case record used

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	81	100	100	100	100	100	100	100	100	100	100	1181
No	0	19	0	0	0	0	0	0	0	0	0	0	19
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

ANC card kept at the PHC facility

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	100	100	100	100	100	100	100	100	100	100	100	1200
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Given to pregnant women as pregnant woman held record

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	100	100	100	100	100	100	100	100	100	100	100	1200
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Section B: Compliance with BANC principles: *Information on ANC card*

LNMP

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	94	100	100	100	100	100	100	100	83	100	97	1174
No	0	6	0	0	0	0	0	0	0	17	0	3	26
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

EDD

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	93	100	100	100	99	100	88	100	68	93	90	1141
No	0	7	0	0	0	1	0	12	0	32	7	10	59
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

ANC plan

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	57	8	7	77	24	0	91	76	38	89	83	0	550
No	43	92	93	23	76	100	9	24	62	11	17	100	59650
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Delivery plan

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	43	8	53	67	25	0	91	62	33	82	64	8	536
No	57	92	47	33	75	100	9	38	67	18	36	92	664
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Transport arrangement

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	18	93	97	100	11	91	88	70	90	86	31	875
No	0	82	7	3	0	89	9	12	30	10	14	69	325
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Future contraception

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	88	95	98	100	99	100	79	100	89	100	65	1113
No	0	12	5	2	0	1	0	21	0	11	0	35	87
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Lifestyle counselling

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	87	100	98	100	100	100	90	100	93	96	87	1151
No	0	13	0	2	0	0	0	10	0	7	4	13	49
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Infant feeding choice

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	90	97	99	100	96	100	90	99	78	93	80	1122
No	0	10	3	1	0	4	0	10	0	22	7	20	77
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Problems highlighted in red

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	48	23	83	54	85	25	78	68	66	63	76	35	704
No	35	66	7	37	1	67	17	18	27	25	19	30	349
Total	83	89	90	91	86	92	95	86	93	88	95	65	1053
Not applicable	17	11	10	9	14	8	5	14	7	12	5	35	147

ANC graph plotted

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	71	31	76	87	100	59	61	53	61	75	89	73	835
No	29	69	24	13	0	41	39	47	39	25	11	27	364
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Referral, admission and notes for other consultation, tests and procedures recorded under clinical notes

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	99	99	97	100	97	99	100	97	100	92	99	98	1177
No	1	1	3	0	3	1	0	3	0	8	1	2	23
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Full name and qualification of midwife assessing the pregnant women recorded

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	57	24	36	77	47	59	83	64	17	48	61	66	639
No	43	76	64	23	53	41	17	36	83	52	39	34	560
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Full name and signature of midwife counterchecking the card recorded

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	0	3	1	0	2	2	7	1	0	1	3	2	22
No	100	97	99	100	98	98	93	99	100	99	97	98	1178
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

First visit consultation**All tests and procedures due in first visit done**

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	99	91	99	97	98	97	93	97	100	85	78	99	1133
No	1	9	1	3	2	3	7	3	0	15	22	1	67
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

ANC plan in line with clinical findings

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	58	9	3	75	29	0	92	73	40	84	73	0	536
No	1	0	4	0	0	0	0	5	0	5	8	0	23
Not applicable	41	91	93	25	71	100	8	22	60	11	19	100	641
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

ANC plan implemented

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	58	9	3	75	29	0	92	75	40	89	70	0	540
No	0	0	4	0	0	0	0	3	0	0	13	0	20
N/A	42	91	93	25	71	100	8	22	60	11	17	100	640
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Advice given to the pregnant women in line with clinical findings and ANC plan

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	51	24	74	67	43	8	100	67	28	51	54	31	598
No	48	11	26	30	33	15	0	20	14	36	22	33	288
N/A	1	65	0	3	24	77	0	13	58	13	24	36	314
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Schedule of next visit according to BANC guidelines

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	37	8	3	66	42	41	100	46	61	33	83	44	564
No	63	92	97	34	58	59	0	54	39	67	17	56	636
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Assessment done whether the woman is eligible for the BANC approach

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	28	11	1	9	97	3	89	26	39	2	74	35	414
No	72	89	99	91	3	97	11	74	61	98	26	65	786
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Follow up visit**All repeat tests done in due time**

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	86	50	55	67	66	55	100	86	85	94	70	64	878
No	14	50	45	33	34	45	0	14	15	6	30	36	322
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Follow up done on previous abnormal findings

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	48	11	44	422	64	19	80	71	55	67	47	34	582
No	40	64	39	26	36	81	8	17	23	16	23	39	412
N/A	12	25	17	32	0	0	12	12	22	17	30	27	206
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Assessment for conditions

Pre-eclampsia

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	100	97	100	100	100	100	98	100	100	100	97	1192
No	0	0	3	0	0	0	0	2	0	0	0	3	8
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Anaemia and malnutrition

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	55	14	82	50	100	67	100	81	25	63	21	74	733
No	45	86	18	50	0	33	0	19	75	37	79	26	467
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Foetal growth and post maturity

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	71	31	78	87	99	62	61	62	61	75	43	76	806
No	29	69	22	13	1	38	39	38	39	25	57	24	394
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

HIV infection

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	98	99	100	100	100	98	100	100	94	100	96	99	1184
No	2	1	0	0	0	2	0	0	6	0	4	1	16
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Congenital abnormalities

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	50	29	62	65	61	32	100	82	60	45	60	37	683
No	50	71	38	35	39	68	0	18	40	55	40	63	517
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Foetal movements

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	98	87	93	94	83	59	100	79	99	96	88	77	1054
No	2	13	7	6	17	40	0	21	1	4	12	23	146
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Consultation process: Activities done

Full history

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	100	100	100	100	100	100	100	100	100	100	100	1200
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Routine investigations

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	98	58	100	71	69	100	98	100	100	100	54	100	1048
No	2	42	0	29	31	0	2	0	0	0	46	0	152
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Other investigations

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	43	64	29	76	37	85	42	47	53	49	61	27	613
No	20	15	47	0	48	4	34	32	27	23	13	40	303
N/A	37	21	24	24	15	11	24	21	20	28	26	33	284
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Consent for HIV

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	27	0	10	2	27	0	0	0	39	100	27	79	311
No	71	99	90	95	73	99	99	100	44	0	69	18	857
N/A	2	1	0	3	0	1	1	0	17	0	4	3	32
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

HIV test

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	98	95	100	92	100	99	98	100	95	100	100	97	1174
No	2	5	0	8	0	1	2	-	5	0	0	3	26
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

TB screening

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	59	76	0	54	29	62	97	51	39	77	57	33	634
No	41	24	100	46	71	38	3	49	61	23	43	67	566
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Physical examination

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	97	99	100	100	87	80	97	100	100	60	96	67	1083
No	3	1	0	0	13	20	3	0	0	40	4	33	117
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Pap smear

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	50	28	27	61	41	67	44	37	35	9	44	19	462
No	35	36	56	3	43	31	36	34	33	62	22	49	440
N/A	15	36	17	36	16	2	20	29	32	29	34	32	298
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Vaginal examination

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	73	37	95	68	70	60	60	88	100	21	78	79	829
No	27	63	5	32	30	40	40	12	0	79	22	21	371
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Ultra sound

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	50	31	62	66	61	32	98	82	50	44	60	38	674
No	50	69	38	34	39	68	2	18	50	56	40	62	526
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Calcium supplements

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	96	57	78	93	76	100	100	79	100	83	83	86	1017
No	4	43	22	7	24	0	0	21	0	17	17	14	183
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

History

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	100	100	100	100	100	100	100	100	100	100	100	1200
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Routine investigations

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	100	99	100	99	98	100	100	100	100	100	100	1196
No	0	0	1	0	1	2	0	0	0	0	0	0	4
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Other investigations

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	38	64	29	77	38	86	42	47	43	47	61	27	599
No	2	0	0	0	0	0	0	0	0	0	0	0	2
N/A	60	36	71	23	62	14	58	53	57	53	39	73	599
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Consent for HIV test

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	27	0	10	1	27	0	0	0	39	100	27	79	310
No	73	100	90	99	73	100	100	100	61	0	73	21	890
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

HIV test

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	98	98	100	96	100	100	98	100	96	100	100	97	1183
N/A	2	2	0	4	0	0	2	0	4	0	0	3	17
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

TB screening

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	61	78	0	53	29	62	98	51	39	77	58	34	640
No	38	22	100	46	71	38	2	49	61	23	42	66	558
N/A	1	0	0	1	0	0	0	0	0	0	0	0	2
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Physical examination

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	100	100	100	100	100	98	100	100	100	100	99	1197
No	0	0	0	0	0	0	1	0	0	0	0	1	3
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Pap smear

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
yes	49	27	26	61	41	67	45	36	35	9	44	19	459
no	1	0	1	0	0	0	0	1	0	0	0	0	3
N/A	50	73	73	39	59	33	55	63	65	91	56	81	738
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Vaginal examination

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	72	37	95	69	69	60	60	88	100	20	78	79	827
No	1	0	0	0	1	0	0	0	0	0	0	0	2
N/A	27	63	5	31	30	40	40	12	0	80	22	21	371
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Ultra sound

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	56	32	65	61	65	32	98	82	51	22	54	33	650
No	2	0	0	0	0	0	0	0	0	0	0	0	2
N/A	42	68	36	39	35	68	2	18	49	78	46	67	548
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Calcium supplements

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	95	57	78	93	76	100	100	79	100	83	83	86	1030
N/A	5	43	22	7	24	0	0	21	0	17	17	14	170
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Results for test and activities recorded**Other investigations**

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	100	100	100	99	100	100	100	100	100	100	100	1199
No	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Routine investigations

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	96	80	99	100	96	82	100	94	100	100	94	100	1141
No	4	20	1	0	4	18	0	6	0	0	6	0	59
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Other investigations

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	21	26	28	77	36	79	31	37	33	35	56	14	473
No	19	38	1	0	1	7	11	10	11	12	5	13	128
N/A	60	36	71	23	63	14	58	53	56	53	39	73	599
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

HIV test

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	98	98	100	96	100	100	98	100	96	100	100	97	1183
N/A	2	2	0	4	0	0	2	0	4	0	0	3	17
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

TB screening

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	55	75	0	53	29	52	97	42	28	52	50	21	554
No	7	3	0	0	0	10	1	9	11	24	8	13	86
N/A	38	22	100	47	71	38	2	49	61	24	42	66	560
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Physical examination

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	100	100	100	100	100	100	100	98	100	100	99	99	1196
No	0	0	0	0	0	0	0	2	0	0	1	1	4
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Vaginal examination

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	71	37	95	69	70	59	60	88	100	20	78	79	826
No	1	0	0	0	0	1	0	0	0	1	0	0	3
N/A	28	63	5	31	30	40	40	12	0	79	22	21	371
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Ultra sound

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	54	23	64	61	48	27	91	82	51	20	48	32	601
No	4	9	0	0	16	5	7	0	0	2	6	1	50
N/A	42	68	36	39	36	68	2	18	49	78	46	67	549
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Action on abnormal findings recorded

History

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	11	11	15	14	16	37	0	20	8	14	0	10	155
No	11	4	3	5	5	0	0	6	0	3	0	3	40
N/A	78	85	82	81	79	63	100	74	92	83	100	87	1005
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Routine investigations

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	38	23	18	17	20	24	0	34	23	0	39	27	263
No	8	0	9	7	13	5	0	2	0	1	2	2	49
N/A	54	77	73	76	67	71	100	64	77	99	59	71	888
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Other investigations

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	7	11	8	69	13	9	16	9	5	15	23	7	191
No	2	7	2	0	6	0	0	1	5	1	4	1	29
N/A	91	82	90	31	81	91	84	90	90	84	73	92	980
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

HIV test

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	34	41	41	50	45	39	40	49	44	35	25	42	485
No	0	0	1	0	0	1	0	0	0	1	0	0	3
N/A	66	59	58	50	55	60	60	51	56	64	75	58	712
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

TB screening

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	5	6	0	35	7	14	37	8	2	6	7	1	128
No	26	31	0	9	8	8	1	0	22	13	27	13	158
N/A	69	63	100	56	85	78	62	92	76	81	66	86	914
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Physical examination

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	8	2	9	2	4	14	5	19	0	3	13	13	92
No	2	0	5	0	1	0	1	0	0	2	7	1	19
N/A	90	98	86	98	95	86	94	81	100	95	80	86	1089
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Pap smear

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	2	0	1	11	0	5	2	3	1	0	4	1	30
No	2										4		5
N/A	96	100	99	89	100	95	98	97	99	100	92	99	1165
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Vaginal examination

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	28	22	30	31	27	25	20	26	26	11	22	42	310
No	2	0	2	5	0	0	0	0	0	0	8	0	17
N/A	70	78	68	64	73	75	80	74	74	89	70	58	873
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Ultra sound

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	2	0	4	0	0	5	5	0	0	0	0	2	18
No	1	0	0	0	0	0	0	0	0	0	0	0	1
N/A	97	100	96	100	100	95	95	100	100	1	00	98	1181
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Tests and medicine supplies repeated in due time**Routine investigations**

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	83	47	65	67	66	55	100	86	88	95	70	76	898
No	17	53	35	33	34	45	0	14	12	5	30	24	302
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

HIV testing

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	48	29	35	34	37	35	58	46	47	61	51	38	519
No	13	29	25	14	19	26	0	5	7	3	24	19	184
N/A	39	42	40	52	44	39	42	49	46	36	25	43	497
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Calcium supplements

Facility	PS1	PS2	MS1	MS2	PN1	PN2	MN1	MN2	PW1	PW2	MW1	MW2	Total
Yes	89	57	76	93	76	100	100	36	100	73	82	36	918
No	11	43	24	7	24	0	0	64	0	27	18	64	282
Total	100	100	100	100	100	100	100	100	100	100	100	100	1200

Appendix 16b: Record review data analysis report whole sample

Demographics – Number of records reviewed

Whole sample		Frequency	Percent	Valid Percent	Health Authority	Frequency	Percent	Valid Percent
Valid	1	1200	100.0	100.0	Municipal	600	50.0	50.0
					KZNPA	600	50.0	50.0
	Total	1200	100.0	100.0	Total	1200	100.0	100.0

Section A: Type of record

	White maternity case record used			ANC card Kept at the PHC facility			Given to pregnant women as pregnant woman held record		
	yes	no	Total	yes	no	Total	yes	no	Total
Frequency	1181	19	1200	1200	0	1200	1200	0	1200
Percentage	98.4	1.6	100	100	0	100	100	0	100
Valid Percentage	98.4	1.6	100	100	0	100	100	0	100

Information recorded on ANC card

LNMP				EDD			
	Observed N	Expected N	Residual		Observed N	Expected N	Residual
Yes	1174(97.8%)	600.0	574.0		1131(94.3%)	600.0	531.0
No	26(2.2%)	600.0	-574.0		69 (5.8%)	600.0	-531.0
Total	1200(100%)				1200 (100%)		

ANC plan			
	Observed N	Expected N	Residual
Yes	550(45.8%)	600.0	50.0
No	650(54.2%)	600.0	-50.0
Total	1200(100%)		

Delivery plan				Transport arrangement			
	Observed N	Expected N	Residual		Observed N	Expected N	Residual
Yes	536(55.3%)	600.0	-64.0		875(72.9%)	600.0	275.0
No	664(44.7%)	600.0	64.0		325(27.1%)	600.0	-275.0
Total	1200(100%)				1200(100%)		

Future contraception				Lifestyle counselling			
	Observed N	Expected N	Residual		Observed N	Expected N	Residual
Yes	1113(92.8%)	600.0	513.0		1151(95.9%)	600.0	551.0
No	87(7.2%)	600.0	-513.0		49 (4.1%)	600.0	-551.0
Total	1200(100%)				1200(100%)		

Infant feeding choice				Problem list highlighted in red			
	Observed N	Expected N	Residual		Observed N	Expected N	Residual
Yes	1122(93.6%)	599.5	522.5		704(66.9%)	526.5	177.5
No	77(6.4%)	599.5	-522.5		349 (33.1%)	526.5	-177.5
Total	1199 (100%)				1053 (100%)		

ANC graph plotted				Referral, admission and notes for other consultation, tests and procedures recorded under clinical notes			
	Observed N	Expected N	Residual		Observed N	Expected N	Residual
Yes	836(69.7%)	600.0	236.0		1177 (98.1%)	600.0	577.0
No	364 (30.3%)	600.0	-236.0		23(1.9%)	600.0	-577.0
Total	1200 (100%)				1200 (100%)		

Full name and qualification of midwife assessing the pregnant women					Full name and signature of midwife counterchecking the card		
	Observed N	Expected N	Residual		Observed N	Expected N	Residual
Yes	639(53.3%)	599.5	39.5		22(1.8%)	600.0	-578.0
No	560(46.7%)	599.5	-39.5		1178(98.2%)	600.0	578.0
Total	1199(100%)				1200(100%)		

First visit consultation

All tests and procedures due in the first visit done					ANC plan in line with all clinical findings		
	Observed N	Expected N	Residual		Observed N	Expected N	Residual
Yes	1133(96.4%)	587.5	545.5		536 (95.9%)	279.5	256.5
No	42 (3.6%)	587.5	-545.5		23 (4.1%)	279.5	-256.5
Total	1175(100%)				559 (100%)		

ANC plan implemented					Advice given to the pregnant women in line with clinical findings and ANC plan		
	Observed N	Expected N	Residual		Observed N	Expected N	Residual
Yes	540(96.4%)	280.0	260.0		598 (67.5%)	443.0	155.0
No	20 (3.6%)	280.0	-260.0		288 (35.5%)	443.0	-155.0
Total	560 (100%)				886 (100%)		

Schedule of next visit according to BANC guidelines					Assessment done whether the woman is eligible for the BANC approach		
	Observed N	Expected N	Residual		Observed N	Expected N	Residual
Yes	564 (48.1%)	586.0	-22.0		414 (34.5%)	599.5	-185.5
No	608 (51.9%)	586.0	22.0		785(65.5%)	599.5	185.5
Total	1172(100%)				1199(100%)		

Follow up visit

All repeat tests done in due time					Follow up done on previous abnormal findings		
	Frequency	Percent	Valid Percent		Frequency	Percent	Valid Percent
Yes	878(73.2%)	73.2	73.2		582(58.6%)	48.5	58.6
No	322(26.8%)	26.8	26.8		412(41.4%)	34.3	41.4
Total	1200(100%)	100.0	100.0		994(100%)	82.8	100.0

Information recorded on ANC card

Pre-eclampsia					Anaemia and malnutrition		
	Observed N	Expected N	Residual		Observed N	Expected N	Residual
Yes	1192(99.5%)	599.0	593.0		732(61.1%)	599.5	132.5
No	6(0.5%)	599.0	-593.0		467(38.9%)	599.5	-132.5
Total	1198(100%)				1199(100%)		

Foetal growth and post maturity					HIV infection		
	Observed N	Expected N	Residual		Observed N	Expected N	Residual
Yes	806(67.2%)	600.0	206.0		1185(98.8%)	599.5	585.5
No	394(32.8%)	600.0	-206.0		14(1.2%)	599.5	-585.5
Total	1200(100%)				1199(100%)		

Congenital abnormality					Foetal movements		
	Observed N	Expected N	Residual		Observed N	Expected N	Residual
Yes	683(56.9%)	600.0	83.0		1053(88.0%)	598.0	455.0
No	517(43.1%)	600.0	-83.0		143(12.0%)	598.0	-455.0
Total	1200(100%)				1196(100%)(1		

Consultation process

Activity done

History				Routine investigations		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	1200(100%)	1200.0	.0	1048(87.4%)	599.5	448.5
No	0(0%)			151(12.6%)	599.5	-448.5
Total	1200(100%)	1200.0	.0	1199(100%)		

Other investigations				Consent for HIV		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	613(66.9%)	458.0	155.0	311(26.6%)	584.0	-273.0
No	303(33.1%)	458.0	-155.0	857(73.4%)	584.0	273.0
Total	916(100%)			1168(100%)		

HIV				TB		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	1174(97.8%)	600.0	574.0	634(52.9%)	599.5	34.5
No	26(2.2%)	600.0	-574.0	565(47.1%)	599.5	-34.5
Total	1200(100%)			1199(100%)		

Physical examination				Pap smear		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	1083(90.3%)	600.0	483.0	462(51.2%)	451.0	11.0
No	117(9.7%)	600.0	-483.0	440(48.8%)	451.0	-11.0
Total	1200(100%)			902(100%)		

Vaginal examination				Ultra sound		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	829(69.7%)	595.0	234.0	674(56.2%)	600.0	74.0
No	361(30.3%)	595.0	-234.0	526(43.8%)	600.0	-74.0
Total	1190(100%)			1200(100%)		

Calcium	Observed N	Expected N	Residual
yes	1031 (86.0%)	599.5	431.5
no	168(10.0%)	599.5	-431.5
Total	1199(100%)		

Date recorded

History				Routine investigations		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	1200(100%)	1200.0	.0	1196(99.7%)	600.0	596.0
No	0(0%)	0	0	4(0.3%)	600.0	-596.0
Total	1200 (100%)			1200(100%)		

Other investigations				Consent for HIV		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	599(99.7%)	300.5	298.5	310(100%)	310.0	.0
No	2(0.3%)	300.5	-298.5	0(0%)	0	0
Total	601(100%)			310(100%)		

HIV				TB		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	1183(100%)	1183.0	.0	640(99.7%)	321.0	319.0
No	0(0%)	0	0	2(0.3%)	321.0	-319.0
Total	1183(100%)			642 (100%)		

Physical examination				Pap smear		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	1197(100%)	1197.0	.0	459(99.4%)	231.0	228.0
No	0(0%)	0	0	3(0.6%)	231.0	-228.0
Total	1197 (100%)			462(100%)		

Vaginal examination				Ultra sound		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	827(99.8%)	414.5	412.5	650(99.7%)	326.0	324.0
No	2(0.2%)	414.5	-412.5	2(0.3%)	326.0	-324.0
Total	829(100%)			652 (100%)		

Calcium	Observed N	Expected N	Residual
yes	1030 (100%)	1030.0	.0
Total	1030 (100%)		

a. This variable is constant. Chi-Square Test cannot be performed.

Results recorded

History				Routine investigations		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	1199(99.9%)	600.0	599.0	1141(95.1%)	600.0	541.0
No	1(0.1%)	600.0	-599.0	59(4.9%)	600.0	-541.0
Total	1200(100%)			1200(100%)		

Other investigations				HIV		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	473(78.7%)	300.5	172.5	1183(100%)	1183.0	.0
No	128(21.3%)	300.5	-172.5	0(0%)	0	0
Total	601(100%)			1183 (100%)		

TB				Physical examination		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	554(86.6%)	320.0	234.0	1196(99.9%)	598.5	597.5
No	86 (13.4%)	320.0	-234.0	1(0.1%)	598.5	-597.5
Total	640(100%)			1197(100%)		

Pap smear				Vaginal examination		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	197(42.9%)	229.5	-32.5	826(99.6%)	414.5	411.5
No	262(57.1%)	229.5	32.5	3(0.4%)	414.5	-411.5
Total	459(100%)			829(100%)		

Ultra Sound	Observed N	Expected N	Residual
yes	601(92.3%)	325.5	275.5
no	50(7.7%)	325.5	-275.5
Total	651 (100%)		

Action on abnormal findings

History				Routine investigations		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	156 (79.6%)	98.0	58.0	263(84.3%)	156.0	107.0
No	40 (20.4%)	98.0	-58.0	49 (15.7%)	156.0	-107.0
Total	196 (100%)			312 (100%)		

Other investigations				HIV		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	192(86.9%)	110.5	81.5	485(99.4%)	244.0	241.0
No	29(13.1%)	110.5	-81.5	3 (0.6%)	244.0	-241.0
Total	221 (100%)			488 (100%)		

TB				Physical examination		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	128(44.8%)	143.0	-15.0	92(82.9%)	55.5	36.5
No	158(55.2%)	143.0	15.0	19(17.1%)	55.5	-36.5
Total	286 (100%)			111(100%)		

Pap smear				Vaginal examination		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	30(83.3%)	18.0	12.0	310 (94.8%)	163.5	146.5
No	6(16.7%)	18.0	-12.0	17(5.2%)	163.5	-146.5
Total	36(100%)			327(100%)		

Ultra Sound	Observed N	Expected N	Residual
yes	18 (94.7%)	9.5	8.5
no	1(5.3%)	9.5	-8.5
Total	19(100%)		

Repeated in due time

Routine investigations				HIV		
	Observed N	Expected N	Residual	Observed N	Expected N	Residual
Yes	898(75.0%)	598.5	299.5	519(73.8%)	351.5	167.5
No	299(25.0%)	598.5	-299.5	184(26.2%)	351.5	-167.5
Total	1197(100%)			703(100%)		

Calcium	Observed N	Expected N	Residual
yes	918 (89.1%)	515.0	403.0
no	112(10.9%)	515.0	-403.0
Total	1030 (100%)		

Appendix16c: Record review data analysis report per health authority

Section A: Type of record

White maternity case record used		yes	no	Total
Health Authority	Municipal	581(96.8%)	19(3.2%)	600(100%)
	Provincial	600(100%)	0(0%)	600(100%)
Total		1181(98.4%)	19(1.6%)	1200(100%)

ANC card Kept at the PHC facility		no	Total		Given to pregnant women as pregnant woman held record		yes	Total
Health Authority	Municipal	600(100%)	600(100%)		Health Authority	Municipal	600(100%)	600(100%)
	Provincial	600(100%)	600(100%)			Provincial	600(100%)	600(100%)
Total		1200(100%)	1200(100%)				1200(100%)	1200(100%)

Crosstab

White maternity case record used			yes	no	Total
Health Authority	Municipal	Count	581	19	600
		Expected Count	590.5	9.5	600.0
		Std. Residual	-.4	3.1	
	Provincial	Count	600	0	600
		Expected Count	590.5	9.5	600.0
		Std. Residual	.4	-3.1	
Total		Count	1181	19	1200
		Expected Count	1181.0	19.0	1200.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	19.306 ^a	1	.000		
Continuity Correction ^b	17.327	1	.000		
Likelihood Ratio	26.645	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	19.290	1	.000		
N of Valid Cases	1200				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.50.

b. Computed only for a 2x2 table

Section B: Compliance with BANC principles
Information on ANC card

LNMP		yes	no	Total		EDD	yes	no	Total
Health Authority	Municipal	577(96.2%)	23(3.8%)	600(100%)		Municipal	560(93.3%)	40 9(6.7%)	600(100%)
	Provincial	597(99.5%)	3(0.5%)	600(100%)		Provincial	571(95.2%)	29(4.8%)	600(100%)
Total		1174(97.8%)	26(2.2%)	1200(100%)		Total	1131(94.2%)	69(5.8%)	1200(100%)

Crosstab

LNMP			yes	no	Total	EDD	yes	no	Total
Health Authority	Municipal	Count	577	23	600	Municipal	560	40	600
		Expected Count	587.0	13.0	600.0		565.5	34.5	600.0
		Std. Residual	-.4	2.8			-.2	.9	
	Provincial	Count	597	3	600	Provincial	571	29	600
		Expected Count	587.0	13.0	600.0		565.5	34.5	600.0
		Std. Residual	.4	-2.8			.2	-.9	
Total		Count	1174	26	1200	Total	1131	69	1200
		Expected Count	1174.0	26.0	1200.0		1131.0	69.0	1200.0

Chi-Square Tests

LNMP	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	EDD	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	15.725 ^a	1	.000				1.861 ^a	1	.173	
Continuity Correction	14.192	1	.000				1.538	1	.215	
Likelihood Ratio	17.788	1	.000				1.868	1	.172	
Fisher's Exact Test				.000	.000					.215
Linear-by-Linear Association	15.712	1	.000				1.859	1	.173	
N of Valid Cases	1200						1200			

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.00.

b. Computed only for a 2x2 table

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 34.50.

b. Computed only for a 2x2 table

ANC plan		yes	no	Total		Delivery plan	yes	no	Total
Health Authority	Municipal	216(36.0%)	384(64%)	600(100%)		Municipal	191(31.8%)	409(68.2%)	600(100%)
	Provincial	334 (55.7%)	266(44.3%)	600(100%)		Provincial	345(57.5%)	255(42.5%)	600(100%)
Total		550(45.8%)	650(54.2%)	1200(100%)		Total	536(44.7%)	664(55.3%)	1200(100%)

Crosstab

ANC plan			yes	no	Total	Delivery plan			yes	no	Total
Health Authority	Municipal	Count	216	384	600	Municipal			191	409	600
		Expected Count	275.0	325.0	600.0				268.0	332.0	600.0
		Std. Residual	-3.6	3.3					-4.7	4.2	
	Provincial	Count	334	266	600	Provincial			345	255	600
		Expected Count	275.0	325.0	600.0				268.0	332.0	600.0
		Std. Residual	3.6	-3.3					4.7	-4.2	
Total		Count	550	650	1200	Total			536	664	1200
		Expected Count	550.0	650.0	1200.0				536.0	664.0	1200.0

Chi-Square Tests

ANC plan	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Delivery plan	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	46.738 ^a	1	.000				79.963 ^a	1	.000	
Continuity Correction ^b	45.949	1	.000				78.928	1	.000	
Likelihood Ratio	47.055	1	.000				80.920	1	.000	
Fisher's Exact Test				.000	.000					.000
Linear-by-Linear Association	46.699	1	.000				79.897	1	.000	
N of Valid Cases	1200						1200			

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.00.

b. Computed only for a 2x2 table

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 268.00.

b. Computed only for a 2x2 table

Transport arrangement		yes	no	Total	Future contraception		yes	no	Total
Health Authority	Municipal	389(64.8%)	211(35.2%)	600(100%)	Municipal		576(96.0%)	24(4.0%)	600(100%)
	Provincial	486(81.0%)	114(19.0%)	600(100%)	Provincial		537(89.5%)	63(10.5%)	600(100%)
	Total	875(72.9%)	325(27.1%)	1200(100%)	Total		1113(92.7%)	87(7.3%)	1200(100%)

Crosstab

Transport arrangement			yes	no	Total	Future contraception			yes	no	Total
Health Authority	Municipal	Count	389	211	600	Municipal			576	24	600
		Expected Count	437.5	162.5	600.0				556.5	43.5	600.0
		Std. Residual	-2.3	3.8					.8	-3.0	
	Provincial	Count	486	114	600	Provincial			537	63	600
		Expected Count	437.5	162.5	600.0				556.5	43.5	600.0
		Std. Residual	2.3	-3.8					-.8	3.0	
Total		Count	875	325	1200				1113	87	1200
		Expected Count	875.0	325.0	1200.0				1113.0	87.0	1200.0

Chi-Square Tests

Transport arrangement	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Future contraception	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	39.704 ^a	1	.000				18.849 ^a	1	.000	
Continuity Correction ^b	38.889	1	.000				17.895	1	.000	
Likelihood Ratio	40.172	1	.000				19.488	1	.000	
Fisher's Exact Test				.000	.000					.000
Linear-by-Linear Association	39.671	1	.000				18.834	1	.000	
N of Valid Cases	1200						1200			

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 162.50.

b. Computed only for a 2x2 table

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 43.50.

b. Computed only for a 2x2 table

Lifestyle counselling		yes	no	Total	Infant feeding choice		yes	no	Total
Health Authority	Municipal	580 (96.7%)	20 (3.3%)	600(100%)	Municipal		563(93.8%)	36(6.2%)	600(100%)
	Provincial	571 (95.2%)	29 (4.8%)	600(100%)	Provincial		559 (93.2%)	41 (6.8%)	600(100%)
	Total	1151(95.9%)	49 (4.1%)	1200(100%)	Total		1122(93.5%)	77(6.5%)	1200(100%)

Crosstab

Lifestyle counselling		yes	no	Total	Infant feeding choice		yes	no	Total
Health Authority	Municipal	Count	580	20	600	Municipal	563	36	599
		Expected Count	575.5	24.5	600.0		560.5	38.5	599.0
		Std. Residual	.2	-.9			.1	-.4	
	Provincial	Count	571	29	600	Provincial	559	41	600
		Expected Count	575.5	24.5	600.0		561.5	38.5	600.0
		Std. Residual	-.2	.9			-.1	.4	
Total		Count	1151	49	1200		1122	77	1199
		Expected Count	1151.0	49.0	1200.0		1122.0	77.0	1199.0

Chi-Square Tests

Lifestyle counseling	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Infant feeding choice	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.723 ^a	1	.189				.338 ^a	1	.561		
Continuity Correction ^b	1.362	1	.243				.215	1	.643		
Likelihood Ratio	1.733	1	.188				.338	1	.561		
Fisher's Exact Test				.243	.121					.638	.322
Linear-by-Linear Association	1.722	1	.189				.338	1	.561		
N of Valid Cases	1200						1199				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 24.50.

b. Computed only for a 2x2 table

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 38.47.

b. Computed only for a 2x2 table

Crosstab

ANC plan			yes	no	Total	Delivery plan		yes	no	Total
Health Authority	Municipal	Count	216	384	600	Municipal		191	409	600
		Expected Count	275.0	325.0	600.0			268.0	332.0	600.0
		Std. Residual	-3.6	3.3				-4.7	4.2	
	Provincial	Count	334	266	600	Provincial		345	255	600
		Expected Count	275.0	325.0	600.0			268.0	332.0	600.0
		Std. Residual	3.6	-3.3				4.7	-4.2	
Total		Count	550	650	1200	Total		536	664	1200

Problem list highlighted in red		yes	no	Total	ANC graph plotted	yes	no	Total
Health Authority	Municipal	310(51.7%)	221(48.3%)	600(100%)	Municipal	397 (66.2%)	203 (33.8%)	600(100%)
	Provincial	394(65.7%)	128(34.3%)	600(100%)	Provincial	439 (73.2%)	161 (26.8%)	600(100%)
Total		704(58.7%)	349(41.3%)	1200(100%)	Total	836(69.7%)	364(30.3%)	1200(100%)

Crosstab

Problem list highlighted in red			yes	no	Total	ANC graph plotted			yes	no	Total
Health Authority	Municipal	Count	310	221	531	Municipal			397	203	600
		Expected Count	355.0	176.0	531.0				418.0	182.0	600.0
		Std. Residual	-2.4	3.4					-1.0	1.6	
	Provincial	Count	394	128	522	Provincial			439	161	600
		Expected Count	349.0	173.0	522.0				418.0	182.0	600.0
		Std. Residual	2.4	-3.4					1.0	-1.6	
Total		Count	704	349	1053				836	364	1200
		Expected Count	704.0	349.0	1053.0				836.0	364.0	1200.0

Chi-Square Tests

Problem list highlighted in red	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	ANC graph plotted	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	34.731 ^a	1	.000				6.956 ^a	1	.008		
Continuity Correction ^b	33.963	1	.000				6.629	1	.010		
Likelihood Ratio	35.054	1	.000				6.968	1	.008		
Fisher's Exact Test				.000	.000					.010	.005
Linear-by-Linear Association	34.698	1	.000				6.950	1	.008		
N of Valid Cases	1053						1200				

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 173.01.

b. Computed only for a 2x2 table

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 182.00.

b. Computed only for a 2x2 table

Referral, admission and notes for other consultation, tests and procedures recorded under clinical notes		yes	no	Total	Full name and qualification of midwife assessing the pregnant women		yes	No	Total
Health Authority	Municipal	586 (97.7%)	14 (2.3%)	600(100%)	Municipal		252(42.0%)	348(58.0%)	600(100%)
	Provincial	591(98.5%)	9 (1.5%)	600(100%)	Provincial		387(64.5%)	213(35.5%)	600(100%)
Total		1177(98.1%)	23 (1.9%)	1200(100%)	Total		639(53.3%)	561(46.7%)	1200(100%)

Crosstab

Referral, admission and notes for other consultation, tests and procedures recorded under clinical notes			yes	no	Total	Full name and qualification of midwife assessing the pregnant women	yes	no	Total
Health Authority	Municipal	Count	586	14	600	Municipal	252	348	600
		Expected Count	588.5	11.5	600.0		319.2	280.8	600.0
		Std. Residual	-.1	.7			-3.8	4.0	
	Provincial	Count	591	9	600	Provincial	387	213	600
		Expected Count	588.5	11.5	600.0		319.8	280.2	600.0
		Std. Residual	.1	-.7			3.8	-4.0	
Total		Count	1177	23	1200		639	561	1200
		Expected Count	1177.0	23.0	1200.0		639.0	561.0	1200.0

Chi-Square Tests

Referral, admission and notes for other consultation, tests and procedures recorded under clinical notes	Value	df	Asyp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Full name and qualification of midwife assessing the pregnant women	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.108 ^a	1	.292				60.58 ^a	1	.000		
Continuity Correction ^b	.709	1	.400				59.687	1	.000		
Likelihood Ratio	1.117	1	.291				61.114	1	.000		
Fisher's Exact Test				.303	.200					.000	.000
Linear-by-Linear Association	1.107	1	.293				60.534	1	.000		
N of Valid Cases	1200						1199				

0 cells (.0%) have expected count less than 5.

The minimum expected count is 11.50.0 cells

a. Computed only for a 2x2 table

0 cells (.0%) have expected count less than 5.

The minimum expected count is 279.77.

b. Computed only for a 2x2 table

Full name and signature of midwife counterchecking the card		yes	no	Total
Health Authority	Municipal	8(1.3%)	592(98.7%)	600(100%)
	Provincial	14(2.3%)	586 (97.7%)	600(100%)
Total		22(1.8%)	1178 (98.2%)	1200(100%)

Crosstab

Full name and qualification of midwife assessing the pregnant women		yes	no	1178 (98.2%)
Health Authority Municipal	Count	8	592	600
	Expected Count	11.0	589.0	600.0
	Std. Residual	-.9	.1	
Provincial	Count	14	586	600
	Expected Count	11.0	589.0	600.0
	Std. Residual	.9	-.1	
Total	Count		22	1178
	Expected Count		22.0	1178.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.667 ^a	1	.197		
Continuity Correction ^b	1.158	1	.282		
Likelihood Ratio	1.688	1	.194		
Fisher's Exact Test				.206	.141
Linear-by-Linear Association	1.666	1	.197		
N of Valid Cases	1200				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.00.

b. Computed only for a 2x2 table

First visit consultation

All tests and procedures due in the first visit done		yes	no	Total	ANC plan in line with all clinical findings	yes	no	Total
Health Authority	Municipal	570	20	600(100%)		220	6	600(100%)
	Provincial	563	22	600(100%)	Provincial	316	17	600(100%)
Total		1133	42	1200(100%)	Total	536	23	1200(100%)

Crosstab

All tests and procedures due in the first visit done			yes	no	Total	ANC plan in line with all clinical findings	yes	no	Total
Health Authority	Municipal	Count	570	20	590	Municipal	220	6	226
		Expected Count	568.9	21.1	590.0		216.7	9.3	226.0
		Std. Residual	.0	-.2			.2	-1.1	
	Provincial	Count	563	22	585	Provincial	316	17	333
		Expected Count	564.1	20.9	585.0		319.3	13.7	333.0
		Std. Residual	.0	.2			-.2	.9	
Total		Count	1133	42	1175		536	23	559
		Expected Count	1133.0	42.0	1175.0		536.0	23.0	559.0

Chi-Square Tests

All tests and procedures due in the first visit done	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	ANC plan in line with all clinical findings	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.117 ^a	1	.732				2.049 ^a	1	.152		
Continuity Correction ^b	.034	1	.853				1.475	1	.225		
Likelihood Ratio	.117	1	.732				2.161	1	.142		
Fisher's Exact Test				.756	.427					.194	.111
Linear-by-Linear Association	.117	1	.732				2.045	1	.153		
N of Valid Cases	1175						559				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 20.91.

b. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.30.

c. Computed only for a 2x2 table

ANC plan implemented		yes	no	Total		Advice given to the pregnant women in line with clinical findings and ANC plan	yes	no	Total
Health Authority	Municipal	225(100%)	0(0%)	225(100%)		Municipal	205(56.6%)	157(43.4%)	362(100%)
	KZNPA	315 (94.0%)	20(6.0%)	335(100%)		KZNPA	393(75.0%)	131(25.0%)	524(100%)
Total		540(96.4%)	20 (3.6%)	560(100%)			598(67.5%)	288(32.5%)	886 (100%)

Crosstab

ANC plan implemented			yes	no	Total	Advice given to the pregnant women in line with clinical findings and ANC plan	yes	no	Total
Health Authority	Municipal	Count	225	0	225	Municipal	205	157	362
		Expected Count	217.0	8.0	225.0		244.3	117.7	362.0
		Std. Residual	.5	-2.8			-2.5	3.6	
	Provincial	Count	315	20	335	Provincial	393	131	524
		Expected Count	323.0	12.0	335.0		353.7	170.3	524.0
		Std. Residual	-.4	2.3			2.1	-3.0	
Total		Count	540	20	560		598	288	886
		Expected Count	540.0	20.0	560.0		598.0	288.0	886.0

Chi-Square Tests

						Advice given to the pregnant women in line with clinical findings and ANC plan					
ANC plan implemented	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)		Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	13.930 ^a	1	.000				32.931 ^a	1	.000		
Continuity Correction ^b	12.251	1	.000				32.099	1	.000		
Likelihood Ratio	21.048	1	.000				32.680	1	.000		
Fisher's Exact Test				.000	.000					.000	.000
Linear-by-Linear Association	13.905	1	.000				32.894	1	.000		
N of Valid Cases	560						886				

b. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 8.04.

b. Computed only for a 2x2 table

d. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 117.67.

e. Computed only for a 2x2 table

Assessment done whether the woman is eligible for the BANC approach		yes	no	Total		Schedule of next visit according to BANC guidelines	yes	no	Total
Health Authority	Municipal	180(30.0%)	420(70.0%)	600(100%)		Municipal	222(38.7%)	352(61.3%)	574(100%)
	Provincial	234(39.1%)	365(60.9%)	599(100%)		Provincial	342(57.2%)	256(42.8%)	598(100%)
Total		414(34.5%)	785(65.5%)	1199(100%)		Total	564(48.1%)	608(51.9%)	1172(100%)

Crosstab

Assessment done whether the woman is eligible for the BANC approach			yes	no	Total	Schedule of next visit according to BANC guidelines	yes	no	Total
Health Authority	Municipal	Count	180	420	600	Municipal	222	352	574
		Expected Count	207.2	392.8	600.0		276.2	297.8	574.0
		Std. Residual	-1.9	1.4			-3.3	3.1	
	Provincial	Count	234	365	599	Provincial	342	256	598
		Expected Count	206.8	392.2	599.0		287.8	310.2	598.0
		Std. Residual	1.9	-1.4			3.2	-3.1	
Total		Count	414	785	1199		564	608	1172
		Expected Count	414.0	785.0	1199.0		564.0	608.0	1172.0

Chi-Square Tests

Assessment done whether the woman is eligible for the BANC approach	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Schedule of next visit according to BANC guidelines	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	10.896 ^a	1	.001				40.215 ^a	1	.000		
Continuity Correction ^b	10.499	1	.001				39.477	1	.000		
Likelihood Ratio	10.919	1	.001				40.458	1	.000		
Fisher's Exact Test				.001	.001					.000	.000
Linear-by-Linear Association	10.887	1	.001				40.181	1	.000		
N of Valid Cases	1199						1172				

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 206.83.

b. Computed only for a 2x2 table

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 276.23.

b. Computed only for a 2x2 table

Follow up visit

All repeat tests done in due time		yes	no	Total		Follow up done on previous abnormal findings	yes	no	Total
Health Authority	Municipal	436(72.7%)	164(27.3%)	600(100%)		Municipal	264(50.4%)	260(49.6%)	524(100%)
	Provincial	442(73.7%)	158(26.3%)	600(100%)		Provincial	318(67.7%)	152(32.3%)	470(100%)
Total		878(73.2%)	322(26.8%)	1200(100%)		Total	582(58.6%)	412(41.4%)	994(100%)

Crosstab

All repeat tests done in due time			Yes	No	Total	Follow up done on previous findings	Yes	No	Total
Health Authority	Municipal	Count	436	164	600	Municipal	264	260	524
		Expected Count	439.0	161.0	600.0		306.8	217.2	524.0
		Std. Residual	-.1	.2			-2.4	2.9	
	Provincial	Count	442	158	600	Provincial	318	152	470
		Expected Count	439.0	161.0	600.0		275.2	194.8	470.0
		Std. Residual	.1	-.2			2.6	-3.1	
Total		Count	878	322	1200		582	412	994
		Expected Count	878.0	322.0	1200.0		582.0	412.0	994.0

Chi-Square Tests

Assessment done whether the woman is eligible for the BANC approach	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Schedule of next visit according to BANC guidelines	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.153 ^a	1	.696				30.477 ^a	1	.000		
Continuity Correction ^b	.106	1	.745				29.770	1	.000		
Likelihood Ratio	.153	1	.696				30.727	1	.000		
Fisher's Exact Test				.745	.372					.000	.000
Linear-by-Linear Association	.153	1	.696				30.447	1	.000		
N of Valid Cases	1200						994				

a. 0 cells (.0%) have expected count less than 5.

The minimum expected count is 161.00

c. Computed only for a 2x2 table

d. 0 cells (.0%) have expected count less than 5.

The minimum expected count is 194.81.

e. Computed only for a 2x2 table

Assessment for conditions

Pre-eclampsia		Yes	No	Total		Anaemia and malnutrition	Yes	No	Total
Health Authority	Municipal	600(100%)	0(0%)	600(100%)		Municipal	324(54.0%)	276(46.0%)	600(100%)
	Provincial	592(99.0%)	6(1.0%)	598(100%)		Provincial	408(68.1%)	191(31.9%)	599(100%)
Total		1192(99.5%)	6(0.5%)	1198(100%)		Total	732(61.1%)	467(38.9%)	1199(100%)

Crosstab

Pre-eclampsia			yes	no	Total	Anaemia and malnutrition	yes	no	Total
Health Authority	Municipal	Count	600	0	600	Municipal	324	276	600
		Expected Count	597.0	3.0	600.0		366.3	233.7	600.0
		Std. Residual	.1	-1.7			-2.2	2.8	
	Provincial	Count	592	6	598	Provincial	408	191	599
		Expected Count	595.0	3.0	598.0		365.7	233.3	599.0
		Std. Residual	-.1	1.7			2.2	-2.8	
Total		Count	1192	6	1198		732	467	1199
		Expected Count	1192.0	6.0	1198.0		732.0	467.0	1199.0

Chi-Square Tests

Pre-eclampsia	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Anaemia and malnutrition	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.050 ^a	1	.014				25.110 ^a	1	.000		
Continuity Correction ^b	4.204	1	.040				24.520	1	.000		
Likelihood Ratio	8.368	1	.004				25.217	1	.000		
Fisher's Exact Test				.015	.015					.000	.000
Linear-by-Linear Association	6.045	1	.014				25.089	1	.000		
N of Valid Cases	1198						1199				

b. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 2.99

b. Computed only for a 2x2 table

f. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 233.31.

g. Computed only for a 2x2 table

Foetal growth and post maturity		yes	no	Total	HIV infection		yes	no	Total
Health Authority	Municipal	399(66.5%)	201 (33.5%)	600(100%)	Municipal	589(98.3%)	10(1.7%)	599 (100%)	
	Provincial	407(67.8%)	193(32.2%)	600(100%)	Provincial	596(99.3%)	4(0.7%)	600 (100%)	
	Total	806(67.2%)	394(32.8%)	1200(100%)	Total	1185(98.8%)	14(1.2%)	1199(100%)	

Crosstab

Foetal growth and post maturity		yes	no	Total	HIV infection		yes	no	Total
Health Authority	Municipal	Count	399	201	600	Municipal	589	10	599
		Expected Count	403.0	197.0	600.0		592.0	7.0	599.0
		Std. Residual	-.2	.3			-.1	1.1	
	Provincial	Count	407	193	600	Provincial	596	4	600
		Expected Count	403.0	197.0	600.0		593.0	7.0	600.0
		Std. Residual	.2	-.3			.1	-1.1	
Total		Count	806	394	1200		1185	14	1199
		Expected Count	806.0	394.0	1200.0		1185.0	14.0	1199.0

Chi-Square Tests

Foetal growth and post maturity	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	HIV infection	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.242 ^a	1	.623				2.612 ^a	1	.106		
Continuity Correction ^b	.185	1	.667				1.815	1	.178		
Likelihood Ratio	.242	1	.623				2.697	1	.101		
Fisher's Exact Test				.667	.334					.116	.088
Linear-by-Linear Association	.242	1	.623				2.610	1	.106		
N of Valid Cases	1200						1199				

c. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 197.00

b. Computed only for a 2x2 table

h. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 6.99.

i. Computed only for a 2x2 table

Congenital abnormality		yes	no	Total		Foetal movements	yes	no	Total
Health Authority	Municipal	277(46.2%)	323(53.8%)	600(100%)		Municipal	522(87.3%)	76(12.7%)	598 (100%)
	Provincial	406 (67.7%)	194(32.3%)	600(100%)		Provincial	531(88.8%)	67(11.2%)	598(100%)
	Total	683(56.9%)	517(43.1%)	1200(100%)		Total	1053(88.0%)	143(12.0%)	1196(100%)

Crosstab

Congenital abnormality			yes	no	Total	Foetal movements	yes	no	Total
Health Authority	Municipal	Count	277	323	600	Municipal	522	76	598
		Expected Count	341.5	258.5	600.0		526.5	71.5	598.0
		Std. Residual	-3.5	4.0			-.2	.5	
	Provincial	Count	406	194	600	Provincial	531	67	598
		Expected Count	341.5	258.5	600.0		526.5	71.5	598.0
		Std. Residual	3.5	-4.0			.2	-.5	
Total		Count	683	517	1200		1053	143	1196
		Expected Count	683.0	517.0	1200.0		1053.0	143.0	1196.0

Chi-Square Tests

Congenital abnormality	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Fetal movements	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	56.552 ^a	1	.000				.643 ^a	1	.422		
Continuity Correction	55.679	1	.000				.508	1	.476		
Likelihood Ratio	57.042	1	.000				.644	1	.422		
Fisher's Exact Test				.000	.000					.476	.238
Linear-by-Linear Association	56.505	1	.000				.643	1	.423		
N of Valid Cases	1200						1196				

d. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 258.50

b. Computed only for a 2x2 table

j. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 71.50.

k. Computed only for a 2x2 table

Activity Done

HISTORY		Yes	Total		ROUTINE INVESTIGATIONS	Yes	No	Total
Health Authority	Municipal	600	600 (100%)		Municipal	525(87.6%)	74(12.4%)	599(100%)
	Provincial	600	600 (100%)		Provincial	523(87.2%)	77(12.8%)	600 (100%)
	Total	1200	1200 (100%)		Total	1048((87.4%)	151(12.6%)	1199 (100%)

OTHER INVESTIGATIONS		Yes	No	Total		INFORMED CONSENT FOR RVD	Yes	No	Total
Health Authority	Municipal	331(70.7%)	137(29.3%)	468 (100%)		Municipal	193(33.3%)	386(66.7%)	579 (100%)
	KZNPA	282(62.9%)	166(37.1%)	448 (100%)		Provincial	118(20.0%)	471(80.0%)	589 (100%)
	Total	613(66.9%)	303(33.1%)	916 (100%)		Total	311(26.6%)	857(73.4%)	1168 (100%)

HIV TESTING		Yes	No	Total		TB SCREENING	Yes	No	Total
Health Authority	Municipal	587(97.8%)	1(2.2%)	588 (100%)		Municipal	342(57.0%)	258 (43.0%)	600 (100%)
	Provincial	587(97.8%)	13(2.2%)	600 (100%)		Provincial	292 (46.7%)	307(51.3%)	600 (100%)
Total		1174(97.8%)	26(2.2%)	1200 (100%)		Total	634(52.8%)	565(47.2%)	1200 (100%)

FULL PHYSICAL EXAMINATION		Yes	No	Total		PAP SMEAR	Yes	No	Total
Health Authority	Municipal	523(87.2%)	77(12.8%)	600 (100%)		Municipal	230(48.9%)	240(51.1%)	470(100%)
	Provincial	560(93.3%)	40 (6.7%)	600 (100%)		Provincial	232(53.7%)	200(46.3%)	432 (100%)
Total		1083(90.3%)	117(9.7%)	1200 (100%)		Total	462(51.2%)	440(48.8%)	902 (100%)

VAGINAL EXAMINATION		Yes	No	Total		ULTRA SOUND	Yes	No	Total
Health Authority	Municipal	361(60.6%)	235(39.4%)	596 (100%)		Municipal	268((44.7%)	332(55.3%)	600 (100%)
	Provincial	468(78.8%)	126(21.2%)	594(100%)		Provincial	406(67.7%)	194 (32.3%)	600 (100%)
Total		829(69.7%)	361(30.3%)	1190 (100%)		Total	674(56.2%)	526(43.8%)	1200 (100%)

CALCIUM SUPPLEMENTS		yes	no	Total
Health Authority	Municipal	512 (85.3%)	88 (14.7%)	600 (100%)
	Provincial	519 (86.5%)	81 (13.5%)	600 (100%)
Total		1031(85.9%)	169 (14.1%)	1200 (100%)

Crosstab

HIV			yes	no	Total	TB	yes	no	Total
Health Authority	Municipal	Count	587	13	600	Municipal	342	258	600
		Expected Count	587.0	13.0	600.0		317.3	282.7	600.0
		Std. Residual	.0	.0			1.4	-1.5	
	Provincial	Count	587	13	600	Provincial	292	307	599
		Expected Count	587.0	13.0	600.0		316.7	282.3	599.0
		Std. Residual	.0	.0			-1.4	1.5	
Total		Count	1174	26	1200		634	565	1199

Chi-Square Tests

HIV		Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	TB	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square		.000 ^a	1	1.000				8.192 ^a	1	.004		
Continuity Correction ^b		.000	1	1.000				7.864	1	.005		
Likelihood Ratio		.000	1	1.000				8.201	1	.004		
Fisher's Exact Test					1.000	.578					.005	.003
Linear-by-Linear Association		.000	1	1.000				8.185	1	.004		
N of Valid Cases		1200						1199				

e. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 13.00

b. Computed only for a 2x2 table

l. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 282.26.

m. Computed only for a 2x2 table

PHYSICAL EXAM			yes	no	Total	PAP SMEAR	yes	no	Total
Health Authority	Municipal	Count	523	77	600	Municipal	230	240	470
		Expected Count	541.5	58.5	600.0		240.7	229.3	470.0
		Std. Residual	-.8	2.4			-.7	.7	
	Provincial	Count	560	40	600	Provincial	232	200	432
		Expected Count	541.5	58.5	600.0		221.3	210.7	432.0
		Std. Residual	.8	-2.4			.7	-.7	
Total		Count	1083	117	1200		462	440	902
		Expected Count	1083.0	117.0	1200.0		462.0	440.0	902.0

Chi-Square Tests

PHYSICAL EXAM		Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	PA P SM EA R	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square		12.965 ^a	1	.000				2.048 ^a	1	.152		
Continuity Correction		12.274	1	.000				1.861	1	.172		
Likelihood Ratio		13.168	1	.000				2.049	1	.152		
Fisher's Exact Test					.000	.000					.162	.086
Linear-by-Linear Association		12.954	1	.000				2.045	1	.153		
N of Valid Cases		1200						902				

f. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 58.50

b. Computed only for a 2x2 table

n. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 210.73.

o. Computed only for a 2x2 table

Crosstab

VAGINAL EXAM			yes	no	Total	Ultra Sound	yes	no	Total
Health Authority	Municipal	Count	361	235	596	Municipal	268	332	600
		Expected Count	415.2	180.8	596.0		337.0	263.0	600.0
		Std. Residual	-2.7	4.0			-3.8	4.3	
	Provincial	Count	468	126	594	Provincial	406	194	600
		Expected Count	413.8	180.2	594.0		337.0	263.0	600.0
		Std. Residual	2.7	-4.0			3.8	-4.3	
Total		Count	829	361	1190		674	526	1200
		Expected Count	829.0	361.0	1190.0		674.0	526.0	1200.0

Chi-Square Tests

VAGINAL EXAM	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Ultra Sound	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	46.719 ^a	1	.000				64.461 ^a	1	.000		
Continuity Correction ^b	45.861	1	.000				63.530	1	.000		
Likelihood Ratio	47.276	1	.000				65.089	1	.000		
Fisher's Exact Test				.000	.000					.000	.000
Linear-by-Linear Association	46.679	1	.000				64.407	1	.000		
N of Valid Cases	1190						1200				

g. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 180.20
b. Computed only for a 2x2 table

p. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 210.73.
q. Computed only for a 2x2 table

Crosstab

CALCIUM			yes	no	Total
Health Authority	Municipal	Count	512	88	599
		Expected Count	515.1	83.9	599.0
		Std. Residual	-.1	.3	
	Provincial	Count	519	81	600
		Expected Count	515.9	84.1	600.0
		Std. Residual	.1	-.3	
Total		Count	1031	169	1199
		Expected Count	1031.0	169.0	1199.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.261 ^a	1	.609		
Continuity Correction ^b	.183	1	.669		
Likelihood Ratio	.261	1	.609		
Fisher's Exact Test				.619	.334
Linear-by-Linear Association	.261	1	.610		
N of Valid Cases	1199				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 83.93.

c. Computed only for a 2x2 table

Date Recorded

HISTORY		Yes	Total		ROUTINE INVESTIGATIONS	Yes	No	Total
Health Authority	Municipal	600 (100%)	600(100%)		Municipal	597(99.5%)	3 (0.5%)	600 (100%)
	Provincial	600 (100%)	600(100%)		Provincial	599 (99.8%)	1 (0.2%)	600 (100%)
Total		1200 (100%)	1200(100%)		Total	1196(99.7%)	4 (0.3%)	1200 (100%)

OTHER INVESTIGATIONS		Yes	No	Total		INFORMED CONSENT FOR HIV	Yes	Total
Health Authority	Municipal	316(99.4%)	2 (0.6%)	318(100%)		Municipal	193 (100%)	193 (100%)
	Provincial	283 (100%)	0 (0%)	283 (100%)		Provincial	114 (100%)	114 (100%)
Total		599(99.7%)	2(0.3%)	601 (100%)		Total	307 (100%)	307 (100%)

HIV TESTING		Yes	Total		TB SCREENING	Yes	No	Total
Health Authority	Municipal	592 (100%)	592 (100%)		Municipal	346(99.7%)	1 (0.3%)	347(100%)
	Provincial	591 (100%)	591 (100%)		Provincial	294 (99.7%)	1 (0.3%)	295 (100%)
Total		1183 (100%)	1183 (100%)		Total	640 (99.7%)	2 (0.3%)	642 (100%)

FULL PHYSICAL EXAMINATION		yes	Total		PAP SMEAR	Yes	No	Total
Health Authority	Municipal	600 (100%)	600 (100%)		Municipal	228(99.6%)	1 (0.4%)	229(100%)
	Provincial	597 (100%)	597 (100%)		Provincial	231(99.1%)	2 (0.9%)	233 (100%)
Total		1197 (100%)	1197 (100%)		Total	459 (99.4%)	3 (0.6%)	462 (100%)

VAGINAL EXAMINATION		yes	no	Total		ULTRA SOUND	Yes	No	Total
Health Authority	Municipal	358 (99.4%)	2 (0.6%)	360 (100%)		Municipal	258(99.2%)	2(0.8%)	260(100%)
	Provincial	469 (100%)	0 (0%)	469(100%)		Provincial	392 (100%)	0 (0%)	392 (100%)
Total		827 (99.8%)	2 (0.2%)	829 (100%)		Total	650 (99.7%)	2 (0.3%)	652 (100%)

CALCIUM SUPPLEMENTS		yes	no	Total
Health Authority	Municipal	511 (85.2%)	89 (14.8%)	600 (100%)
	Provincial	519 (86.5%)	81 (13.5%)	600 (100%)
Total		1030(85.8%)	170(14.2%)	1200 (100%)

HISTORY			yes	Total	ROUTINE INVESTIGATIONS	yes	Total
Health Authority	Municipal	Count	600	600	Municipal	600	600
		Expected Count	600.0	600.0		600.0	600.0
		Std. Residual	.0			.0	
	Provincial	Count	600	600	Provincial	600	600
		Expected Count	600.0	600.0		600.0	600.0
		Std. Residual	.0			.0	
Total		Count	1200	1200		1200	1200
		Expected Count	1200.0	1200.0		1200.0	1200.0

. No statistics are computed because Date recorded is a constant.

HIV			yes	Total	PHYSICAL EXAM	yes	Total
Health Authority	Municipal	Count	592	592	Municipal	600	600
		Expected Count	592.0	592.0		600.0	600.0
		Std. Residual	.0			.0	
	Provincial	Count	591	591	Provincial	597	597
		Expected Count	591.0	591.0		597.0	597.0
		Std. Residual	.0			.0	
Total		Count	1183	1183		1197	1197
		Expected Count	1183.0	1183.0		1197.0	1197.0

No statistics are computed because Date recorded is a constant.

CALCIUM			yes	Total
Health Authority	Municipal	Count	511	511
		Expected Count	511.0	511.0
		Std. Residual	.0	
	Provincial	Count	519	519
		Expected Count	519.0	519.0
		Std. Residual	.0	
Total		Count	1030	1030
		Expected Count	1030.0	1030.0

No statistics are computed because Date recorded is a constant.

TB			yes	no	Total	PAP SMEAR	yes	no	Total
Health Authority	Municipal	Count	346	1	347	Municipal	228	1	229
		Expected Count	345.9	1.1	347.0		227.5	1.5	229.0
		Std. Residual	.0	.0			.0	-.4	
	Provincial	Count	294	1	295	Provincial	231	2	233
		Expected Count	294.1	.9	295.0		231.5	1.5	233.0
		Std. Residual	.0	.1			.0	.4	
Total		Count	640	2	642		459	3	462
		Expected Count	640.0	2.0	642.0		459.0	3.0	462.0

TB	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	PAP SMEAR	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.013 ^a	1	.908				.318 ^a	1	.573		
Continuity Correction ^b	.000	1	1.000				.000	1	1.000		
Likelihood Ratio	.013	1	.909				.325	1	.569		
Fisher's Exact Test				1.000	.708					1.000	.507
Linear-by-Linear Association	.013	1	.908				.318	1	.573		
N of Valid Cases	642						462				

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is .92.

b. Computed only for a 2x2 table

a. 0 cells (.0%) have expected count less than 5.

The minimum expected count is 1.49

b. Computed only for a 2x2 table

VAGINAL EXAMINATION			yes	no	Total	ULTRA SOUND	yes	no	Total
Health Authority	Municipal	Count	358	2	360	Municipal	258	2	260
		Expected Count	359.1	.9	360.0		259.2	.8	260.0
		Std. Residual	.0	1.2			.0	1.3	
	Provincial	Count	469	0	469	Provincial	392	0	392
		Expected Count	467.9	1.1	469.0		390.8	1.2	392.0
		Std. Residual	.1	-1.1			.1	-1.1	
Total		Count	827	2	829		650	2	652
		Expected Count	827.0	2.0	829.0		650.0	2.0	652.0

VAGINAL EXAMINATION	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	U/S	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.612 ^a	1	.106				3.025 ^a	1	.082		
Continuity Correction ^b	.814	1	.367				1.032	1	.310		
Likelihood Ratio	3.343	1	.068				3.687	1	.055		
Fisher's Exact Test				.188	.188					.159	.159
Linear-by-Linear Association	2.609	1	.106				3.020	1	.082		
N of Valid Cases	829						652				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is .87.

b. Computed only for a 2x2 table

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is .80 Computed only for a 2x2 table

Results recorded

HISTORY		yes	no	Total
Health Authority	Municipal	599 (99.8%)	1 (0.2%)	600(100%)
	Provincial	600(100%)	0 (0%)	600(100%)
Total		1199(99.9%)	1 (0.1%)	1200(100%)

ROUTINE INVESTIGATIONS				Total		OTHER INVESTIGATIONS			Total
		yes	no				yes	no	
Health Authority	Municipal	554 (92.3%)	46 (7.7%)	600(100%)		Municipal	230(72.3%)	88 (27.7%)	318(100%)
	Provincial	587 (97.8%)	13 (2.2%)	600(100%)		Provincial	243 (85.9%)	40(14.1%)	283(100%)
Total		1141 (95.1%)	59(4.9%)	1200(100%)		Total	473(78.7%)	128 (21.3%)	601(100%)

HIV TESTING		yes	Total		TB SCREENING	yes	no	Total
Health Authority	Municipal	592(100%)	592(100%)		Municipal	291 (84.1%)	55 (15.9%)	346(100%)
	Provincial	591(100%)	591(100%)		Provincial	263 (89.5%)	31 (10.5%)	294(100%)
Total		1183(100%)	1183(100%)		Total	554 (86.6%)	86 (13.4%)	640(100%)

FULL PHYSICAL EXAMINATION		yes	no	Total		PAP SMEAR	yes	no	Total
Health Authority	Municipal	600(100%)	0 (0%)	600(100%)		Municipal	73 (32.2%)	154 (67.8%)	227(100%)
	Provincial	599 (99.8%)	1 (0.2%)	600(100%)		Provincial	124 (53.4%)	108(46.6%)	232(100%)
Total		1199(99.9%)	1 (0.1%)	1200(100%)		Total	197 (42.9%)	262(57.1%)	459(100%)

VAGINAL EXAMINATION		yes	no	Total		ULTRA SOUND	yes	no	Total
Health Authority	Municipal	357 (99.2%)	3 (0.8%)	360(100%)		Municipal	223(86.1%)	36 (13.9%)	259(100%)
	Provincial	469(100%)	0 (0%)	469(100%)		Provincial	378(96.4%)	14 (3.6%)	392(100%)
Total		826 (99.6%)	3 (0.4%)	829(100%)		Total	601 (92.3%)	50 (7.7%)	651(100%)

HIV			yes	Total
Health Authority	Municipal	Count	592	592
		Expected Count	592.0	592.0
		Std. Residual	.0	.0
	Provincial	Count	591	591
		Expected Count	591.0	591.0
		Std. Residual	.0	.0
Total		Count	1183	1183
		Expected Count	1183.0	1183.0

No statistics are computed because Results recorded is a constant.

ROUTINE INVESTIGATIONS			yes	no	Total	TB	yes	no	Total
Health Authority	Municipal	Count	599	1	600	Municipal	291	55	346
		Expected Count	599.5	.5	600.0		299.5	46.5	346.0
		Std. Residual	.0	.7			-.5	1.2	
	Provincial	Count	600	0	600	Provincial	263	31	294
		Expected Count	599.5	.5	600.0		254.5	39.5	294.0
		Std. Residual	.0	-.7			.5	-1.4	
Total		Count	1199	1	1200		554	86	640
		Expected Count	1199.0	1.0	1200.0		554.0	86.0	640.0

ROUTINE INVESTIGATIONS	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	PAP SMEAR	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.001 ^a	1	.317				3.914 ^a	1	.048		
Continuity Correction ^b	.000	1	1.000				3.467	1	.063		
Likelihood Ratio	1.387	1	.239				3.974	1	.046		
Fisher's Exact Test				.500	.500					.049	.031
Linear-by-Linear Association	1.000	1	.317				3.908	1	.048		
N of Valid Cases	1200						640				

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is .50.

b. Computed only for a 2x2 table

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 39.51
b. Computed only for a 2x2 table

PHYSICAL EXAMINATION			yes	no	Total	PAP SMEAR	yes	no	Total
Health Authority	Municipal	Count	600	0	600	Municipal	73	154	227
		Expected Count	599.5	.5	600.0		97.4	129.6	227.0
		Std. Residual	.0	-.7			-2.5	2.1	
	Provincial	Count	596	1	597	Provincial	124	108	232
		Expected Count	596.5	.5	597.0		99.6	132.4	232.0
		Std. Residual	.0	.7			2.4	-2.1	
Total		Count	1196	1	1197		197	262	459
		Expected Count	1196.0	1.0	1197.0		197.0	262.0	459.0

PHYSICAL EXAMINATION	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	PAP SMEAR	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.006 ^a	1	.316				21.227 ^a	1	.000		
Continuity Correction ^b	.000	1	.998				20.367	1	.000		
Likelihood Ratio	1.392	1	.238				21.419	1	.000		
Fisher's Exact Test				.499	.499					.000	.000
Linear-by-Linear Association	1.005	1	.316				21.181	1	.000		
N of Valid Cases	1197						459				

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is .50

b. Computed only for a 2x2 table

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 97.53

b. Computed only for a 2x2 table

VAGINAL EXAMINATION			yes	no	Total	ULTRA SOUND	yes	no	Total
Health Authority	Municipal	Count	357	3	360	Municipal	223	36	259
		Expected Count	358.7	1.3	360.0		239.1	19.9	259.0
		Std. Residual	.0	1.5			-1.0	3.6	
	Provincial	Count	469	0	469	Provincial	378	14	392
		Expected Count	467.3	1.7	469.0		361.9	30.1	392.0
		Std. Residual	.1	-1.3			.8	-2.9	
Total		Count	826	3	829		601	50	651
		Expected Count	826.0	3.0	829.0		601.0	50.0	651.0

VAGINAL EXAMINATION	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	ULTRA SOUND	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.923 ^a	1	.048				23.462 ^a	1	.000		
Continuity Correction ^b	1.952	1	.162				22.028	1	.000		
Likelihood Ratio	5.019	1	.025				23.086	1	.000		
Fisher's Exact Test				.082	.082					.000	.000
Linear-by-Linear Association	3.918	1	.048				23.426	1	.000		
N of Valid Cases	829						651				

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 1.30.

b. Computed only for a 2x2 table

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 19.89

b. Computed only for a 2x2 table

Action on abnormal findings recorded

HISTORY		yes	no	Total		ROUTINE INVESTIGATIONS		yes	no	Total
Health Authority	Municipal	97	23	600		Municipal		128	27	600
	Provincial	59	17	600		Provincial		135	22	600
Total		156	40	1200		Total		263	49	1200

OTHER INVESTIGATIONS		yes	no	Total		HIV TESTING	yes	no	Total
Health Authority	Municipal	60(75.0%)	20 (25.0%)	80(100%)		Municipal	238 (99.2%)	2 (0.8%)	240(100%)
	Provincial	132(93.6%)	9 (6.4%)	141(100%)		Provincial	247 (99.6%)	1(0.4%)	248(100%)
Total		192 ((86.9%)	29(13.1%)	221(100%)		Total	485(99.4%)	3(0.6%)	488(100%)

TB SCREENING		yes	no	Total		PHYSICAL EXAMINATION	yes	no	Total
Health Authority	Municipal	40(29.7%)	108 (70.3%)	148(100%)		Municipal	31(86.1%)	5(13.9%)	36(100%)
	Provincial	88((63.8%)	50(36.2%)	138(100%)		Provincial	61(81.3%)	14(18.7%)	75(100%)
Total		128(44.8%)	158(55.2%)	286(100%)		Total	92 ((82.9%)	19(17.1%)	111(100%)

PAP SMEAR		yes	no	Total		VAGINAL EXAMINATION	yes	no	Total
Health Authority	Municipal	8(80.0%)	2(20.0%)	10(100%)		Municipal	139 (98.6%)	2 (1.4%)	141(100%)
	Provincial	22(84.6%)	4 (15.4%)	26(100%)		Provincial	171(91.9%)	15(8.1%)	186(100%)
Total		30 (83.3%)	6(16.7%)	36(100%)		Total	310 (94.8%)	17 (5.2%)	327(100%)

ULTRA SOUND		yes	no	Total
Health Authority	Municipal	7 (87.5%)	1(12.5%)	8(100%)
	Provincial	11 (100%)	0 (0%)	11(100%)
Total		18 (94.7%)	1(5.3%)	19(100%)

ROUTINE INVESTIGATIONS			yes	no	Total	HIV	yes	no	Total
Health Authority	Municipal	Count	97	23	120	Municipal	238	2	240
		Expected Count	95.5	24.5	120.0		238.5	1.5	240.0
		Std. Residual	.2	-.3			.0	.4	
	Provincial	Count	59	17	76	Provincial	247	1	248
		Expected Count	60.5	15.5	76.0		246.5	1.5	248.0
		Std. Residual	-.2	.4			.0	-.4	
Total		Count	156	40	196		485	3	488
		Expected Count	156.0	40.0	196.0		485.0	3.0	488.0

ROUTINE INVESTIGATIONS	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	HIV	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.294 ^a	1	.588				.369 ^a	1	.543		
Continuity Correction ^b	.130	1	.719				.001	1	.977		
Likelihood Ratio	.291	1	.589				.376	1	.540		
Fisher's Exact Test				.591	.357					.618	.488
Linear-by-Linear Association	.292	1	.589				.369	1	.544		
N of Valid Cases	196						488				

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 15.51.

b. Computed only for a 2x2 table

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 1.48

b. Computed only for a 2x2 table

TB			yes	no	Total	PHYSICAL EXAMINATION	yes	no	Total
Health Authority	Municipal	Count	40	108	148	Municipal	31	5	36
		Expected Count	66.2	81.8	148.0		29.8	6.2	36.0
		Std. Residual	-3.2	2.9			.2	-.5	
	Provincial	Count	88	50	138	Provincial	61	14	75
		Expected Count	61.8	76.2	138.0		62.2	12.8	75.0
		Std. Residual	3.3	-3.0			-.1	.3	
Total		Count	128	158	286		92	19	111
		Expected Count	128.0	158.0	286.0		92.0	19.0	111.0

TB	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)		Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	38.989 ^a	1	.000				.391 ^a	1	.532		
Continuity Correction ^b	37.517	1	.000				.127	1	.722		
Likelihood Ratio	39.895	1	.000				.403	1	.525		
Fisher's Exact Test				.000	.000					.601	.368
Linear-by-Linear Association	38.853	1	.000				.388	1	.533		
N of Valid Cases	286						111				

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 61.76.

b. Computed only for a 2x2 table

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.16

b. Computed only for a 2x2 table

PAP SMEAR			yes	no	Total	VAGINAL EXAMINATION	yes	no	Total
Health Authority	Municipal	Count	8	2	10	Municipal	139	2	141
		Expected Count	8.3	1.7	10.0		133.7	7.3	141.0
		Std. Residual	-.1	.3			.5	-2.0	
	Provincial	Count	22	4	26	Provincial	171	15	186
		Expected Count	21.7	4.3	26.0		176.3	9.7	186.0
		Std. Residual	.1	-.2			-.4	1.7	
Total		Count	30	6	36		310	17	327
		Expected Count	30.0	6.0	36.0		310.0	17.0	327.0

PAP SMEAR	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	VAGINAL EXAMINATION	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.111 ^a	1	.739				7.188 ^a	1	.007		
Continuity Correction ^b	.000	1	1.000				5.903	1	.015		
Likelihood Ratio	.108	1	.743				8.349	1	.004		
Fisher's Exact Test				1.000	.544					.010	.005
Linear-by-Linear Association	.108	1	.743				7.166	1	.007		
N of Valid Cases	36						327				

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 1.67.

b. Computed only for a 2x2 table

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 7.33

b. Computed only for a 2x2 table

ULTRA SOUND			Yes	No	Total
Health Authority	Municipal	Count	7	1	8
		Expected Count	7.6	.4	8.0
		Std. Residual	-.2	.9	
	Provincial	Count	11	0	11
		Expected Count	10.4	.6	11.0
		Std. Residual	.2	-.8	
Total		Count	18	1	19
		Expected Count	18.0	1.0	19.0

ULTRA SOUND	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.451 ^a	1	.228		
Continuity Correction ^b	.027	1	.870		
Likelihood Ratio	1.807	1	.179		
Fisher's Exact Test				.421	.421
Linear-by-Linear Association	1.375	1	.241		
N of Valid Cases	19				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is .42.

b. Computed only for a 2x2 table

Repeated in due time

Routine investigations		yes	no	Total		HIV TESTING	yes	no	Total
Health Authority	Municipal	434 (72.6%)	164(27.4%)	598(100%)		Municipal	257(72.6%)	97(27.4%)	354(100%)
	Provincial	464(77.5%)	135(22.5%)	599(100%)		Provincial	262(75.1%)	87(24.9%)	349(100%)
	Total	898(75.0%)	299(25.0%)	1197(100%)		Total	519(73.8%)	184(26.2%)	703(100%)

CALCIUM SUPPLEMENTS		yes	no	Total
Health Authority	Municipal	495(96.9%)	16 (3.1%)	511(100%)
	Provincial	423(81.5%)	96(18.5%)	519 (100%)
	Total	918(89.1%)	112 (10.9%)	1030 (100%)

HIV			yes	no	Total	CALCIUM			
Health Authority	Municipal	Count	257	97	354	Municipal	495	16	511
		Expected Count	261.3	92.7	354.0		455.4	55.6	511.0
		Std. Residual	-.3	.5			1.9	-5.3	
	Provincial	Count	262	87	349	Provincial	423	96	519
		Expected Count	257.7	91.3	349.0		462.6	56.4	519.0
		Std. Residual	.3	-.5			-1.8	5.3	
Total		Count	519	184	703		918	112	1030
		Expected Count	519.0	184.0	703.0		918.0	112.0	1030.0

HIV	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	CALCIUM	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.556 ^a	1	.456				62.732 ^a	1	.000		
Continuity Correction ^b	.436	1	.509				61.156	1	.000		
Likelihood Ratio	.556	1	.456				68.990	1	.000		
Fisher's Exact Test				.493	.255					.000	.000
Linear-by-Linear Association	.555	1	.456				62.671	1	.000		
N of Valid Cases	703						1030				

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 91.35.

b. Computed only for a 2x2 table

a. 0 cells (.0%) have expected count less than 5.
The minimum expected count is 55.57
b. Computed only for a 2x2 tabl

Appendix 17: Quantitising qualitative data

a Themes and Sub-Themes

Themes	Sub-Theme
Planning	<ol style="list-style-type: none"> 1. Organisation of ANC service 2. Service days 3. Waiting time 4. Utilization of resources 5. Access to the service
People	<ol style="list-style-type: none"> 1. Skill of the clinic staff 2. Satisfaction with service 3. Opinion about the change 4. Attitude of pregnant women towards care
Performance	<ol style="list-style-type: none"> 1. Completeness of care 2. Missed opportunities 3. Satisfaction of pregnant woman's needs 4. Pregnant woman's trust and confidence on the clinic staff
Process	<ol style="list-style-type: none"> 1. Provision of care 2. Comparison between the old and the new approach
Culture	<ol style="list-style-type: none"> 1. Attitude of the clinic staff towards pregnant women
Communication	<ol style="list-style-type: none"> 1. Giving of information 2. Awareness of the change
Commitment	<ol style="list-style-type: none"> 1. Involvement of pregnant women in own care

b) Interviews Done Per Health Authority

		Frequency	Percent	Valid Percent
Valid	Municipal	27	50.0	50.0
	KZNPA	27	50.0	50.0
	Total	54	100.0	100.0

c) Interviews Done Per PHC Clinic

		Frequency	Percent	Valid Percent
Valid	PS1	4	7.4	7.4
	PS2	5	9.3	9.3
	MS1	4	7.4	7.4
	MS2	3	5.6	5.6
	PN1	5	9.3	9.3
	PN2	3	5.6	5.6
	MN1	5	9.3	9.3
	MN2	5	9.3	9.3
	PW1	5	9.3	9.3
	PW2	5	9.3	9.3
	MW1	5	9.3	9.3
	MW2	5	9.3	9.3
	Total	54	100.0	100.0

c) Data conversion report whole sample

	ACCESS TO THE SERVICE				WAITING TIME		
	Frequency	Percent	Valid Percent		Frequency	Percent	Valid Percent
Happy about	39	72.2	72.2		9	16.7	16.7
Not happy about	15	27.8	27.8		45	83.3	83.3
Total	54	100.0	100.0		54	100.0	100.0

	SATISFACTION WITH SERVICE				SATISFACTION OF PREGNANT WOMAN'S NEEDS		
	Frequency	Percent	Valid Percent		Frequency	Percent	Valid Percent
Satisfied	45	83.3	83.3		42	77.8	79.2
Not satisfied	9	16.7	16.7		11	20.4	20.8
Total	54	100.0	100.0		53	98.1	100.0
Missing System					1	1.9	
Total					54	100.0	

	INVOLVEMENT OF PREGNANT WOMEN IN THEIR CARE				ATTITUDE OF PREGNANT WOMEN TOWARDS CARE		
	Frequency	Percent	Valid Percent		Frequency	Percent	Valid Percent
Involved	1	1.9	1.9	Happy about	46	85.2	88.5
Not involved	53	98.1	98.1	Not happy about	6	11.1	11.5
Total	54	100.0	100.0	Total	52	96.3	100.0
Missing System				Missing System	2	3.7	
Total				Happy about	54	100.0	

	ATTITUDE OF STAFF TOWARDS PREGNANT WOMEN				GIVING INFORMATION		
	Frequency	Percent	Valid Percent		Frequency	Percent	Valid Percent
Happy about	40	74.1	74.1	Information given	38	70.4	70.4
Not happy about	14	25.9	25.9	Information not given	16	29.6	29.6
Total	54	100.0	100.0	Total	54	100.0	100.0

	CHANGE FROM OLD TO THE NEW APPROACH				OPINION ABOUT THE CHANGE		
	Frequency	Percent	Valid Percent		Frequency	Percent	Valid Percent
Change observed	20	37.0	37.0	Happy about	14	25.9	25.9
Change not observed	10	18.5	18.5	Not happy about	6	11.1	11.1
Not applicable	24	44.4	44.4	Not applicable	34	63.0	63.0
Total	54	100.0	100.0	Total	54	100.0	100.0

	MISSED OPPORTUNITIES				ANC SERVICE DAYS		
	Frequency	Percent	Valid Percent		Frequency	Percent	Valid Percent
Some noted	44	81.5	81.5	Every day of the week	5	9.3	9.3
Nothing noted	10	18.5	18.5	Not every day of the week	49	90.7	90.7
Total	54	100.0	100.0	Total	54	100.0	100.0

Appendix 18: Summary of the findings of the current study

INFORMATION	Study Findings
4.3.1 PEOPLE INVOLVED IN THE IMPLEMENTATION OF THE BANC APPROACH	
4.3.1.1 Clients present in the PHC clinics <ul style="list-style-type: none"> Clients seen at the PHC clinics per day Number of clients for repeat ANC visits per day in the PHC clinics 	<ul style="list-style-type: none"> The clients in the PHC clinics consisted of those who came for ANC (11.7%, n=783) and those who came for other health care services (88.3%, n=14 451). A total of clients (1-27 first visit) and (2-150) repeat visits clients were observed in the PHC clinics per day.
4.3.1.2 Staff establishments in the PHC clinics <ul style="list-style-type: none"> Categories of staff present in the PHC clinics Number of staff members providing ANC services 	<ul style="list-style-type: none"> Various categories of staff were present in the PHC clinics (ADMs, midwives, ENs, ENAs, LCs and Clerks). All the provincial PHC clinics had the PNs and ADMs and the municipal ones did not. Different categories of staff except the PNs were involved in provision of the ANC services A total of (14%, n=31) out of 216 midwives in the 12 PHC clinics were involved in provision of ANC services.
4.3.1.3 Clinic managers' availability to provide supportive supervision	<ul style="list-style-type: none"> All twelve clinics included in the study had operational managers. The operational managers were always available to do supportive supervision in their respective PHC clinics during (76.2%, n=45) of the time.
4.3.2 PLANNING FOR THE IMPLEMENTATION OF THE BANC APPROACH	
4.3.2.1 Operating days and times of the PHC clinics	<ul style="list-style-type: none"> Out of the 12 PHC clinics included in the study (25%, n=3) PHC clinics were open seven days a week including public holidays and weekend and were open for 24 hours a day. The other 75%, (n=9) were operating five days a week , closed during public holidays and week end and open for eight hours a day. Out of these 9 a total of (75%, n=60) were Municipal and (25%,n=3) were Provincial.

4.3.1.4 Availability of and access to antenatal care services in the Primary Health Care clinics	<ul style="list-style-type: none"> • Although all PHC clinics except one were providing ANC services every time they were open not all ANC clients were always accepted. ANC clients were always accepted during (51%, n=31) of the time. • All ANC clients were accepted during (67%,n=20) of the time in provincial and (35%, n=10) in municipal health authority • Some PHC clinics were not attending to both first and repeat visit clients each time they were open. This was evident in the statements by the participants as presented in section 4.3.2 of this chapter.
4.3.2.3 Availability and utilisation of resources	<ul style="list-style-type: none"> • Treatments and equipment were always available in the PHC clinics during (83%, n =49) of the time. No differences were observed between health authorities. • The participants commented about dispensing of medications about which they were concerned that they had not been issued with sufficient supplies. • The participants worried about duplication of services where services that had already been provided by the private doctors were repeated in the public sector • The participants stated that they should be getting all the services from the PHC clinics. They were concerned that if they go to the private doctors they had to pay for the maternity care services, yet these were offered for free in the PHC clinics
4.3.2.4 Recording system used for ANC services	<ul style="list-style-type: none"> • A total of (98.4%, n=1 181) maternity case records reviewed were the correct type of card as prescribed by the NDoH. • The (1.6%, n=19) maternity case records that were not correct were all found in the municipal health authority. • The maternity case records were not filled at the PHC clinics but given to the pregnant women to carry all the time in all PHC clinics in both health authorities.
4.3.2.5 Following a clearly defined process map while providing antenatal care services	<ul style="list-style-type: none"> • Clear detailed process maps were followed during (32.2% n=19) during the observations. • This was observed 24%, n=7) in municipal and (40%, n=12) in provincial health authority.
4.3.2.6 Pregnant women's waiting times at the Primary Health Care clinics	<ul style="list-style-type: none"> • The participants raised their concerns about the waiting times in the PHC clinics stating these were too long. • Some of the participants were not very much concerned about the long waiting times but rather how these were handled by the clinic staff. • Other participants were concerned about the amount of time that they spent with the midwives and how soon they were able to see the midwives stating that much time was spent with other categories of clinic staff members.

4.3.2.7 Structure and organisation of the clinic	<ul style="list-style-type: none"> • The participants raised their concerns about the size and structure of the PHC clinic buildings, stating these were too small. • They verbalise how the seating arrangement affected resulted in them missing their turns
4.3.3 PROCESSES INVOLVED DURING IMPLEMENTATION OF THE BANC APPROACH	
4.3.2.1 Administrative processes	<ul style="list-style-type: none"> • One of the administrative processes was observed all the time (100%, n=13). This was conducting the first visit ANC consultation provided on the day when the pregnancy was confirmed or the very first time the pregnant women presented at the clinic. • Two of the administrative processes were not observed at all. These were offering CTOP to all clients whose pregnancies had been confirmed (and the use of Principles of Good Care and Guidelines used as reference to provide ANC. • First visit consultation provided before transfer of all pregnant women who for some reason needed to attend ANC at another clinic during (7%, n=2) of the time. The results were similar in both health authorities. • Clinic specific protocols on the management of pregnant women were used during (8.5%, n=5) of the time. These were not used at all in municipal and used during (17%, n=5) in provincial health authority. • Checklist for first and follow up visits used during (10%, n=6) of the time. These were not used at all in provincial and used (21%, n=6) in municipal health authority.
4.3.1.5 ANC consultation processes <ul style="list-style-type: none"> • General ANC consultation processes 	<ul style="list-style-type: none"> • Two of the general consultation processes were not observed at all. These included conducting a rapid appraisal of the pregnant women in the waiting area and following the principle of “ask, listen and feel” during consultations. • Giving priority to emergency situations of pregnant women of the time (100%,n=7). • Activities for the general consultation were recorded in 58-98% , n=639-1 177) reviews. • There were more reviews with LNMP, EDD, transport arrangements, future contraception, lifestyle counselling, infant feeding choice, ANC graphs, clinical notes and midwives’ assessments of the pregnant women (54%-98% n=639-1 177) recorded than those without such records). • The ANC plan, delivery plan and midwives’ counter signatures on the cards were recorded in fewer reviews compared to other elements (2%-46%, n=22-550). • The midwife countersigning the card being the least frequently recorded element (2%, n=22).

<ul style="list-style-type: none"> Processes during first ANC visit consultation 	<ul style="list-style-type: none"> Assessment for various conditions which included pre-eclampsia, HIV infection, malnutrition and anaemia, congenital abnormalities, foetal growth, post maturity and foetal movements and the issue of prophylactic calcium supplements was recorded to have been done in (60-99%, n=683-1 192) reviews. The results were almost similar in both health authority except for congenital abnormalities which was recorded in (46%, n=277) reviews in the municipal and (67.7%, n=406) in provincial health authority. Two processes done during first ANC visits were observed during most of the time. These included the use of Rapid screening tests for routine screening which was recorded in (42.4%, n=25) reviews and performing a Pap smear which was recorded in Pap smear done according to protocol (47.4%, n=27). Full physical including vaginal examination done on first visit was recorded in most reviews (74%, n=43). The results were the same in both health authorities for these processes except for the use of rapid screening tests which was recorded in more reviews (66.7, n=20) in provincial and fewer (16.7, n=5) in municipal health authority. The results for record review showed that History, routine investigations, HIV screening, physical examination and supply of calcium supplements to the pregnant women were recorded in the majority of reviews (86-100%; n=1 031-1 200). The other activities/tests were done in fewer reviews (27-70%; n=311-829). The least recorded was the consent to HIV testing which was signed in 27% (n=311) of the records only. The dates when all the activities were performed was recorded in more than (99.4-100%, n=459-1200) of the reviews for all activities in all PHC clinics. The results for the tests and activities were recorded in about 979-99.9%, n=473-1199 reviews except for the results for Pap smear which was only recorded in 43% (n=197) out of 459 records that had recorded that Pap smears were done. Actions in response to abnormal findings were recorded in more than (80-95%, n 156-310) of the reviews for all activities and tests except for TB for which actions were only recorded in 45%(n=128) of the reviews out of 286 reviews that had abnormal findings on TB recorded. All repeat tests that were due during ANC period such as HB, RPR and HIV were done in due time in 73% (n=878) reviews. Follow-up actions, in relation to previous findings, were implemented in 59% (n= 582) of the records.
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4.3.5 COMMITMENT OF THE PEOPLE INVOLVED IN IMPLEMENTING THE BANC APPROACH	
<ul style="list-style-type: none"> • Commitment of clinic staff to their work • Commitment of the pregnant women to their care 	<ul style="list-style-type: none"> • Staff spending most of the time attending to pregnant women and actively working (66%, n=39). The results were almost the same in both health authorities • The participants differed in their commitment to ANC with some participants showing assertiveness, others showed dissatisfaction whilst others showed that they trusted the nurses.
4.3.6 COMMUNICATION IN THE PHC CLINICS	
<ul style="list-style-type: none"> • Communication between PHC clinics and other institutions • Communication between the clinic staff and the pregnant women 	<ul style="list-style-type: none"> • Communication between PHC clinics and other institutions was observed (100%, n=5) of the time • Poor Communication between PHC clinics and EMRS was observed where the EMRS was not responding to a call within two hours (60%, n=3) • All the aspects of communication observed were done poorly in both health authorities except for giving clear directions and instructions to pregnant women about clinic procedures which was observed 77% (n=23) of the time in provincial PHC clinics • Clear directions and instructions about clinic procedures were given to pregnant women (51% n=30) of the time • Pregnant women informed about examination findings (15%, n=9) • Plan of management drawn in consultation with the pregnant women (3%, n=2) • Some participants verbalised that they had not been given complete information about the ANC service and other relevant issues regarding their care • The participants were also concerned about the inconsistency of information that they were given at the PHC clinics. • Human relations between the clinic staff and the pregnant women (88%, n=52) • The observations showed that the clinic staff were Courteous, professional and/or approachable at reception 31 (53%), observation 45 (76.3%), blood 54 (92%), injection 56 (95%), counselling 52 (100%) and at consultation 35 (59%) • Good human relations between staff and pregnant women was observed (76%, n=22) in municipal and 100% ,n=30) in provincial health authority.

4.3.7 CULTURE THAT PREVAILED IN THE PHC CLINICS	
4.3.7.1 Clinics' staff members assisting each other when there was a need to do so	<ul style="list-style-type: none"> • The clinics' staff members assisted each other when need arose (50%, n=6) of the time. • The issue of staff not assisting each other was raised by the participants • This issue was not observed at all in the municipal health authority and it was observed (75%, n=6) of the time in provincial health clinics
4.3.7.2 Professionalism and courteousness of clinics' staff members	<ul style="list-style-type: none"> • Professionalism and courteousness was observed in the way the clinics' staff members interacted with each other 97% (n=57) of the time • The comments from the study participants highlighted professionalism and courteousness issues amongst some staff members with some clients praising the clinic staff for this but others concerned about the lack of these attributes.
4.3.7.3 Satisfaction of the pregnant women with the ANC service	<ul style="list-style-type: none"> • Extrapolations regarding satisfaction with ANC service were made from the comments by the participants
4.3.7.4 Follow-up visits scheduled based on the pregnant women's convenience	<ul style="list-style-type: none"> • Follow-up visits scheduled were not based on the pregnant women's convenience all the time in all PHC clinics and in both health authorities
4.3.7.5 Involvement of the pregnant women in their own care	<ul style="list-style-type: none"> • The clinic staff were observed drawing the plans of management in consultation with the pregnant women during (3%, n=2) of the time. • It was evident from the interviews with the pregnant women that, whilst involvement of the pregnant women in their own care was ensured in some PHC clinics but, in other clinics it was not ensured
4.3.7.6 Maintenance of privacy	<ul style="list-style-type: none"> • Privacy was maintained during consultation (69%, n=41) of the time • Privacy was maintained during consultation 62% (n=18) of the time in municipal PHC clinics and 77% (n=23) of the time in provincial PHC clinics