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THE ACTIVITIES OF A MIDWIFE AT A LEVEL 2 PUBLIC SECTOR LABOUR WARD IN EASTERN GAUTENG

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A research report submitted in partial fulfillment of the requirements for the degree of Master of Science in Nursing in the Faculty of Health Sciences at the University of the Witwatersrand, Johannesburg
January 2007

DECLARATION

I declare that this research report, 'The Activities of a Midwife at a Level 2 Public Sector Labour Ward in Eastern Gauteng', which I submit for the partial requirement for the degree of Master of Science in Nursing at the University of the Witwatersrand, Johannesburg, is my own work and that all sources and references are acknowledged.

MJ Mukwevho
Signed

2008.05.05
Date

Ethics clearance number: M040832

ACKNOWLEDGMENTS

I wish to thank God the Almighty for blessing me with good health, strength, wisdom and courage to carry out this study.

My gratitude, in particular, goes to Dr Candice Bodkin, my supervisor, for her continuous guidance, support and understanding throughout the study until the end.

My special appreciation goes to my husband, Daniel Mohau, my son, Ishmael, my daughter Kegaugetswe, my parents, sisters and brothers who encouraged and supported me during the study.

I thank the women and midwives who participated in the study, the Gauteng Provincial Department of Health, and the hospital management of the institution where the study was conducted.

ABSTRACT

The aim of the study was to determine the activities of a midwife at a level 2 public sector labour ward in Eastern Gauteng. A level 2 labour ward is a 24 hour comprehensive maternity service which receives referrals from level 1 labour wards, midwife obstetric units (MOU's), nearby clinics and community health centres. A level 2 labour ward is staffed by advanced midwives, midwives, medical officers and obstetricians. The midwives working in the level 2 labour ward take care of women with obstetrical complications and who need specialist care. The introduction of free health care services to pregnant women in the public sector in July 1994; and the fact that HIV/AIDS has become the leading cause of deaths among the pregnant women has increased the workload of midwives working in the public sector. Now midwives have an additional function of implementing prevention of mother to child transmission of HIV and also the added responsibility of administering anti-retroviral treatment. South Africa has a shortage of midwives and level 2 public sector hospitals have the highest maternal mortality rate (Department of Health (DOH) 2002:15). As a result, midwives are faced with the increased likelihood of being subjected to disciplinary hearings as they are unable to deliver health care according to acceptable standards (South African Nursing Council (SANC) hearings.) It was therefore necessary to determine the activities of a midwife in a public sector level 2 labour ward.

The aim of the study was achieved through the following objectives: description of the activities of midwives in a level 2 labour ward; grouping, summarising and categorising the activities of midwives in a level 2 labour ward; verification of the activities of midwives in a level 2 labour ward; and quantification of the time spent by a midwife on each activity in a level 2 labour ward.

A quantitative, descriptive, contextual design was used to obtain data from midwives working in a level 2 public sector labour ward. The study was done in two phases. In PHASE I, three steps were followed which were: step 1 - description of the activities of a midwife in a level 2 public sector labour ward; step 2 - grouping, summarising and

categorising of the activities of a midwife at a level 2 labour ward; step 3 - verification of the activities of a midwife in a level 2 public sector labour ward. PHASE II included one step (step 4), which was the quantification of the time spent on each activity of a midwife at a level 2 public sector labour ward. The sample for PHASE I and II comprised the total population of midwives providing care at a level 2 public sector labour ward. Three advanced midwives were purposively selected to verify the activities (step 3). Data were analysed by the researcher using descriptive statistics. All ethical guidelines were adhered to, and measures were taken to ensure validity and reliability. The results are represented in terms of percentages and hours of time spent on relevant activities.

The results were as follows:

- Midwives spent 39.3% of their time (4 hours, 30 minutes and 50 seconds) on direct nursing care;
- Midwives spent 12.06% of their time (1 hour, 23 minutes and 6 seconds) on clerical nursing care;
- Midwives spent 7.02% of their time (48 minutes and 25 seconds) on patients assessment
- Midwives spent 3.98% of their time (27 minutes and 25 seconds) on timeout focused patient activity;
- Midwives spent 4.85% of their time (33 minutes and 25 seconds) on non-nursing duties; and
- Midwives spent 32.77% of their time (3 hours, 45 minutes and 57 seconds) on time out personal activity.

Although midwives spent most of their time on direct nursing care, there is a concern about the significant time spent on activities outside the ward.

LIST OF ABBREVIATIONS

HIV ..... Human immune-deficiency Virus
AIDS ..... Acquired immune-deficiency Syndrome
DOH ..... Department of Health
SANC ..... South African Nursing Council
NCCEMD ..... National Committee on Confidential Enquiries into Maternal deaths
USA ..... United States of America
ICU ..... Intensive care unit
WHO ..... World Health Organization
PMTCT ..... Prevention of mother to child transmission of HIV
SA ..... South Africa
ANC ..... African National Congress
Adv Mid & Neo ..... Advanced midwifery and neonatal care
Adv Psych ..... Advanced psychiatry
ICU Nurs ..... Intensive care unit nursing
OT Nurs ..... Operating theatre nursing
Paed Nurs ..... Paediatric nursing
ICN ..... International Council of Nurses
RCN ..... Royal College of Nursing
MOU ..... Midwife obstetric unit
CTG ..... Cardiotocograph
C/Section ..... Caesarean section
Hb ..... Haemoglobin
ND ..... Night duty
R ..... Resting day or resting night
L ..... Leave
Y ..... Midwife observed by researcher on the day
PAHO ..... Pan American Health Organization
TURP ..... Trade Union Research Project
SAMP ..... South African Migration Project
HSRC ..... Human Science Research Centre
UNICEF ..... United Nations Children's Fund
MMWR ..... Morbidity and Mortality Weekly Report
ECC ..... European Chapters Co-ordinating Council
ICD ..... International stastical Classification of Diseases
NVD ..... Normal vaginal delivery
APH ..... Antepartum haemorrhage

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CHAPTER ONE

INTRODUCTION AND OVERVIEW OF THE STUDY

1.1 INTRODUCTION

Chapter one introduces the reader to the study. The following are addressed: background, problem statement, research question, aim and objectives, significance of the study, and the researcher's assumptions. A brief overview of the research methodology is also provided.

1.2 BACKGROUND

South Africa has a shortage of midwives. There are different categories of nurses in South Africa, and a midwife falls within the nursing category. A discussion of the different categories follows.

1.2.1 Different categories of nurses in South Africa

1.2.1.1 Enrolled nursing auxiliary

An enrolled nursing auxiliary means a person enrolled as such under section 16 of the Nursing Act, No. 50 of 1978. She/he functions according to the South African Nursing Council (SANC) Regulation R2598, chapter 6, under the supervision of a registered nurse

or registered midwife.

1.2.1.2 Enrolled nurse

An enrolled nurse refers to a person enrolled as a nurse under section 16 of the Nursing Act, No. 50 of 1978 as amended. She/he functions according to the SANC, Regulation R2598, Chapter 5, under the supervision of the registered nurse or registered midwife.

1.2.1.3 Registered nurse

A registered nurse is entered in the registers of a category of nurse, as a nurse or a midwife. The register is kept in terms of the Nursing Act, No. 50 of 1978, as amended. The registered nurse performs her duties under the scope of the practice regulation R2598, chapter 2, of 30 November 1984 as amended by R1469 of July 1987, regulation R2676 of 16 November 1990, and regulation R260 of 15 February 1991. The registered midwife performs her duties under R2598, chapter 3 of 30 November 1984, as amended; and R2488 of 26 October 1990, as amended.

1.2.1.4 Enrolled midwife

An enrolled midwife refers to a midwife enrolled as such, according to Act 50 of 1978, as amended. She performs her duties under chapter 3 of R2598 of 30 November 1984 as amended and R2488 of 26 October 1990, as amended.

1.2.1.5 Advanced midwife

An advanced midwife refers to a registered nurse with a qualification in midwifery, who has undergone specialised training in an advanced course in midwifery. In addition to

performing duties under the scope of midwife R2598 of 30 November 1984, as amended, and R2488 of 26 October 1990, amended; she engages in complicated midwifery procedures. For example: vacuum deliveries, and the manual removal of the retained placenta. An advanced midwife acts '*as a consultant, educator and clinical specialist in the field of midwifery and neonatology'(SANC R1665:5).*

1.2.1.6 Differences between the registered midwife, enrolled midwife and the advanced midwife.

Both the registered midwife and the enrolled midwife perform their duties under SANC Regulation 2598 of 30 November 1984, as amended, and R2488 of 26 October 1990, as amended. They manage and refer mother or child if abnormalities are presented, by performing her functions under R2598 of 1984 and R2488 of 26 October 1990, Scope of Practice R387 of 15 February 1985. The following categories of nurses provide care to the women at a level 2 hospital:

- Registered midwives
- Enrolled midwives and
- Advanced midwives

1.2.2 SANC Registers and Rolls and the number of midwives

According to the South African Nursing Council (SANC)'s Growth Registers and Rolls 1996 to 2005, there has been a decrease in the numbers of midwives and advanced midwives from 2002 to 2005 (www.sanc.org.za/stats). These statistics indicate that there is a shortage of midwives and a lack of trained advanced midwives in South Africa.

1.2.3 Levels of health care in South Africa

Midwives render care at three levels of health care in South Africa. These are level 1, 2,

and 3. A level 2 labour ward is a 24 hour comprehensive maternity service which receives referrals from level 1 labour wards, midwife obstetric units (MOU's), nearby clinics and community health care centres. Care at level 2 labour wards is provided by advanced midwives, midwives, medical officers and specialist obstetricians (DOH 2002:15). Due to staff shortages, midwives working at level 2 public sector labour wards are overloaded (Denosa Nursing Update 2006).

Women with low risk or normal pregnancies are managed by midwives at level 1 public health sector and MOUs. Women with moderate and high risk pregnancies are managed at level 2 public health sector. Pregnant women who are low risk are referred to level 2 labour if they develop complications during pregnancy and labour.

1.2.4 Women with high risk pregnancies seen at level 2 public sector labour wards and the midwife

There is a vast range of pregnant women seen at level 2 public sector labour wards. These include women with intra-uterine foetal deaths, preterm labour, multiple pregnancies, pre-eclampsia, and previous caesarean sections. As midwives provide care to pregnant women at a level 2 labour ward in consultation with obstetricians, these patients with complicated pregnancies increase the workload of midwives. Pregnant women who are HIV positive also present at level 2 labour wards at different stages of the infection. The management of HIV positive pregnant women includes PMTCT.

1.2.5 The midwife and HIV/AIDS service to pregnant women

The National Health Care Plan of South Africa further identified HIV/AIDS as a health care priority. The provision of nursing care and the administration of anti-retroviral drugs to pregnant women and babies have therefore added another activity to the midwives. The DOH indicated that the number of pregnant women attending public health antenatal clinics who are infected with HIV/AIDS is escalating annually. These positive pregnant

women utilise the public sector hospitals. A large number of these HIV positive pregnant women die and thus HIV is the number one cause of maternal death in South Africa, as reported by the National Committee on Confidential Enquiries into Maternal Deaths (NCCEMD).

1.2.6 The midwife and maternal mortality

The first triennium report of 1999-2001 by the National Committee on Confidential Enquiries into Maternal Deaths (NCCEMD) indicated that there was a high maternal mortality in level 2 public sector hospitals. More than half the cases of maternal deaths occurred due to the problems related to the midwifery care of pregnant women (DOH 2002:15). There is therefore a need to improve the midwifery care of pregnant women.

Midwives in South Africa have to provide quality health care to pregnant women, with serious implications of the shortage of midwives being felt.

1.2.7 The midwife and free health care service to pregnant women

The midwives working in level 2 public sector hospitals have been expected to render a free health care service since the year 1994, as introduced by the Minister of Health. In order to address these requirements of the National Health Plan, the midwife is expected to conduct the following: health assessment, screening and referral, therapeutic activities such as administration of medication, provision of antenatal care, conduction of normal deliveries, conduction of emergency procedures such as resuscitation, intravenous fluid infusion, vacuum extraction deliveries, education of the pregnant woman and her family, provision of contraception services, termination of pregnancy services and counseling services (Abrahams, Jewkes & Mvo 2001:241). There was, therefore, a need to determine the activities of midwives in a level 2 public sector labour ward.

In South Africa, a midwife is expected to render health care services to pregnant women

during the antenatal period, labour and the puerperium, as stipulated by the South African Nursing Council Rules and Regulations R2488 of 26 October 1990, and Scope of Practice R387 of 15 February 1985, as amended. The midwife has a duty to ensure that all health care functions, education of health professionals, provision of treatment is done in order to save the patient (Searle 1992:238). This is to prevent and decrease the high maternal mortality in public sector hospitals.

The intention of this study was to investigate the activities of a midwife at a level 2 public sector labour ward in Gauteng. No such study has been conducted in a level 2 labour ward in South Africa. Similar studies have been conducted by other researchers, such as Bradshaw et al (1989), Hendrickson et al (1990), Norrie (1989), Harrison and Nixon (2001). These other studies were conducted in intensive care units in the United Kingdom and the United States of America. These previously conducted ICU studies were used as a model on which this study was based.

The researcher developed a data collecting tool using the work of Harrison and Nixon (2001). This was named a diary log sheet. The diary log sheet provided a means by which the researcher described the activity of the midwife at a particular time. The activity was described by means of an activity code. The diary log sheet has columns for recording time and the activity code. The midwives were observed over a 12 hour shift period. The researcher hoped to determine how midwives are using their time in a resourced strained setting. The acquired data can be used in further studies to make recommendations for staffing at level 2 public sector labour ward.

This study is based on 4 studies conducted on activities of nurses. These studies are:

- Bradshaw, K.E., Sitting, D.F., Gardner, M., Pryor T.A. & Budd M. Computer based data entry for nurses in the ICU. *Computing* 1989; **5:** 274-280
- Hendrickson, G., Doddato, T.M. & Kovner, C.T. How do nurses use their time? *Journal of Nursing Administration* 1990; **20**(3): 31-37
- Norrie P. Nurses time management in intensive care. *Nursing in Critical Care* 1997; **2**(3): 121-125

- Harrison, L. & Nixon, G. Nursing activity in general intensive care. *Journal of Clinical Nursing* 2001: 158-167

The results of each study will now be discussed in more detail, presented in order, from the earliest to the most recent.

1.2.8 'How do nurses use their time?'

Bradshaw et al. (1989) and Hendrickson et al. (1990) responded to pressures that were associated with the shortage of nurses who were appropriately trained in the United States of America (USA) by investigating how nurses used their time. They had to know the nursing activities in order to determine the nurses' time. The researcher held discussions with experienced senior nurses in the broad categories of activity that described the work of nurses, as well as reviewing the job descriptions of nurses. Slightly differing terms were used in both studies to describe the categories of activities that are performed by nurses.

Summary of Bradshaw et al. (1989)

- The study was conducted in a cardiothoracic intensive care unit (ICU);
- The study reviewed the impact of computerisation on the amount of time nurses spent performing clerical duties;
- The observer collected the data on random observations of the activities of the nursing staff working in the ICU done at 15 minute intervals; and
- Data were collected during the day and evening shifts, over a period of 7 days.

Summary of Hendrickson et al. (1990)

- The study assessed time spent by nursing staff performing different activities in different care environments that included medicine, surgery, obstetrics and gynaecology;
- The study was conducted by six trained observers who observed the activities

of nurses at 15 minute intervals over 8 hour shifts; and

- Data were collected for one week and included the weekend.

The findings of the studies of Bradshaw et al. (1989) and Hendrickson et al. (1990) demonstrated a similarity between the percentages of time spent by nurses on specific activities. Refer to table 1.1 for comparison of the two studies.

Table 1.1 Comparison of the work of Bradshaw et al. and Hendrickson et al.

Bradshaw et al. (1989) Category of activity	**% time spent**	**Hendrickson et al. (1990) Category of activity**	**% time spent**
Patient care	49.1	With patient	31
Charting	18.2	Patient chart	11
Oral communication	8.1	Preparation of therapies	10
Obtaining supplies	8.0	Shift change activities	9
Planning nursing care	0.6	Professional interaction	8
Reporting	3.1	Miscellaneous, clinical	4
Transferring patients	0.6	Checking physician's orders	3
Data review	1.6	Unit-orientated in-service	0
Checking medication schedules	1.4	Paperwork	4
Non-nursing activities	9.3	Phone communications	3
		Supplies	3
		Miscellaneous, non-clinical	13
		Don't know	1

1.2.9 Nurses and time management in intensive care

The study by Norrie (1997) describes how nurses used their time.

- The study was conducted in a large cardiothoracic ICU;
- A data collection tool used was developed from the work of Bradshaw et al.

(1989) and Hendrickson et al. (1990);

- The data collection tool consisted of five categories:
  - Direct nursing care;
  - Clerical nursing duties;
  - Patient assessment;
  - Non-nursing duties; and
  - Time out.
- Nurses completed a log sheet that identified their activity at 5 minute intervals
- Amount of time spent on each category of activity was calculated.

From Norrie's (1997) study, it was concluded that nurses spent 82% of their time involved in three categories of activity. These were: direct nursing care, patient assessment and clerical nursing duties. Refer to table 1.2 for the findings of Norrie's (1997) study on time spent by nurses in each category of activity.

Table 1.2 Time in each category of activity by ICU nurses by Norrie (1997)

Category of activity	**% time spent**
Direct nursing care	41
Clerical nursing duties	19
Patient assessment	22
Non-nursing duties	7
Time out	11

1.2.10 Nursing activity in a general ICU

Harrison and Nixon (2001) investigated the nursing activities in a general intensive care unit of a large district general hospital in the north-west of England. The researchers responded to the shortage of qualified nursing staff. At that time there was a need to make explicit rationale in order to justify and support direct patient contact by the registered

nurses.

A summary of the study by Harrison and Nixon (2001) is provided:

- A descriptive approach was used to describe, categorize and quantify the activities of nurses working in a six-bed general intensive care unit;
- The researchers analyzed the job description of nursing staff in order to identify the activities of intensive care nurses;
- The activities arising from the job description were arranged into broad categories using the work of Norrie (1997);
- The following broad categories of activities were identified:
    - Direct nursing care;
    - Clerical nursing duties;
    - Patient assessment;
    - Timeout;
    - Non-nursing duties; and
    - Time-out personal activity.
- The researchers designed a self reporting diary log sheet. Guidance and instructions were given to the intensive care nurses to aid them in completing the self-reporting diary log sheet to collect the data:
    - A self reporting diary log sheet was used to collect data on individual nurse activity;
    - The diary log sheet focused on an individual's activity at 5 minutes intervals;
    - The log sheets were completed by all grades of registered nurses; and
    - All registered nurses on all shifts completed diary log sheets, over a period of 7 days.

Refer to table 1.3 for profile of activity of all grades of registered nurses on all shifts.

Table 1.3 Profile of activity of all grades of registered nurses by Harrison and Nixon (2001)

Category of activity	**% time spent**
Direct nursing care	24
Clerical nursing duties	17
Patient assessment	38
Time out, patient-focused activity	6
Non-nursing duties	4
Time out, personal activity	10
Other	1

The researcher modeled her study on the study conducted in a general intensive care unit that was previously conducted by Harrison and Nixon (2001). No such study has been conducted in a level 2 labour ward in South Africa.

1.3 PROBLEM STATEMENT

Midwives have numerous functions in the public sector labour wards. There are staff shortages in the public sector that increase the workload of midwives. Substandard midwifery care of pregnant women has been implicated as the cause of the high maternal mortality rate in level 2 labour wards in more than half of the cases of maternal mortality (Moodley & Pattinson: 2002). The fact that there was a decrease in the number of midwives and advanced midwives during 1996 to 2005 in South Africa could also be contributing to the high maternal mortality rate at level 2 public sector hospitals (SANC Growth in the Registers & Rolls 1996-2005). The provision of anti retroviral drugs to HIV positive pregnant women and babies in South Africa has increased the workload of midwives. The fact that 'free' maternity services were introduced in SA in the public health sector in 1994 may or may not result in increased utilization of the services. The

findings of a study by Nahar and Costell (1998) conducted in Dhaka, Bangladesh on the hidden cost of 'free' maternity care showed the low utilization of 'free maternity care among low income groups. Stevens and Rule in their 1997-1998 report on baseline information about the migration experiences of residents make mention of the 1995 October Household Survey findings that 230 000 residents had moved within Gauteng and 106 000 moved from outside the province in the previous twelve months. The workload of midwives at public sector hospitals in Gauteng Province will increase because of the influx of people into the province. There was therefore a need to determine the activities of a midwife in a public sector level 2 hospital.

1.4 THE RESEARCH QUESTION

The following question arises from the problem statement:

What are the activities of a midwife at a level 2 public sector labour ward?

1.5 AIM OF THE STUDY

The aim of the study was to determine the activities of a midwife at a level 2 public sector labour ward and to quantify the average time spent by a midwife on each activity.

1.6 OBJECTIVES

The aim of the study was achieved through the following objectives:

i) Description of the activities of midwives at a level 2 labour ward;
ii) Grouping, summarising and categorisation of the activities of midwives at a level 2 labour ward;
iii) Verification of the activities of midwives at a level 2 labour ward; and
iv) Quantification of the time spent by a midwife on each activity at a level 2

labour ward.

1.7 SIGNIFICANCE OF THE STUDY

This study is significant as the researcher aimed to determine the activities of a midwife at a level 2 labour ward. The researcher then calculated the amount of time a midwife spent on these activities. This data can be used to inform staffing levels at level 2 labour wards, which may result in improved usage of staff in the face of staff shortages. The researcher hopes that the acquired data will aid in improving the midwifery care of pregnant women at level 2 public sector hospitals as these hospitals have a high maternal mortality rate.

The demands of free health care services to the pregnant women and also implementing the HIV/AIDS health care priorities in public sector hospitals will be met. The research findings will be forwarded to the South African Nursing Council to inform SANC on the workload of midwives at level 2 labour wards.

1.8 RESEARCHER'S ASSUMPTIONS

The researcher's assumptions are defined as `something supposed but not proven,' according to the Oxford Advanced Learner's dictionary (1989) and the South African Oxford dictionary (2002). Assumptions are statements taken for granted or considered true even though they have not been scientifically tested (Hungler & Polit 1997:12; Polit & Beck 2004:18).

The researcher makes meta-theoretical, theoretical and methodological assumptions. Each will be discussed in detail.

1.8.1 Meta-theoretical assumptions

The researcher states meta-theoretical assumptions about nursing, the patient, health and the community.

1.8.1.1 Nursing

Nursing in this study refers to midwifery practice in which the midwife renders holistic care to the woman in labour in order to meet her basic needs. The midwife is a member of the multidisciplinary health team. She identifies and serves as a substitute for what the patient lacks so that the patient can be complete, whole and independent (George 2002:87). In this study specifically, the nurse is a midwife working at a level 2 public sector labour ward and renders care to pregnant women who need specialised obstetrical care. She is encouraged to perform functions and roles of other health care workers if it is necessary and if she is skilled to do so, (George 2002:88) such as intubating the newborn baby whilst awaiting a paediatrician.

1.8.1.2 Patient

The patient in this study refers to a pregnant woman with obstetrical complications needing specialised obstetrical care at a level 2 hospital. Her mind and body are inseparable. No two pregnant women are alike; each labouring woman is unique and may present with a different problem.

1.8.1.3 Health

The World Health Organisation (WHO) defines health 'as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity' (Vlok 1996:7; Young, Van Niekerk & Mogotlane 2003:18). The WHO definition of health

applies to this study.

1.8.1.4 Community

The community is viewed as the total environment of the woman in labour, including family, significant others, and the midwife.

1.8.2 Theoretical assumptions

For the purpose of this study the following terminology was used:

- **A midwife** is a person who is a registered nurse and a registered midwife in terms of the Nursing Act (Act No.50 of 1978). For this purpose all registered nurses with a registration in midwifery and with a registration in advanced midwifery were referred to as midwives. A midwife carries out her profession under the conditions set out in Regulation 2488 (26 October 1990) and Regulation 387 (15 February 1985).

- **Level 2 labour ward** refers to a unit of obstetrics and gynaecology in a level 2 hospital, which renders health care to 'at risk' pregnant women during labour until the women are transferred to postnatal wards; theatre or an intensive care unit.

- **At risk pregnant women** refers to pregnant women who develop complications during pregnancy, labour and post delivery, such as pregnancy induced hypertension.

- **Direct nursing care** are all midwifery care activities midwives carry out on the labouring woman or on the baby.

- **Clerical nursing duties** are activities which involve record keeping and are

necessary for the smooth running of the unit and which are supposed to be done according to the national, hospital or unit policies.

- **Patient assessments** are those activities which a midwife undertakes to facilitate multidisciplinary discussions about a woman or baby under her care after realising that there is a need.

- **Time out focused patient activity** are activities done in order to improve quality of care and encourage recovery through patient involvement. This includes communication with the patient and family.

- **Non nursing duties** are activities which are incorporated into a midwife's duties which any other person who is not a midwife could do, such as tidying the labour ward.

- **Time out personal activity** refers to personal activities which are not work related and do not promote objectives of the organisation, such as taking personal phone calls and tea and lunch breaks.

- **Diary log sheet** is the data collection tool developed by the researcher that was used to record activities of the midwives and time spent on each activity.

- **Activity code** refers to a symbol assigned to represent the categories and subcategories of activities of a midwife.
    - Category refers to a variety of activities grouped together. The following categories were used in this study:
        - Direct nursing care;
        - Clerical nursing duties;
        - Patient's assessment;
        - Timeout patient focused activity;
        - Non-nursing duties;

- Timeout personal activity.
- These 6 categories are represented by the letters A to F.
- Subcategories refers to a list of activities occurring within a category.

1.9 RESEARCH METHODOLOGY

The aim of the study was to determine the activities of a midwife at a public sector labour ward and to quantify the average time spent by a midwife on each activity. The aim was achieved through the description of activities of a midwife; grouping, summarisation, categorisation of activities of a midwife; verification of activities of a midwife; and quantification of time spent by a midwife on each activity at a public sector labour ward. A brief overview of the research methodology is provided. Refer to chapter three for a detailed account of the research methodology.

1.9.1 Research design

A quantitative, descriptive, contextual design was used in this study. The study was conducted in two phases. PHASE I was done in 3 steps and included;

- Step 1 which entailed the description of the activities of midwives and related to objective 1;
- Step 2 which involved grouping, summarising and categorisation of the activities and related to objective 2; and
- Step 3 which involved verification of the activities of midwives at a level 2 public sector labour ward and related to objective 3.

PHASE II involved quantifying the time spent on each activity of a midwife at a level 2 labour ward. PHASE II related to objective 4.

1.9.2 Research method

A summary of the research method is provided in table 1.4. Refer to chapter three for a detailed description.

Table 1.4 Flow chart for research method

PHASES OF THE STUDY	DATA COLLECTION	SAMPLE
PHASE 1		
Step 1 **Description of activities of a midwife at level 2 labour ward**	• Listing of activities by midwives by means of writing each activity on the provided sheet. • Each midwife wrote her activities on specific allocated days over a period of three weeks as determined by statistician.	Total population of midwives working in a level 2 labour ward (N = 20)
Step 2 **Grouping of activities written by midwives; summarizing, and categorization of activities into subcategories and categories.**	• Activities as described by the midwives were grouped into groups of similar activities. These similar activities were named subcategories. • The subcategories were further grouped to fit under a category heading. • Each subcategory was assigned a code. • The categories were named as follows: A= direct nursing care B= clerical nursing duties C= patients assessment D= timeout patient focused activity E= non-nursing duties F= timeout personal activity The same categories used by Harrison and Nixon (2001).	
Step 3 **Verification of activities**	• The list of categories and subcategories were given to advanced midwives to verify. • Then the researcher compared the categories and subcategories with the expected midwifery care as described by SANC Regulation R2488 of 26 October 1990	Purposive sampling of advanced midwives working in Gauteng level 2 public sector hospitals
PHASE II		
Quantification of the average time spent by a midwife on each activity	• The researcher observed activities of midwives in their working setting. • The diary log sheet was used to record category and subcategory codes. • The researcher observed midwives over a 12 hour period at 15 minutes intervals • At each 15 minute interval the researcher recorded the midwife's activity by means of the category and subcategory code. • This was done so as to quantify time spent by midwife on each activity.	Total population of midwives working in level 2 public sector labour ward

DATA ANALYSIS	Data were analysed by the researcher using descriptive statistics. Data analysis involved calculating how much time a midwife spent on each subcategory and category of activity.	
CONCLUSION AND RECOMMENDATIONS		

1.10 VALIDITY AND RELIABILITY

An overview of validity and reliability is provided, refer to chapter three for a detailed description of validity and reliability. Content related validity was ensured by using the data collection tool which was developed from the work of other previous researchers. This study is a replication of one that was performed in an intensive care unit. The researcher paid special attention to aspects of reliability which are detailed in chapter three. The researcher collected data in PHASE II and adhered to the same data collection tool to observe all participants.

1.11 ETHICAL CONSIDERATIONS

An overview of the ethical considerations is provided. The study was conducted after obtaining permission from the following authorities:

- The Post Graduate Committee of the Faculty of Health Science;
- The Committee for Research on Human Subjects (Medical) of the University of the Witwatersrand, for ethical clearance (Clearance number M040832);
- The Head of Gauteng Department of Health;
- The Head of the Obstetrics and Gynaecology Department of a level 2 public sector hospital, and
- The midwives working in a level 2 public sector labour ward.

The researcher explained the nature of the study to the participants. Anonymity of participants was guaranteed, and participants were protected and data was presented in

such a manner that individuals cannot be identified. Specific ethical considerations related to observational research were applied. Refer to chapter three for a detailed discussion on ethical considerations.

1.12 STRUCTURE OF THE RESEARCH REPORT

The structure of the research was as follows:

- Chapter one: Introduction and overview of the study;
- Chapter two: Literature review;
- Chapter three: Methodology;
- Chapter four: Results and discussion; and
- Chapter five: Conclusions, recommendations and limitations.

1.13 CONCLUSION

A brief overview of the study was provided in chapter one. Aspects of chapter one are elaborated on in chapter three. A review of the literature follows in chapter two.

CHAPTER 2

LITERATURE REVIEW

Chapter two introduces the reader to the main concepts of the study by means of a literature review.

2.1 INTRODUCTION

The following are elaborated upon in chapter two: HIV/AIDS and the role of the midwife; improved access to antenatal care and the impact on the midwife; staff shortages; maternal mortality rate and the midwife; and other studies on the activities of nurses.

2.2 HIV/AIDS AND THE ROLE OF THE MIDWIFE

In July 1994 the Minister of Health in South Africa announced that pregnant women are to receive improved antenatal care, delivery, and post natal care free of charge in the public sector (ANC 1994:84). In addition to the free health care to pregnant women in the public sector, HIV/AIDS was identified as a health care priority within the National Health Care Plan of South Africa (1994). The management of the HIV positive pregnant women further adds to the workload of midwife.

According to the Department of Health (2002), the HIV infection rate for South Africa among pregnant women was 26.5%. The prevalence of HIV infection among pregnant women in SA is escalating annually. The DOH (2004) prevalence survey among antenatal clinic attendees at public health care clinics indicates an increase in the prevalence of HIV positive pregnant women. Refer to table 2.1 for 2004 HIV sero-prevalence survey among antenatal clinic attendees in the nine South African Provinces

(DOH 2004).

Table 2.1 HIV sero-prevalence survey among antenatal clinic attendees.

	2002	2003	2004
Gauteng	**31,6%**	**29,6%**	**33,1%**
KZN	36,5%	37,5%	40,7%
Mpumalanga	28,6%	32,6%	30,8%
Free State	26,8%	30,1%	29,5%
North West	26,2%	29,9%	26,7%
Eastern Cape	31,6%	27,1%	28%
Limpopo	15,6%	17,5%	19,3%
Northern Cape	15,1%	16,7%	17,6%
Western Cape	12,4%	13,1%	15,4%
South Africa	26,5%	27,9%	29,5%

Pregnant women who have tested HIV positive may choose to be in the Prevention of Mother to Child Transmission (PMTCT) of HIV programme provided in the public health care sector. PMTCT programme and the administration of anti-retroviral treatment for HIV infected South Africans were introduced in 2002 and both add to the functions of the midwife. More women were therefore expected to utilise the public health services. Other countries also acknowledge this and are involved the prevention and treatment of HIV/AIDS during pregnancy.

According to Berer (2004), in the United Kingdom it was argued that prevention and treatment of HIV/AIDS, particularly in pregnancy-related care, should be included as a public health priority. In the United States of America in addition to the routine HIV screening a second screening is done during the third trimester for women who are at risk, and a rapid HIV test is done on women who are in labour whose HIV status is not documented (Morbidity and Mortality Weekly Report-MMWR 2006:3).

South Africa is also applying various ways of preventing, treating and managing HIV/AIDS similar to the United Kingdom and the United States of America. After the

inception of the PMTCT programme in 2002, other programmes which deal with HIV/AIDS prevention and treatment were introduced (For example, the provision of anti-retroviral treatment to South Africans in the public sector). HIV infection is an added burden on pregnancy. HIV/AIDS was seen as the number one cause of maternal mortality, and HIV positive pregnant women are seen at all levels of care in the public sector at the antenatal clinic, labour ward and postnatal ward. Most of the burden of PMTCT programme falls on the shoulders of the midwife in public sector hospitals. The initial counseling on HIV/AIDS to pregnant women is mostly at the public health sector antenatal clinic. Loewenson and Thompson (2003) argue that the capacity of the public health sector to deliver services is compromised by the brain drain at the time when HIV/AIDS epidemic is seriously increasing the burden on the system.

2.3 IMPROVED ACCESS TO ANTENATAL CARE AND THE IMPACT ON THE MIDWIFE

Onah, Ikeako and Hoabachie (2006) in their study on factors associated with the use of maternity services in Enugu, South Eastern Nigeria, found that if maternity utilisation is improved then the high maternal mortality will be reduced.

Antenatal clinic services are very important for pregnant women because midwives have the opportunity to assess the health conditions; identify needs and problems of a pregnant woman; give health advice and treat any existing diseases or refer to the appropriate service. According to the South African Nursing Council Regulation R2488 of 26 October 1990, as amended, the midwife is expected to assess the pregnant woman once a month until 28 weeks, then once a fortnight until 36 weeks and at least once a week until labour commences. During all these visits the midwife plays a vital role; and only refers the pregnant woman to the doctor if complications arise. She has to carry out all these activities in the resource strained public health sector.

2.4 STAFF SHORTAGES

2.4.1 Registered midwives and advanced midwives

In South Africa the maternity health services are mostly staffed by midwives and advanced midwives. Refer table 2.1 for the number of midwives and advanced midwives on SANC registers. (Denosa Nursing Update, Professional matters 2006:42-43). As can be seen on table 2.1, there has been a decrease in the number of midwives each year from the year 2001 to 2005.

Table 2.2 Number of midwives and advanced midwives on SANC registers and rolls.

Year	Midwives	Advanced midwives
2000	56 881	no data
2001	56 090	843
2002	55 138	828
2003	54 957	810
2004	54 580	794
2005	54 136	773

2.4.2 Post basic qualifications

There has been a gradual decrease in the number of students registering for post basic qualifications in midwifery since 1996. However, a gradual increase in registration for other post basic nursing qualification is seen. Refer to graph on figure 2.1 (Denosa Nursing Update, Professional matters 2006:42-43).

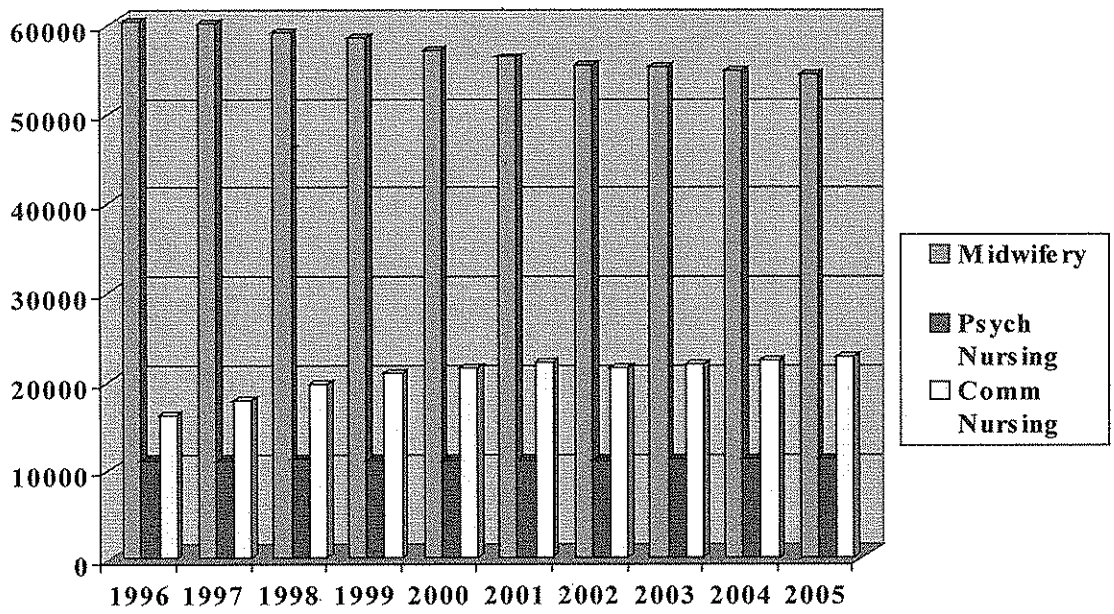

Figure 2.1: Registration for post basic qualification for midwifery, psychiatry and community health nursing

Figures below indicate the increase (↑) and decrease (↓) in the number of nurses qualifying each year in midwifery, psychiatry and community nursing. Refer to table 2.3.

Table 2.3 The increase and decrease in numbers of qualifications in midwifery, psychiatry and community nursing

	Midwifery	**Psychiatry**	**Community nursing**
1996-1997	188 ↓	85 ↑	1508 ↑
1997-1998	972 ↓	56 ↑	1815 ↑
1998-1999	653 ↓	103 ↓	1335 ↑
1999-2000	1294 ↓	52 ↑	659 ↑
2000-2001	791 ↓	40 ↑	471 ↑
2001-2002	955 ↓	124 ↓	550 ↓
2002-2003	178 ↓	148 ↑	338 ↑
2003-2004	377 ↓	27 ↑	430 ↑
2004-2005	444 ↓	29 ↑	392 ↑

The South African Nursing Council reports on the number of nurses registering for training in advanced nursing programmes also indicate low numbers of nurses registering for training in advanced midwifery and neonatal nurses (Adv Mid & Neo). See figure 2.2 for the graph that represent advanced programmes.

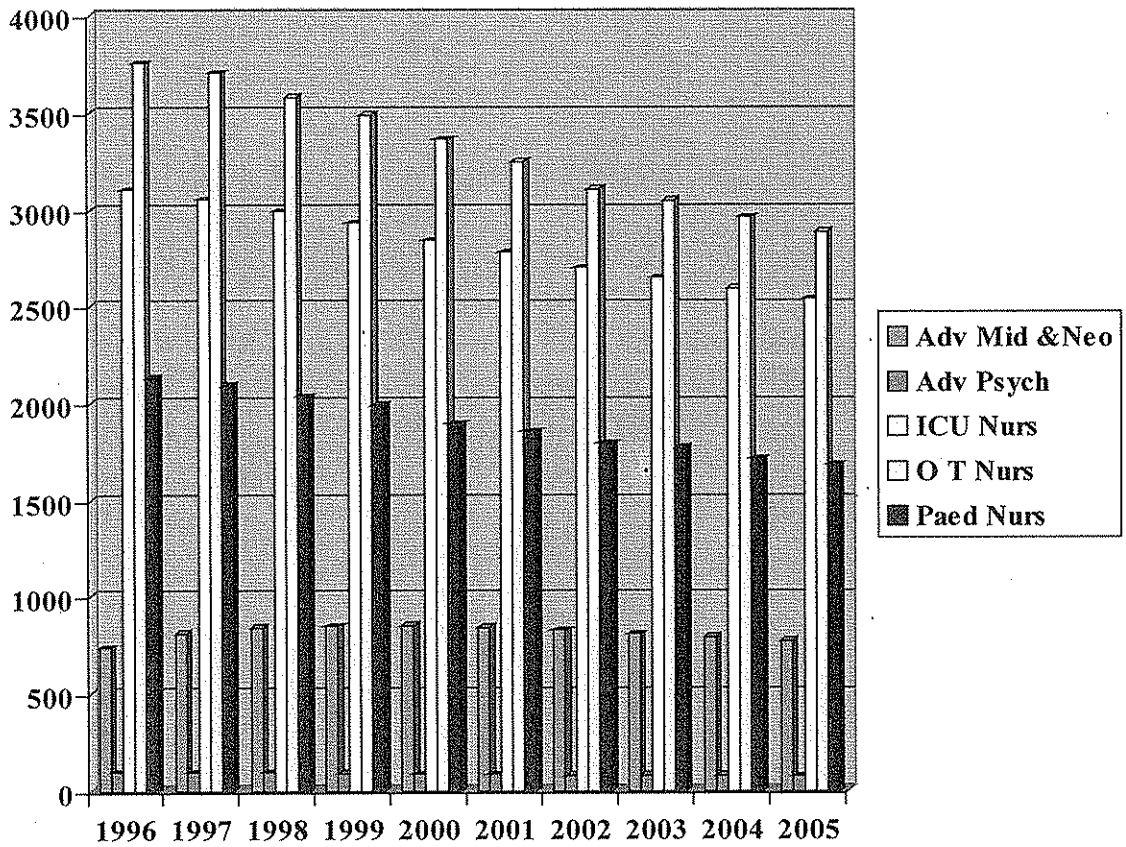

Figure 2.2 Advanced nursing programmes (Denosa update:2006).

2.4.3 Reasons for the loss of midwives.

The decreasing number of midwives is not only seen in South Africa. In Malawi some health centres are staffed by one enrolled nurse-midwife and in other facilities, deliveries are conducted by unskilled and untrained staff. Some maternity units had to be closed down because of shortage of staff (McCoy, Ashwood, Ratsma, Kemp & Rowson 2004:13). Loss of staff to the international market for trained health care workers and international migration contribute to the low staffing levels in Malawi.

In South Africa 1 139 persons requested removal from the South African Interim Nursing Council's registers/rolls; and 71 persons indicated that they migrated to foreign countries.

In the study conducted by Ehlers, Oosthuizen, Bezuidenhout, Monareng and Jooste, (2003), 51.7% of South African nurses working in countries other than the Republic of South Africa responded that they left South Africa because of the heavy workload in South African health services. In the same study, 47.8% of the respondents indicated that at the time of the study they already had intensions to leave; and 36.2% were intending to leave in future, also because of the heavy workload.

Parkhurst, Penn-Kekana, Blaauw, Balabanova, Danishevski, Rahman, Onama and Ssengooba (2005) found that the poor performance of maternal health in South Africa is due to the lack of health information systems that seriously hamper human resources and describe this as a system of failure.

The Director General of The World Health Organisation (WHO) stated that *'Nursing and midwifery services are a vital resource for attaining health and development targets. Failure to solve these problems will have serious implications for the quality and coverage of health care'* (Brundtland: 2002).

According to a report from research supported by WHO, the International Council of Nurses (ICN) and the Royal College of Nursing (RCN) on international migration of nurses and the growing trend of active international recruitment of nurses by some developed countries resulted in:

- Frustration or de-motivation of nurses remaining;
- Loss of skills;
- Reduction in the level and quality of service;
- Increased staff shortages, as it was difficult to replace the nurses who left in 60% of the institutions surveyed (Buchan, Seccombe & Thomas: 1997).

In a study conducted by Needleman, Buerhaus, Mattke, Stewart and Zelevinsky (2002)

on nurse staffing levels and the quality of care in hospitals of 11 American States, it was found that there is consistent evidence of an association between higher levels of staffing by registered nurses and lower rates of adverse outcomes.

The main implications of the decreased number of nurses in South Africa as indicated by Pan American Health Organisation are:

- Increased costs of recruitment and retention;
- Decreased capacity to deliver health services;
- The few remaining nurses have to support essential health services; and
- Low consumer and staff morale.

The small number of midwives who have low morale and are paid low salaries have to cope with the higher numbers of patients. Midwives therefore have difficulty in rendering quality care to pregnant women. Substandard care shall prevail as a result it will be difficult to reduce the maternal mortality in the public health sector.

2.5 MATERNAL MORTALITY RATE AND THE MIDWIFE

Maternal mortality rate in South Africa is high and in more than half the cases of deaths occurred due to problems related to the midwifery care of pregnant women (DOH 2002:15). In Malawi there is also a high maternal mortality rate, and poor health care was identified as one of the factors that predisposed to the deaths (Malawi's Maternal Mortality 2004:1).

According to the National Committee on Confidential Enquiries into Maternal Deaths in South Africa most maternal deaths occurred in Level 2 public sector hospitals; whilst the audit performed by McCoy (2004) in Nankumba, Malawi, showed that about 44% of the maternal deaths occurred in the patient's home, the home of a traditional birth attendant or on the way to the health institution.

In the report by Steele (1999) about the why mothers die in the United Kingdom, Steele

indicated that there were still unacceptable number of deaths associated with substandard care. There is therefore a need to study maternal mortality to gain a more in-depth understanding of causes and factors that contribute to maternal mortalities in order to prevent and reduce the number of maternal deaths. Discussion on maternal mortality includes direct, indirect and fortuitous causes of maternal deaths.

2.5.1 Maternal mortality

According to WHO (1992), a maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management; but not from accidental or incidental causes (Mantel, Buchmann, Rees & Pattison 1998). Wikipedia (2007) defines maternal death as a death of a woman in relation to a pregnancy.

2.5.1.1 Direct maternal death

A direct cause of maternal death is a '*death resulting from obstetric complication of the pregnancy state (pregnancy, labour and puerperium), from interventions, omissions, incorrect treatment or from a chain of events resulting from a chain from any of the above*' (Moodley & Pattinson: 2006; Drife & Lewis: 2001).

2.5.1.2 Indirect maternal death

An indirect cause of maternal death is a '*death resulting from previous existing disease, or disease that developed during pregnancy and which was not due to direct obstetric causes, but which were aggravated by the physiological effects of pregnancy*'(Moodley & Pattinson: 2006).

2.5.1.3 The quality of health care and maternal death

The quality of a health care system is assessed by events such as a maternal death. According to the second confidential report on confidential enquiries into maternal deaths in South Africa of 1999 – 2001; midwives were implicated in that they offered substandard care in more than half of the maternal deaths.

Substandard care means that the care received by the patient was rated below the standard that should be offered. Shortage of staff, poor staff training and failure of the staff to provide correct care needed, are some of the causes of the provision of substandard care. Substandard care leads to avoidable factors and missed opportunities. An avoidable factor refers to something which may have prevented death. A missed opportunity is failure to provide the correct management care that resulted in an adverse outcome. The three factors concerned are shortage of staff, poor staff training and failure of the staff to provide correct care needed result in poor care. The Californian guidelines for minimum staff ratios for units by Zondach (2004) are as follows: Labour and delivery 1:2; well-baby nursery 1:8; neonatal ICU 1:2; Operating room 1:1; Post anaesthesia care unit 1:2; Intensive/critical care unit 1:2. It is therefore important to consider the level of care and acuity of the unit when staffing maternity units.

The initial assessment that includes, history taking, examination of a case and in problem identification was found to be performed poorly at level 2 hospitals. The poor usage of the partogram for patients in labour also contributed to deaths of women (DOH: 2001), which indicate the substandard care given.

The third report on confidential enquiries into maternal deaths in South Africa for 2002 - 2004 shows an increase in the deaths at level 1 and 2, and is similar to the findings of the second confidential report of 1999-2001. Refer to table 2.4 for distribution of maternal deaths per level of care; and to table 2.5 for the three factors (substandard care, avoidable factors and missed opportunities) that resulted in poor care per level.

Table 2.4 The reports on confidential enquiries into Maternal Deaths: distribution of maternal deaths per level of care (DOH: 1998-2004)

Year	Level 1 (%)	Level 2 (%)	Level 3 (%)	Private (%)
1998	27,1	**35,1**	30,1	1,7
1999	28,6	**32,6**	34,5	1,7
2000	30,0	**36**	28,9	1.3
2001	29,1	**36,3**	30,1	1,4
2002	27,3	**32,1**	34,2	2,2
2003	32,6	**39,3**	24,3	0,7
2004	32,0	**37,2**	25,4	1,2

When comparison is made between second and third reports on confidential enquiries into maternal deaths in South Africa, it is evident that more maternal deaths occurred at Level 2 institutions than at Level 1 and 3. Avoidable factors, missed opportunities and substandard care contributed to most maternal deaths at Level 2 institutions. (DOH 2006:44)

Table 2.5 Avoidable factors, missed opportunities and substandard care

Triennium	Level 1	Level 2	Level 3
1999-2001	27,3%	**35%**	29,6%
2002-2004	53,8%	**48,3%**	36,5%

The high numbers of maternal deaths at level 2 institutions remains a concern for the National Department of Health. In order to address the high maternal death rate, there was therefore a need to determine the activities of midwives in a level 2 public sector labour ward with the intention of improving the midwifery care.

The substandard care by midwives was mentioned in the NNCCEM report. If all factors implicated in all the three triennium reports are dealt with, the quality of care will be improved in all the levels of care. In order to improve the care with the few midwives in

the resourced strained public health sector; it is important to refer to similar studies done in South Africa and other countries on activities of nurses. What is entailed in the work activities of the midwives should be known. International studies on activities of nurses in other units other than midwifery units were also done. A detailed discussion of the previous studies follows.

2.6 OTHER STUDIES ON THE ACTIVITIES OF NURSES

Studies on activities of nurses working in the intensive care unit were conducted in the United Kingdom and the United States of America in response to pressures in the work environments.

For the purpose of this study the following terminology was used:

- **Direct nursing care** refers to all midwifery care activities carried out on the labouring woman or on the baby. For example, monitoring foetal heart rate with fetoscope, transfer of babies to nursery, recording observations in antenatal file, suturing of episiotomy and 1st degree tear, assisting an obstetrician with a delivery.

- **Clerical nursing duties** are activities, which involve record keeping and are necessary for the smooth running of the unit which are supposed to be done according to the national, hospital or unit policies. For example, recording delivery in maternity register, completing newborn records, ordering dispensary, writing death report slips, drafting off duties.

- **Patient assessments** are those activities which a midwife undertakes to facilitate multidisciplinary discussions about a woman or baby under her care after realising that there is a need. For example, discussion about a patient's progress and taking over from labour ward midwives.

- **Time out focused patient activity** are activities done in order to improve quality of care and encourage recovery through patient involvement. Includes communication with the patient and family. For example, reassuring the woman, answering the phone in connection with patient, phoning paediatrician for distressed baby

- **Non nursing duties** are activities which are incorporated into a midwife's duties which any other person who is not a midwife could do, such as tidying the labour ward, completing leave forms, arrangement of store room, and serving meals to patients.

- **Time out personal activity** refers to personal activities which are not work related and do not promote objectives of the organisation, such as taking personal phone calls and tea and lunch breaks.

- **Diary log sheet** is the data collection tool developed by the researcher that was used to record activities of the midwives and quantify time spent on each activity.

- **Activity code** refers to a symbol assigned to represent the categories and subcategories of activities of a midwife.
    - Category refers to a variety of activities grouped together. The following categories were applied in this study:
        - Direct nursing care;
        - Clerical nursing duties;
        - Patients assessment;
        - Timeout patient focused activity;
        - Non-nursing duties;
        - Timeout personal activity.
    - Subcategory is a list of activities occurring within a category.

Previous studies on which this study is based are discussed in more detail.

2.6.1 Study by Harrison and Nixon (2001)

A significant study was conducted by Harrison and Nixon (2001) on activities of nurses in a general intensive care unit of a large district general hospital in England. The total number of patients admitted in this unit was 450 in a year. Six beds were staffed during the study and the seventh bed was used when there was a need. During the study seven more beds were opened. The study was conducted to describe, categorise and quantify the activities of nurses working in a six-bed general intensive care unit. All registered nurses on all shifts completed self-reporting diary log sheets that identified their activities at 5 minute intervals.

The findings indicated that nurses working in a general intensive care unit on all shifts spent 85% of the time on four categories of activity which are:

- Direct nursing care: 24%;
- Clerical nursing duties: 17%;
- Patient assessment: 38% and
- Time-out, patient focused activity: 6%.

These four activities require knowledge and skills of a registered nurse. Table 2.6 indicates the top five categories and subcategories that accounted for the overall 47.1% of their nursing time.

Table 2.6 The overall nursing time spent on five specific activities

	Activity	Time %
Category B Subcategory 18	Clerical nursing duties Observation/assessment of the patient to assess physiological and/ or psychological status	17.70
Category C Subcategory 21	Patient assessment Providing information about the patient to other members of the team, e.g. handover, physio.	9.94
Category B Subcategory 15	Clerical nursing duties Recording observation, calculating fluid balance, recording ventilator parameter	8.06
Category A Subcategory 2	Direct nursing care Hygiene, e.g. bed bathing, mouth/eye care, pressure area care/turning	7.32
Category A Subcategory 3	Direct nursing care Drug preparation and administration	4.19

According to Medisource America (2007) the National Grading system of the United Kingdom created a grading system for all registered nurses in the National Health service, and this grading system was applied in this study. In order to study the activities of nurses; nurses had to be grouped accordingly. For the sake of clarity, the different grading of registered nurses is explained below. Nurses are allocated a grade according to their experience in their speciality. Grading starts at A for the most junior and moves up the alphabet. Grades A, B and C nurses are still on training and working as assistants.

- **Grade D nurses**

Grade D nurses are newly qualified. Registered nurses start at this level. They are enrolled nurses.

- **Grade E nurses**

These nurses have a minimum of 6 months post registration experience, and may have up to a full year.

- **Grade F nurses**

A junior sister or senior staff nurse. The nurse may have one or two courses post registration and may have specialised in a particular area of nursing. These nurses have a management role in a ward setting. They are left to be in charge of a ward on a regular

basis.

- **Grade G nurses (senior nurses)**

These nurses are responsible for the entire ward and staff. They are the 'charge nurses' or 'sisters', play a management role and do more paper work than 'hands-on' nursing.

- **Grade H nurses**

The H grade nurses are in a management position. They are involved in personnel management, recruitment, training and budgeting.

The overall nursing time spent by each grade of nurses in each category of activity is indicated. Refer to table 2.7 for the profile of activity of senior nurses, grade D and F nurses for all the shifts.

Table 2.7 Profile of activity, senior nurses, grade D and F nurses for all the shifts

Category of activity	**Senior nurses Grade G Time (%)**	**Grade D Time (%)**	**Grade E Time (%)**
Direct nursing care	11	27	21
Clerical nursing duties	27	18	13
Patient assessment	38	35	41
Time out, patient-focused activity	3	5	7
Non-nursing duties	3	4	6
Time out, personal activity	12	10	10
Other	2	1	2

Senior nurses were required to manage the total provision of care on their shifts and also review staffing levels for other shifts. As a result, senior nurses in charge of shifts spent 27% of their time on clerical nursing duties, and that 24.1% of their time is spent in managerial and administrative activity.

The Grade G nurses who are senior nurses, had a multitude of tasks and spent 27% of

their time on clerical nursing duties while E grade staff, which is more experienced than D grade staff, spent 27% of time on direct nursing care, and D grade undertook 41% of their time on patient assessment.

Therefore, the different grades of nurses spend their time in a different category of activities.

2.6.2 Study by Norrie (1997)

In the study by Norrie (1997) conducted in a large cardiothoracic intensive care unit; the nurses spent 82% of their time in the three categories of activity which were: direct nursing care, patient assessment and clerical nursing duties. According to Norrie (1997), these categories require the skills and knowledge of a registered nurse. The time was spent as follows: direct nursing care 41%; patient assessment 22%; and clerical nursing 19%. The results of Norrie's study demonstrated that the registered nurses working in the intensive care unit spent a large percentage of their time in activities appropriate for registered nurses.

Data from previous studies on activities of nurses in intensive care units indicate variations in the time spent in direct nursing care. In the Bradshaw et al. (1989) study, 51.1% of time was spent on direct care; in the Hendrickson et al. (1990) 41%; in Norrie's study (1997) 41% and in Harrison and Nixon's (2001) study nurses spent 24% on direct nursing care. However, the differences may have been because of the nature of the intensive care specialities. Patients in the main thoracic intensive care would necessitate more direct care following surgery, while in a general intensive care direct nursing care will be according to condition of the patient. Another factor that may have influenced the results of Norrie's (1997) study was that weekends and night shifts were excluded from the study. The Harrison and Nixon (2001) study further indicates that nurses in charge of shifts spent 24,1% of the time in direct nursing care activities, and this may have influenced the results of the study. Norrie (1997) and Bradshaw et al (1989) did not

specify how the senior nursing staff was involved.

Refer to table 2.8 for a comparison of the four studies.

Table 2.8 A comparison of the four studies presented as percentage of time spent on category of activity

	Harrison & Nixon (2001)			Norrie (1997)		Hendrickson et al (1990)	Bradshaw et al (1989)
	Senior nurse	Grade D	Grade F	All nurses	Nurses in charge		
Direct nursing care	11	27	21	41	24,1	51.1	41
Clerical nursing duties	27	18	13	19	*	*	*
Patient assessment	38	35	41	22	*	*	*
Time out, patient focused	3	5	7	*	*	*	*
Non-nursing duties	3	4	6	7	*	*	*
Timeout, personal activity	12	10	10	11	*	*	*
Other	2	1	2	*	*	*	*

2.7 THE SCOPE OF PRACTICE OF A REGISTERED MIDWIFE

A registered midwife is expected to carry out her activities according to the scope of practice of a registered midwife. This scope of practice entails procedures or scientifically based acts that are applied in midwifery practice. The acts relate to the mother during pregnancy, labour and puerperium (SANC: R2488).

The midwife diagnoses health needs and facilitates the attainment of physical and mental health of both the mother and the child, where a child may also mean an unborn child

(South African Nursing Council Regulation R2488 of 26 October 1990).

During the antenatal period the midwife advises the patient to be examined by a medical practitioner and to undergo a blood test at least once in her pregnancy; ascertains whether there were any abnormalities during the previous pregnancies, labour and puerperium; performs assessments to ascertain whether the pelvis of the primigravida is adequate for normal delivery or the patient needs to be referred to the medical practitioner; prepares the patient for labour and breastfeeding unless it is contra-indicated; instructs patient on antenatal exercises; examination of the pregnant woman at least once a month until the 28th week, then at least once a fortnight until the 36th week and once a week until the commencement of labour; and should keep a record of all her actions.

The registered midwife is expected, according to the SANC R2488, to stay with the patient during labour, when the second stage of labour is imminent until after birth of the child and as long as the condition of the mother or the child demands; and should stay with the patient for at least an hour after delivery of the placenta and membranes. In the case where a patient presents with postpartum haemorrhage in the absence of the doctor or pending the doctor's arrival, the midwife may administer 10 units of oxytocin intramuscularly, which may be repeated at intervals if necessary. During puerperium, the midwife is also expected to attend to the mother and child and instruct the mother on postnatal exercises, breastfeeding, oral rehydration of the child and recognition of abnormalities that may occur; and to record accordingly. The registered midwife may also administer pre-mixed gas and air analgesia to a patient if prescribed by a medical practitioner.

Where necessary, the midwife refers the mother and child to the registered person, who is registered in terms of section 45 (1) (q) of the Nursing Act, 1978 (Act No. 50 of 1978) or in terms of the Medical, Dental and Supplementary Health Service Professions Act, 1974 (Act No. 56 of 1974). In case of illness, abnormalities of complications occurring during pregnancy, labour and puerperium; the midwife is expected to refer the patient.

During pregnancy the midwife refers the patient presenting with the following: excessive nausea and vomiting; actual or threatened abortion; vaginal bleeding or abnormal vaginal discharge; intra-uterine growth retardation; albumin or glucose in urine; oedema of face, hands or feet; any condition suggesting cephalo-pelvic disproportion; abnormal presentation after 32 weeks; multiple pregnancy; sores on genitalia; tenderness or abnormal distension of abdomen and convulsions.

Some of the above-mentioned abnormalities may also occur in labour, which may be: excessive vaginal bleeding, mal-presentation; prolonged labour of any stage of labour; abnormal uterine action; foetal distress; placenta not completely expelled an hour post-delivery of the baby and third degree perineal tear. Some of the above-mentioned abnormalities may occur during puerperium. Other instances where a midwife is expected to refer patients are: malodorous lochia; elevated body temperature to 37.7 °C for 24 hours; unusual swelling of the breasts with local tenderness of pain; excessive or prolonged bleeding and pain in lower limbs.

The midwife refers the child presenting with the following: injuries received during birth; malformation or deformity; inflammation or any discharge from the eyes; serious skin eruptions; inflammation or haemorrhage from the umbilicus; neonatal haemorrhage; convulsions and jaundice.

The practice of midwifery involves prevention of disease relating to pregnancy, labour, puerperium, the promotion of health and counseling of individuals and families by monitoring the health status of the mother and child and their reactions to disease conditions, trauma, stress, anxiety, medication and treatment.

Other activities that fall within the scope of practice of a registered midwife are:

- Performance of an episiotomy to prevent severe perineal tear or complications relating to the child;
- Administration of prescribed medicine;
- Promotion of physical comfort and reassurance of the patient;

- Promotion of exercise, rest and sleep;
- Supervision of oxygen supply to patient;
- Supervision and maintenance of fluid, electrolyte and acid balance of a patient;
- Facilitation of maintenance of nutrition of a patient;
- Establishment of an environment that promotes physical and mental health of a patient;
- Preparation and assistance with operative, diagnostic and therapeutic activities for the patient;
- Sutures first, second and third degree tears or episiotomy;
- Promotion of breastfeeding;
- Supervision and maintenance of elimination of mother and child;
- Facilitation of communication with mother,
- Father or family in the execution of the midwifery regimen;
- Co-ordination of the health care personnel;
- Provision of advocacy for mother and child to obtain appropriate health care; and
- Provision of care to the dying patient and a recently deceased patient within the execution of the midwifery regimen (SANC:R2488; SANC:R387; Bennet & Brown:1999; Fraser, Cooper & Nolte:2006; Sellers:1993; Sellers:1995; DOH:2000 and DOH:2002b).

The practice of midwifery in other countries is also regulated. A discussion of the scope of practice of midwives in Ireland follows. This scope of midwifery practice encompasses the range of roles, functions, responsibilities and activities in which a registered midwife is educated, competent, and has authority to perform (European Chapters Co-ordinating Council Directive:1980). The activities include:

- Provision of sound family planning information and advice;
- Diagnoses of pregnancy and monitoring of normal pregnancy;
- Prescription or advice on examination diagnosis of pregnancies at risk;
- Provision of a programme of preparation for parenthood and child birth;
- Monitoring conditions of mother and foetus during labour;

- Conduction of spontaneous deliveries and where necessary perform episiotomy and breech deliveries in urgent cases;
- Recognition of signs of abnormalities in both the mother and infant,
- Referal to the doctor, particularly manual removal of the placenta and manual examination of the uterus;
- Examination and care of the new-born and immediate resuscitation where necessary;
- Monitoring of mother and newborn in the postnatal period;
- Carrying out of treatment prescribed by the doctor and the maintenance of necessary records (ECC Council Directive:1980; Kaufmann 2002:27).

In California the licensed midwife practises under the supervision of a licensed physician and surgeon. The midwife's practice includes attendance of normal childbirth and provision of prenatal, intra-partum, postpartum care for mother and the newborn including family planning (Licensed Midwifery Practice Act of 1993).

The activities of midwives are regulated in all countries. Every midwife is expected to adhere to the standards and the scope of practice of midwives in the country in which they are practising their profession. In this study activities of midwives were determined and verified that they fall within the scope of practice of a midwife as determined by the SANC R2488 of 26 October 1990. Midwives who migrate to other countries are able to continue with their practice as each country regulates its practice.

A discussion on factors which cause or contribute to migration of nurses follows.

2.8 MIGRATION OF NURSES

According to the ICN 2004, nurses leave the nursing profession due to inadequate or inflexible policies that prevent them from choosing either part-time or full time employment or do not allow them to have managed career breaks or re-enter employment

in nursing.

Nurses may migrate due to the 'push' and 'pull' factors; where pull factors may be pay, professional development and improved career opportunities, or opportunity to experience life and work in a different culture (ICN 2005e:28; Buchan, Parkin & Sochalski 2003). Factors which act as 'push factors' in some countries are the impact of HIV/AIDS on the health system workers, and concerns about personal security in areas of conflict and economic instability (Buchan et al 1997; Buchan & Calman:2005e). Hamilton and Yau (2004) stated that emigration of health workers weakens the already failing health systems in the developing world. In a study conducted by Lorenzo (2002) on focus groups with nurses in the Phillipines, some of the 'push factors' identified were:

- Non-enforcement of existing laws that control and monitor nursing supply and demand,
- Absence of comprehensive human resource planning in health
- General unemployment rate in the country,
- Preference for urban and city life,
- Perceived weakness of nursing leadership to advocate for nurses,
- Failure to shift from traditional roles to innovative and entrepreneurial roles and
- Inability to influence decision and policy making bodies.

It is therefore important to support the training and the use of midwives with a view towards increasing the availability of skilled personnel (Goodburn & Campbell:2004). The midwife ensures patients safety and makes sure that the patients receive the best care possible (Mulaudzi, Mokoena & Troskie 2001:67; SANC R387).

2.9 CONCLUSION

The main concepts of the study were discussed by means of a literature review in detail in Chapter Two. A detailed discussion on the research design and research method is described in Chapter Three.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

Chapter three introduces the reader to the research design and research methodology of the study, using a quantitative, descriptive, and contextual design. The study was conducted at a level 2 public sector labour ward in Eastern Gauteng, in two phases. PHASE I was done in 3 steps and involved a description of the activities of midwives, and related to objective 1; grouping, summarising and categorisation of the activities and related to objective 2; and verification of the activities of midwives at a level 2 public sector labour ward and related to objective 3. PHASE II involved quantifying the time spent on each activity of a midwife at a level 2 labour ward and related to objective 4.

3.2 RESEARCH DESIGN

A quantitative, descriptive, and contextual design was used in this study. Each will be discussed in more detail.

3.2.1 Quantitative design

Quantitative design refers to a formal, objective systematic process in which numerical data are used to obtain information about the world (Burns & Grove 2001:26) In this study a formal process was followed to obtain data systematically from midwives working at a level 2 public sector labour ward. The researcher observed the midwives in their working setting and recorded the activities on a diary log sheet. Descriptive statistics were used to analyse the data.

3.2.2 Descriptive design

According to Burns and Groove (2001:248), descriptive designs are designed to gain more information about characteristics within a particular field of study with the purpose of providing a picture of situations as they naturally occur.

A descriptive design was used to collect information about the activities of midwives at a level 2 public sector labour ward. No variables were manipulated.

3.2.3 Research context

The research was undertaken in the labour ward of a level 2 public sector hospital in the Eastern Gauteng. The midwives allocated in this unit received patients with complications from level 1 labour wards, midwives obstetric units (MOU's), nearby clinics, community health care centres and general medical practitioners. The advanced midwives working at level 2 hospitals were also included. The doctors allocated in this labour ward were also expected to work in postnatal, antenatal, gynaecology wards, theatre and the intensive care unit. There is no specific routine such as caesarean section operation days, transfer days or admission days. Women were attended to as they came to the labour ward and according to their health needs.

To ensure reliability and replicability of the study the following table is included, which shows the disease profile, patients statistics, and staff working in the level 2 labour ward. During January 2006 – October 2006, the total number of midwives allocated in this labour ward per month was between 19 and 22. The number of midwives for day duty was 5 to 8 per shift. The number of midwives for night duty was 5 per shift. The other midwives were either off duty or on leave. The total number of normal deliveries per month was 800 to 1006 and the number of caesarean sections per month was 214 to 265. Refer to table 3.1 which provides an overview of the context in which this study was conducted.

Table 3.1 Overview of the context in which this study was conducted

	Statistics from January 2006 to October 2006									
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**
Delivery beds	15	15	15	15	15	15	15	15	15	15
Midwives who are:										
• **Chief professional nurses**	5	5	6	6	6	6	4	4	4	5
• **Senior professional nurses**	6	6	5	3	4	4	4	4	4	4
• **Professional nurses (junior)**	8	8	11	12	11	11	11	11	12	13
TOTAL	19	19	22	22	21	21	19	19	20	22
Midwives/shift on: (number varied)										
• **day duty**	5 -8	5 -8	5-8	5-8	5 -8	5-8	5 -8	5-8	5-8	5-8
• **night duty**	5	5	5	5	5	5	5	5	5	5
Caesarean sections	210	222	228	243	228	231	232	265	251	221
Normal vaginal deliveries	856	855	948	930	1006	933	990	981	898	800
Patients seen	1094	1097	1197	1186	1253	1185	1243	1260	1164	1036
HIV+ mothers delivered (including BBA)	79	67	87	103	97	112	123	122	125	99
Babies received Nevirapine	24	51	56	79	98	100	73	78	67	68
Nevirapine tablet dispensed in labour ward	31	20	35	33	40	51	35	59	49	20
Maternal deaths	0	0	2	1	0	6	3	4	2	2
Maternal mortality rate	0 per 1000	0 per 1000	1,70 per 1000	0,85 per 1000	0 per 1000	5,15 per 1000	2,45 per 1000	3,21 per 1000	1,74 per 1000	1,95 per 1000
Doctors per shift										
• **Consultant**	1	1	1	1	1	1	1	1	1	1
• **Medical officer**	2	2	2	2	2	2	2	2	2	2
• **Intern**	1	1	1	1	1	1	1	1	1	1
Total deliveries	**1066**	**1077**	**1176**	**1173**	**1234**	**1164**	**1222**	**1246**	**1149**	**1021**

According to data on table 3.1 the estimated ration for caesarean sections is 33%. An acceptable caesarean section ration is 15 to 18%. The caesarean sections were performed in the main theatre. The labour ward staff accompany the patient to theatre and receive the baby. A caesarean section of 33% is high for a public hospital and will impact on the workload and the burden of care.

3.3 RESEARCH METHOD

The research method consisted of 2 phases, PHASE 1 and PHASE II. Each phase will be discussed in detail.

3.3.1 PHASE I

PHASE 1 consisted of 3 steps, which were:

- Description of activities (step 1);
- Grouping, summarising and categorisation of activities (step 2); and
- Verification of activities (step 3).

Each step in PHASE 1 will be elaborated on.

3.3.1.1 Step 1

The first step involved the description of activities of midwives at a level 2 public sector labour ward and relates to the first objective of the study.

- ***Population***

The population was all midwives working in the level 2 public sector labour ward (N=20).

- ***Sample***

The researcher intended to sample all the days of the week, Monday to Sunday, and also intended to include all the 20 midwives who were working at a public sector labour ward during a 12 hour shift. The midwives were required to describe their activities more than once. The statistician was consulted in order to determine the number of shifts needed for the midwife to describe her activities.

- ***Data collection***

All 20 midwives working in the level 2 labour ward were requested to record their activities during a 12 hour shift period on a blank paper supplied by the researcher at least 3 times in a week over the 3 week period. As they would be busy most of the day midwives were requested to record this during their tea breaks and lunch breaks. In the event of a midwife not been able to record her activities because she was too busy or may have forgotten to add to her activities earlier, she was requested to complete the list before she went home at the end of the shift.

Every second day the researcher collected the lists of activities. The researcher requested that each midwife should complete a list of activities at least 3 times in a week. However, midwives stated that they were too busy to do this. Some midwives did not submit lists of activities and cited a problem of 'no time to write' because they were too busy.

During the first week the researcher collected six completed lists of activities. During the second week five completed lists of activities were collected. During the second week only three days of the week were covered, Monday, Tuesday and Wednesday. Two completed lists of activities were submitted for Tuesday and Wednesday.

The researcher managed to obtain 13 lists of activities that were completed over a 3 week period. Refer to table 3.2 for the number of completed lists of activities that were returned by the midwives. The researcher acknowledges that fewer lists of activities were collected than intended. Due to the low return rate the researcher carried out many checks

to ensure that all activities were in fact included. These checks were conducted under step 3 which was the verification of activities by advanced midwives.

Table 3.2 Number of completed lists of activities (with activities) returned by the midwives

	Sunday	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
Week 1	0	0	6	0	0	0	0
Week 2	0	1	2	2	0	0	0
Week 3	0	0	1	1	0	0	0

Although the midwives cited problems in writing up their activities, from the information provided it was possible to condense the activities. These were grouped, summarised and categorised under step 2 in details under the following discussion.

3.3.1.2 Step 2

Step 2 involved grouping, summarising and categorising of activities of midwives in a level 2 public sector labour ward and related to the second objective of the study. The activities described in step 1 of the study were then categorised by the researcher according to the categories described by Norrie (1997) and by Harrison and Nixon (2001).

In this study activities as described by the midwives were grouped into groups of similar activities. These were named as subcategories. The subcategories were further grouped to fit under a category heading. There were six categories. Each category was allocated a letter of the alphabet from A to F. The categories were named as follows:

- Direct nursing care = A

- Clerical nursing duties = B
- Patients assessment = C
- Timeout, patient focused activity =D
- Non nursing duties = E
- Timeout personal activity = F

Each subcategory was allocated a number. Each activity was recorded as an activity code and the activity code was used to complete the diary log sheet in PHASE II.

Example of activity code: The activity was recorded as A48 on the diary log sheet

A = category = Direct nursing care

48 = subcategory = immediate management of a newborn

3.3.1.3 Step 3

The third step involved verification of the list of activities developed from all the individual lists of activities received from midwives.

- ***Population***

In step 3 the population included advanced midwives working at level 2 hospitals in Gauteng Province. There are four level 2 hospitals in Eastern Gauteng. Three level 2 hospitals were used for verification of activities of midwives, and the 4th hospital where the study was conducted was excluded for selection of advanced midwives for verification.

- ***Sample***

A purposive selection of three advanced midwives was made. One midwife was selected

from each of the remaining 3 level 2 hospitals. The inclusion criteria included advanced midwives working at a level 2 public sector labour ward in Gauteng Province. Criteria for exclusion was that the activities of advanced midwives in academic settings involved student nurses training and are not involved in activities of the labour ward.

The advanced midwives were used to verify the activities as:

- They are 'hands on' and have knowledge about the activities of a midwife;
- They are involved in activities of the labour ward; and also
- They share certain characteristics of an advanced midwife and may have more activities than a midwife.

- ***Data collection***

Each selected advanced midwife received an information letter for verification of activities of midwives working at a level 2 public sector labour ward. The researcher handed the letters personally to each advanced midwife and explained its contents. Refer to **Appendix F** for the information letter to advanced midwives. Each advanced midwife was given a list of activities which was developed from the individual lists that were described by the midwives under PHASE I of step 1 of the study. The advanced midwives were asked if the activities described and categorised are a true reflection of the activities of a midwife in a level 2 labour ward setting. They were asked to add items that did not appear on the original list. The researcher collected the lists from each advanced midwife. The advanced midwives added some items that were not included on the original list. Refer to **Appendix L.**

The activities of a midwife are regulated by SANC R2488. It is therefore important for a midwife to function within the prescribed regulation. The Scope of Practice R2488 of 26 October 1990, as amended, was also analysed to verify what is expected of a midwife. Some items that are on the Scope of Practice of a midwife did not appear on the original list of activities, i.e promotion of breast feeding; instructing a patient in antenatal

exercises; and administration of pre-mixed gas and air analgesia to a patient. These items were not added because they are activities which are supposed to be done by midwives; in this study midwives were asked to write what they are doing not what they were expected to do. The researcher acknowledges that breastfeeding is an important activity after birth, but it is not done in this labour ward. The Scope of practice of a midwife (SANC:R2488) states that a midwife have to promote breastfeeding. The original list of activities developed from the individual lists of midwives and the list of activities developed from the activities that were added by three advanced midwives were used to develop the final list of activities. Refer to table 3.3 for the final list of activities of a midwife; classified into categories A, B, C, D, E and F). This final list was used for collection of data in PHASE II under step 4 of the study.

Table 3.3 The final list of activities of a midwife according to categories A, B, C, D, E, and F

Category A DIRECT NURSING CARE

Delivery of the baby	A	1	Overall supervision	A	35
Attending to the woman during labour	A	2	Preparing woman for C/section – Explaining the procedure, putting up An infusion line, inserting urinary Catheter	A	36
Receiving the baby	A	3	Admission of patient from ward 13 (ward 13 is an antenatal ward)	A	37
Suturing 1st degree tear	A	4	Managing pregnancy induced hypertension	A	38
Admission of patients from antenatal ward	A	5	Putting high risk patient on CTG machine	A	39
History taking	A	6	Preparing injections	A	40
Abdominal examination	A	7	Recording observations in antenatal file	A	41
Vaginal examination	A	8	Expulsion of blood clots post delivery	A	42
Monitoring vital data	A	9	Preparation for a blood transfusion	A	43
Management of woman during 4th stage of labour	A	10	Delivering placenta & membranes	A	44
Transferring woman to postnatal ward	A	11	Inserting indwelling urinary catheter-post delivery	A	45
Emergency management of eclampsia	A	12	Writing patients's identification belts	A	46
Carrying out doctor's orders	A	13	Preparation of patient for removal of retained placenta	A	47
Suturing of episiotomy	A	14	Immediate management of a newborn	A	48
Assessing fetal heart	A	15	Giving report to matron	A	49
Putting patient on RCTG	A	16	Regulating drip manually	A	50
Giving schedule 6 drug	A	17	Teaching student nurse how to do vaginal examination	A	51
Recording of schedule 6 & 7/nevirapine after Administration	A	18	Dispensing nevirapine syrup for baby	A	52
Checking of ward HB	A	19	Writing matron's report	A	53
Progressing of patient in active labour	A	20	Attending to baby born before arrival to Hospital	A	54
Handing over of report to night staff	A	21	Putting up blood transfusion of a woman post delivery	A	55
Identification of babies	A	22			
Transfer of babies to nursery	A	23			
Attending to a distressed baby	A	24			
Monitoring of fetal heart with fetoscope	A	25			

Receiving of a baby from theatre	A	26			
Assisting student nurses & intern Doctors with deliveries	A	27			
Collection of sedatives for ANC Patients	A	28			
Attending to patient from ambulance	A	29			
Replacing absorbed vacolitre with new vacolitre	A	30			
Taking schedule 6 & 7 drugs from drug cupboard	A	31			
Assisting obstetrician with a delivery	A	32			
Checking baby resuscitation trolley	A	33			
Resuscitating newborn baby	A	34			

Category B CLERICAL NURSING DUTIES

Counting the drugs and recording	B	1	Filing blood results/not on duty forms/SANC receipts	B	17
Orientation of new staff & new medical students	B	2	Recording delivery in maternity register	B	18
Roll call	B	3	Completing newborn records	B	19
Delegation	B	4	Assembling blood tubes	B	20
Checking of schedule 5,6,7 drugs	B	5	Completing B1 1663-death notification form	B	21
Checking of emergency trolley	B	6	Auditing patient's records/bedletter	B	22
Ordering of new equipments	B	7	Arranging bloodbook for blood ordering	B	23
Drafting off duties	B	8	Ordering dispensary	B	24
Writing of PPMS	B	9		B	25
Checking of files	B	10	Completing maternity leave forms	B	26
Checking of stock & ordering	B	11	Signing student nurses & doctors' files	B	27
Checking maternity register	B	12	Arranging baby bedletter	B	28
Check medicine trolley	B	13	Writing prescription chart	B	29
Checking of baby's trolley	B	14	Writing death report slip	B	30
Recording patients in admission book	B	15	Countersigning consent form	B	31
Calculation of overtime hours	B	16			

Category C PATIENTS ASSESSMENT

Handing over patient to night staff	C	1
Escorting woman for caesarean section	C	2
Transferring woman to ward 13	C	3
Accompaniment of patient to theatre (PPH)	C	4
Assisting paediatrician with resuscitation of baby	C	5
Taking over from labour ward midwives	C	6
Taking report	C	7
Discussion about patient's progress in labour	C	8
Assisting intern doctor interpreting to patient	C	9
Filing bedletter	C	10

Category D TIMEOUT, PATIENT FOCUSED ACTIVITY

Reassuring woman	D	1
Talking to patient's relatives	D	2
Answering phone in connection with patient	D	3
Phoning paediatrician for distressed baby	D	4
Discussion on on/off duties	D	5

Category E NON-NURSING DUTIES

Bedmaking	E	1	Restocking handwashing equipment	E	11
Tidy –up store room	E	2	Unpacking dispensary box with medications Checking stock from dispensary	E	12
Arrangement of stockroom	E	3	Negotiating for stock from other units	E	13
Preparation of delivery trolley	E	4	Completing transport form	E	14
Serving meals to patients	E	5	Cleaning of the refridgerator/resuscitation trolley/arranging teaching Aids	E	15
Discarding used delivery trolley	E	6	Checking of equipment Writing new equipment control book	E	16
Tidy up admission room	E	7	Handwashing	E	17
Reading & signing own progress report (performance)	E	8	Completing leave forms	E	18
planning leave	E	9	Checking of completed leave forms	E	19
Completing not on duty form	E	10			

Category F TIMEOUT PERSONAL ACTIVITY

Tea break	F	1	Attending to own injuries		5
Answering personal call	F	2	Checking salary advise slips		6
Lunch break	F	3	Idling –walking about/sitting quietly/standing quietly		7
Not in the ward	F	4	Reading newspaper		8

A detailed discussion on the collection of the data (activities) from the midwives by recording the activity code and the quantification of time spend on each category of activity follows.

3.3.2 PHASE II

The second phase of the study involved quantifying the time spent on each activity of a

midwife at a level 2 labour ward and related to the fourth objective of the study. The diary log sheet provided a means by which the researcher described the activity of the midwife at a particular time by means of the activity code.

- The diary log sheet is a data collection tool developed by the researcher to collect data from midwives working at a level 2 public sector labour ward. The diary log sheet was developed from the work of Hendrickson et al. (1990); Bradshaw et al. (1989) Norrie (1997); Harrison and Nixon (2001). These researchers studied the nursing activities in different intensive care units. No name or any form of identification of midwives appeared on the diary log sheet.
- The diary log sheet was developed to cover a period of 12 hours that a researcher required to observe each midwife in a clinical setting, which is at a level 2 public sector labour ward during the day. The diary log sheet also allowed the researcher to observe the midwives during the 12 hour period at 15 minutes intervals. Three midwives were observed by the researcher at a time.
- Columns for the following were provided on the diary log sheet for each of the three midwives who were observed during the 12 hour period: (refer to **Appendix B)**
    - Time
    - Activity code
    - Remarks

- ***Population***

In step 4 the total population was all midwives working in the level 2 public sector labour ward.

- ***Sample***

The researcher intended to sample the total population of midwives on duty during the day working a 12 hour shift at a level 2 public sector labour ward. Each midwife had to give a signed informed consent before participating in the study. All the days of the week would be included, i.e. Monday to Sunday. The researcher intended to observe each midwife twice a week over a period of two weeks. This amount was decided upon in consultation with a statistician and would reduce the effect of variables. The researcher therefore was required to complete at least 40 diary log sheets. Numbers ranging between 1 and 20 were allocated to each midwife.

In this study some of the midwives allocated in this labour ward worked on day duty for one week and then worked on night duty during the other week. Therefore all midwives on day and night duty were allocated numbers. Only midwives working during the day in that particular week were observed from 07h00 to 19h00. Midwives working on night duty were excluded because the maximum number of midwives allocated is five and they work for seven nights continuously and their hours covered per week are far more than the day staff. The study needed the researcher to observe each midwife over a period of two consecutive weeks without a break. **Appendix H** indicates the number of times each midwife was observed by the researcher. A discussion on the process of obtaining data from midwives follows. In this study the researcher collected data from observation.

Observation is a data collection procedure that may be used in research. The researcher *'does not set up artificial situations but looks at people in their natural settings'* (Holloway & Wheeler 1997). *'The researcher makes first hand observations of activities and interactions'*, and sometimes engages in those activities as a participant observer. The four types of observation are complete participation; participant as observer; observer as participant and complete observer. Observation may also be described under simple observation and participant observation, whilst Parahoo (1997) describes observation under two types, which are structured and unstructured.

Parahoo (1997) refers to Gold (1958) on the number of roles and positions that an observer can occupy. The roles are the same as the four types of observation described

above.

According to Patton (2002), data collected from observation consists of detailed descriptions of people's activities, behaviours, actions and a full range of interpersonal interactions and organisational processes that are observable human experiences.

The researcher has direct and personal contact with the people under the study in their own environment. She therefore gets close to the people under the study through physical proximity and observes their activities.

According to Polit and Beck (2004), observational research refers to '*studies in which data are collected by observing and recording behaviors or activities relating to a phenomenon of interest*'.

Description of the four (4) types of observation is as follows:

- Complete participant
  - Researcher participates in the activities or tasks in the setting
- Participant as observer
  - Researcher is part of the work group which is observed
- Complete observer
  - The researcher does not take part in the setting;
  - The working group do not notice the researcher; and
  - S/he does not impact on the situation.
- Observer as participant
  - The researcher participates only by being in the location;
  - Researcher's role involves more formal observation of the working group and entails less risks of getting overly involved in the work of the setting;
  - The researcher is only marginally involved;
  - S/he limits her/his interaction to seeking clarification of events going on;
  - The researcher is not part of the work group; and
  - The researcher announces her interests and her role to the working

group.

In this study, an observer as participant approach was used to collect data. The researcher who is a midwife and who does not work at this level 2 public sector hospital wore a uniform like the midwives working at this level 2 public sector labour ward. Any person who came to the ward would not identify her as a researcher as she looked like the labour ward staff. The researcher who was not working as a midwife during the course of the study, was in the position to assist with midwifery related tasks if required. This was seen as necessary due to the sensitive nature of a labour ward setting.

Parahoo (1997) described observation as structured and unstructured.

- Structured observation
    - The researcher decides in advance on the aspects of phenomenon which she intends to observe; and
    - When the schedule for observation is highly structured, there is very little for the observer to record other than ticking under the appropriate column
    - In this study the observations were structured. Only activities of midwives were observed at 15 minutes intervals; and no any other data was observed.
- Unstructured observation
    - The researcher does not have any pre-determined categories;
    - No set objectives or hypothesis at the beginning but are formulated during and after observation;
    - Data collected from unstructured observation may be used to formulate categories to be used in structured observation.

Parahoo (1997) made reference to Fitzpatrick, While and Roberts (1994); Kerlinger (1977) and Cormack (1984) who argued that '*direct observation is potentially a more comprehensive method to ascertain how a nurse performs in a real situation and to identify differences if any, in the practice of nurses*'. According to Field and Morse (1996:86), observation adds breath to research and provides answers to contextual

questions, which cannot be answered by an interview alone. The data collection process is discussed in detail in the section below.

- ***Data collection process***

The researcher obtained written permission to conduct the study from the relevant authorities, which are the Post Graduate Committee of the Faculty of Health Science; the Committee for Research on Human Subjects (Medical) of the University of the Witwatersrand (**Appendix D**: Ethics clearance number M040832); the Head of Gauteng Department of Health (**Appendix E**); and the verbal permission from the Head of Obstetrics and Gynaecology of a level 2 public sector labour ward.

The researcher approached the midwives that were on duty working at a level 2 public sector labour ward. Each midwife was given a letter asking her to participate in the study (refer to **Appendix A**). She explained to each midwife the contents of the letter, the purpose of the study, objectives and that only the activities of the midwife will be recorded in the form of an activity code and no any other data will be collected. The midwives who agreed to be in the study were given a consent form to sign (refer to **Appendix C**)

The researcher took an observer as participant approach, and observed and recorded the activities of each midwife at 15 minute intervals. In order to ensure consistency, data collection was done by the researcher only. Since there were no other data collectors no training was necessary in data collection. Observation of data was structured. The activities of a midwife that were to be observed were defined (refer final activity list **Table 3.3)**

Each activity was given an activity code formulated from a number (subcategory) and a letter of alphabet (category). Only an activity code was recorded on the diary log sheet. The midwife number, date and times when the activity was supposed to be observed was

written on the diary log sheet. The 15 minute intervals between each observation was also stipulated on the diary log sheet (refer to **Appendix B)** and included a 12 hour shift period in which each midwife was observed.

A systematic observation of activities of each midwife was made. Because the study involved human beings, the observations were done with each midwife's permission (consent signed). To eliminate the effect of the observer's presence, the researcher spent the first day of observation in the ward and pretended to be observing and recording activities of midwives on the diary log sheet. The researcher made first-hand observations of the midwife's activity and recorded on the diary log sheet as the midwife carried out her activities in the work setting in the level 2 labour ward. In order to eliminate bias because of recall the researcher recorded the activity at the time they occurred. There was therefore no need for the subjects to bring their responses to the researcher after performing an activity.

Observation of the first midwife commenced at 07h05, followed by the commencement of the second midwife at 07h10 and then the commencement of the third midwife at 07h15. Then the researcher went back to observe the first midwife at 07h20, followed by the second midwife at 07h25 and the third midwife at 07H30. The 3 midwives were observed at 15 minute intervals over a 12 hour period during day duty. All days of the week were included, Monday to Sunday. The activities of the midwife were recorded at 15 minute intervals by the researcher by writing the activity code which was represented by a letter of the alphabet (category) and a number (subcategory) in the appropriate box of the diary log sheet at the appropriate time. e.g A1; B12; F8. If the same activity was repeated it was recorded again. A column for remarks was provided on the diary log sheet for any activity which did not fall within the categories. Some activities that were not on the list were added during the observation.

The researcher intended making 40 observations during a 2 week period but only managed to make 35. She acknowledges that on some days a total of 3 midwives were not observed as intended, but that only two were observed because some had already

been observed and the other midwives were on leave (planned or unplanned) or off duty.

The mean indicates the balance point of the distribution or the centre of gravity (De Vos, Fouch`e & Delport 2005:232) and states how far above or below the mean any observation is. The mean is the most stable and versatile measure of central tendency, and is the arithmetical averages calculated by adding up all the responses and dividing by the total number of respondents (Mouton 2002; Frankfort-Nachmias & Leon-Guerrero 2000:123; Huysamen 1989).

3.4 RELIABILITY AND VALIDITY

Reliability refers to '*the consistency of the research instrument*' (Holloway & Wheeler 2002:252) or '*is the stability or consistency of the measurement*' (Gravetter & Forzane 2003:91; Monette, Sullivan & DeJong 2002:117). When different research participants are being tested by the same instrument at different times, they should respond identically to the instrument (Mouton 1996:144). Validity refers to '*the extent to which the instrument measures what it is suppose to measure*' (Holloway & Wheeler 2002:251-252); or the extent to which an empirical measure accurately reflects the concept it is intended to measure (Babbie 2004:143; Gravetter & Forzano 2003:87).

3.4.1 Content validity

Content validity is concerned with representativeness or sampling adequacy of the content (de Vos, Strydom, Fouch`e & Delport 2005:61). In order to ensure content validity, advanced midwives were asked to verify whether these were the activities of the midwife in a public sector level 2 labour ward and the activities were also compared to the Scope of Practice of midwives. According to Mouton (2002) reliability of the observation may be increased by using a variety of methods and techniques of data collection in a single study.

3.4.2 Population validity

The sample consisted of members who are representative of the total population concerned and were selected with regard to relevant criteria, that is, they are midwives at a level 2 public sector labour ward.

3.4.3 Generalisability

Generalisability means that the results and conclusions of the research study can be applied in other settings and populations that are similar to the study performed. All midwives who were on duty and also meeting the inclusion criterion were subjects for this study; and therefore represented the population of midwives in a level 2 labour ward. This was a good and fair reflection of what is happening at a level two public sector labour ward and therefore representative.

3.4.4 Consistency

Consistency means that the same instrument was used to collect data from all the midwives. To ensure consistency the same format of a diary log sheet was used to collect the data for each midwife in the study.

The researcher ensured a prolonged engagement in observing each midwife over a period of 12 hours in order to ensure increased trustworthiness.

3.4.5 Credibility

In order to ensure credibility, each midwife was observed in her work setting in a level 2

public sector labour ward. The environment and subjects were not manipulated. In order to reduce the observer effect, the researcher did not record the observations of the first day.

3.5 ETHICAL CONSIDERATIONS

In this study the researcher considered the aspects of ethical and legal rights throughout. The dignity, rights and safety of the participants and patients; and the safety and quality of the research was ensured at all times.

The researcher obtained permission to conduct this research (refer to **Appendix D**) from the University of Witwatersrand Postgraduate Committee of the Faculty of Health Science, Medical Committee for Research on Human Subjects, the Head of the Gauteng Department of Health (refer to **Appendix E**), the Chief Executive Office and Head of Obstetrics and Gynaecology Department of level 2 labour ward, the Area Manager of the labour ward, and the midwives who participated in the research. All midwives and advanced midwives for verification received a letter explaining the nature and purpose of the study (refer to **Appendix F**).

Participants were protected as follows:

- **Right to privacy**

  Each midwife who participated in the study had to give a written consent. No other person was allowed to gain access to raw data. No names, nor identifying information. Numbers were used on the diary log sheet. Whilst a midwife was delivering a patient, a verbal consent was asked from the patient. Raw data will be destroyed after examination and publication.

- **Right to anonymity and confidentiality**

  Numbers were assigned to each participating midwife. Names of midwives did not appear on the diary log sheet. Mouton and Marais (1996) emphasize anonymity of responses and observations.

- **Right to self-determination**

  Each participant was notified that she may withdraw from the study without any penalty. Informed written consent was given by the participant before engagement into the study. Refer to **Appendix C** for consent form and **Appendix A** for information in letter.

- **Right to fair treatment**

  The prospective participant was told that there will be no immediate benefit from the study. In the case where the participants wanted to withdraw from the study she could tell the researcher immediately, without penalty. The contact number of the researcher was made available to the prospective participants.

- **Entry into the research site**

  The study was only conducted after the response from the Head of Gauteng, Department of Health and Head of Obstetrics and Gynaecology department of the level 2 public sector labour ward.

- **Right to protection from harm**

  The prospective participants were informed that harm would be minimal. The researcher thought that the participants may be anxious when carrying out their activities under observation of the researcher. They were reassured that the

researcher was only observing activities and time spent on each activity; and would not collect data or nursing care for any other purpose.

- **Specific ethics related to observer as participant**

Everything that was said or done by the participants, and seen and heard by the researcher during this study was treated in the strictest confidence. In the event where a midwife performed an activity on a patient, the researcher obtained a verbal consent from the patient, parent or guardian to observe the midwife as she carried out that particular activity.

3.6 CONCLUSION

Chapter three discussed in detail the research design and method. Step 1, 2 and 3 of PHASE I; and PHASE II of the study. Reliability and validity were also discussed. Results and discussions of the study are discussed in Chapter four.

CHAPTER 4

RESULTS AND DISCUSSION

In Chapter four the researcher explains the results of the study.

4.1 INTRODUCTION

The results and discussion of results are provided in chapter four. Descriptive statistics were applied in analysing the data, which, once obtained were organised and summarised in order to render it more comprehensible (Mouton 2002:150; Nieswiadomy 1996:249). Babbie and Mouton (2003) state that descriptive statistics is a method for presenting quantitative descriptions in a manageable form. The results presented in chapter four relate to the analysis of PHASE II, which was the quantification of the time spent on each nursing activity.

In PHASE I, step 1, the researcher obtained 13 lists of activities performed by midwives which were completed by midwives over a period of 3 weeks. Refer to chapter 3, table 3.2. In step 2, activities were grouped into similar activities and named under subcategories, which were further grouped into categories.

In the PHASE II of the study the researcher observed 35 midwives over a 2 week period. Three midwives were observed at a time in nine days; and two midwives were observed at a time on four days. Refer to **Appendix G** for the total number of midwives observed during each 12 hour shift, and the number of times each category of activity (A = direct nursing care, B = clerical nursing care, C = patients assessment, D = timeout focused patient activity and E = non-nursing duties) was performed by each midwife. The number of times each midwife performed a particular activity category is indicated.

The researcher acknowledges that the number of observations made was less than what was intended.

4.2 RESULTS

4.2.1 Mean time per category per day (12 hour shift)

The researcher calculated the average time spent on each category of activity by each midwife during a 12 hour shift (presented above), which was converted to hours, minutes and seconds.

The average time a midwife spent on each category of activity =
average time spent on each category x time interval each midwife observed (15minutes) / 60 minutes.

Category A =632 / 35=18.057 X 15 min / 60 min = 4.514 hrs= 4 hrs, 30 min and 50 sec

Category B =194 / 35 = 5.542 X 15 min / 60 min = 1.385 hrs= 1 hr, 23 min and 6 sec

Category C =113 / 35 = 3.228 X 15 min / 60 min = 0.807 hrs= 48 min and 25 sec

Category D = 64 / 35 = 1.828 X 15 min / 60 min = 0.457 hrs= 27 min and 25 sec

Category E = 78 / 35 = 2.228 X 15 min / 60 min = 0.557 hrs= 33 min and 25 sec

Category F= 527 / 35 =15.057 X 15 min / 60 min = 3.764 hrs= 3 hrs, 45 min 57 sec

Total = 11 hours 48 minutes and 1 second.

The average hours worked by a midwife per day including tea and lunch is 11 hours 48 minutes and 1 second. Approximately 11 minutes were lost.

4.2.2 Percent of time per category

The total number of times each category of activity was performed by midwives over a period of 2 weeks as observed by the investigator is listed below; which is converted to percentages. Refer to table 4.1.

Table 4.1 The total number of times each category of activity was performed over 2 weeks and percent of time spent on each category

Category of activity	**Total number of times activity under a category was performed in a 2 week period**	**Percentage of time spent on activity under a category**
Direct nursing care (A)	632	39.30%
Clerical nursing care (B)	194	12.06%
Patient assessment (C)	113	7.02%
Time-out patient focused activity (D)	64	3..8%
Non-nursing duties (E)	78	4.85%
Timeout personal activity (F)	527	32.77%
Total	**1608**	**99.98%**

Midwives spent 39.30% of their time on direct nursing and 32.77% of their time on timeout personal activities (refer to Figure 4.1 Pie graph).

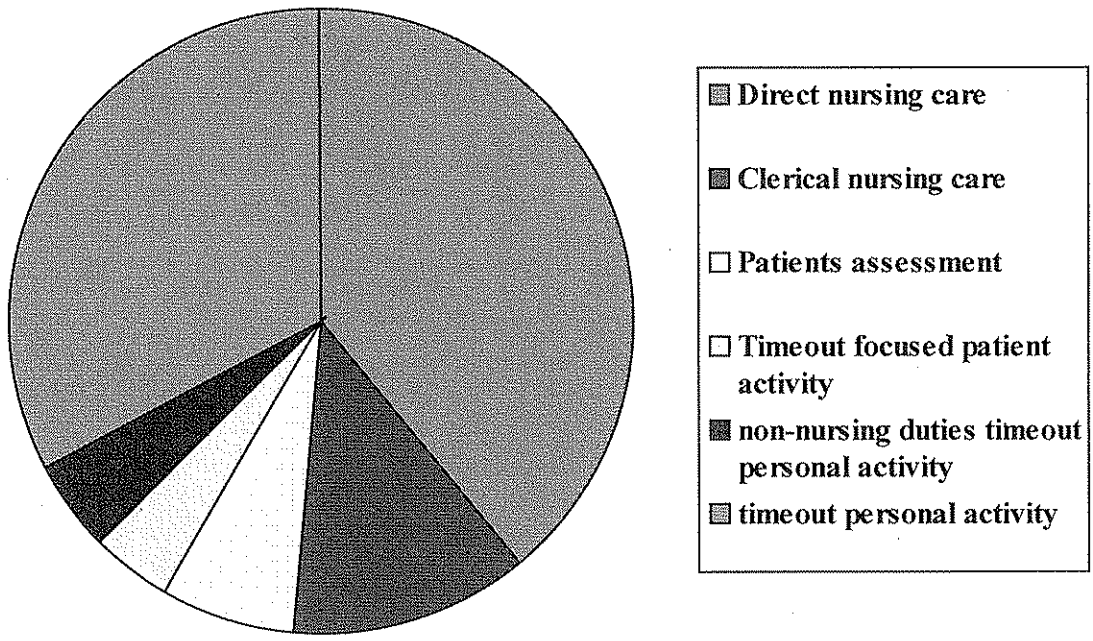

Figure 4.1 indicates the percentage of time spent on each over a period of 2 weeks.

4.3 DISCUSSION

This study categorised the activities of the midwife. The categories were the same as those used in previous research done in ICU. Midwives at a level 2 hospital were involved in the following categories of activities:

- Direct nursing care: 4 hours 30 minutes and 50 seconds (39.3%);
- Timeout personal activity: 3 hours 45 minutes and 57 seconds (32.77%);
- Clerical nursing duties for 1 hour 23 minutes and 6 seconds (12.6%).
- Patient assessment: 48 minutes and 25 seconds (7.02%);
- Timeout, patient focused activity midwives: 27 minutes and 25 seconds (3.98%);
- Non-nursing activity: 33 minutes and 25 seconds (4.85%).

According to SANC Regulation 2488 of 26 October 1990 as amended, a midwife is expected not to leave a pregnant woman in labour if the second stage of labour is imminent or until birth, and to stay with patient one hour after expulsion of the placenta and membranes. There is a concern about the large quantity of time midwives spend outside the labour ward. Midwives at this level two hospital are also required to accompany patients to theatre for caesarean section; to collect drugs from the dispensary visit the administration building to resolve various personal administration problems. The large amount of time that level two midwives spend out of the labour ward performing tasks that need not be carried out by a midwife needs to be explored more fully. Perhaps it would be useful to further investigate whether all these activities can be performed by an enrolled nurse or other category of nurses.

Timeout focused patient activities were less frequently performed. Timeout focused patient activities involves activities done to improve quality of care and encourage recovery through involvement of patient and family. One may have expected midwives to spend more time on timeout focused patient activities, as midwives are suppose to empower the patient and family.

Most of the activities performed in this unit fall within the intrapartum tasks of the fourth competency domain discussed in the International Confederation of Midwives' study of essential competencies of midwifery practice by Fullerton, Severino, Brogan and Thompson (2003).

4.3.1 Direct nursing care (category A)

Most midwives spent most of their time on this category of activities (4 hours 30 minutes and 50 seconds (39.3%). The category included activities such as admission of patient from antenatal ward, resuscitating newborn baby, performing vaginal examinations, progressing a patient in labour, etc. As midwifery is a clinical specialty it is not surprising that midwives spent most of their time on direct nursing care.

Midwives spent less time on direct nursing care than nurses in other studies. In Bradshaw

et al. (1989) nurses spent 51.1% of their time on direct nursing care, and in Hendrickson et al. (1990) Norrie (1997) and Harrison and Nixon (2001) nurses spent 41%, 41% and 24% of their time on direct nursing care respectively.

4.3.2 Clerical nursing duties (category B)

Clerical nursing duties are activities which involve record keeping done according to national, hospital or unit policy, for example recording a delivery in the maternity register, completing newborn records, ordering from the dispensary or writing a death report slip.

This activity was the third most commonly performed activity. In comparison with data from the previous studies by Harrison and Nixon (2001) and Norrie (1997) their findings also indicated that clerical nursing duties is the third most commonly performed category of activities in the ICU units.

4.3.3 Timeout personal activity (category F)

Timeout personal activity includes tea or lunch breaks, answering personal calls (cell phone), or not in the ward (so as to carry out a personal task). Some midwives never left the labour ward. The highest number of times timeout personal activity was performed by a midwife was 26 times and the least number of times that timeout personal activity was performed was 5. Midwives spent 15% of their time on timeout personal activities.

There were numerous differences noted between this study and the studies conducted by Harrison and Nixon (2001) and Norrie (1997) with respect to timeout personal activities. These previous studies were conducted in an intensive care unit, whereas this study was conducted in a labour ward. The midwife in the labour ward takes care of two patients at once (pregnant woman and her unborn baby). ICU patients are very ill, often on ventilators and need continuous observations whilst the pregnant women seen in the

labour ward may come and deliver without complications then transferred to postnatal ward, and those that complicate are transferred to other wards. For example, a patient with foetal distress or retained placenta and membranes is taken to theatre, or intensive care unit if the complication is life threatening and patient needs continuous monitoring. However, the researcher is concerned with the amount of time that the midwives spent on timeout personal activities. In previous studies by Harrison and Nixon (2001) and Norrie (1997) nurses spent between 3 and 7% of their time on timeout personal activities whereas in this study midwives spent as much as 15% of their time on timeout personal activities. There appears to be evidence of poor time management on the part of midwives in a level two labour ward, which may be contributing to inability to manage the workload.

4.3.4 Timeout focused patient activity (category D)

A small amount of time was spent on communication with the patient (includes reassurance) in Harrison and Nixon (2001)'s study in ICU. In this study, midwives only spent 3.98% of their time or a daily average of 27 minutes and 25 seconds of their time on timeout focused patient activity. Some midwives were found to spend more time communicating with their patients than others. The doula system is not practiced in this unit. This system may support the midwife as the care may be transferred to the doula whilst the midwife is busy with other activities.

The findings must be viewed with some caution as interaction with patient often takes place whilst the midwife is engaged in another activity, for example suturing an episiotomy or putting up an intravenous infusion. The method of data collection required the observer to enter one activity per 15 minute period, and may have entered the physical care being undertaken as opposed to the communication activity.

Another activity under this category is talking to patient relatives. Women are not supported during labour by partners, relatives and friends. The high number of caesarean

sections performed in this unit may be attributed to lack of companionship in labour. Penn-Kekana and Blaauw (2004) refers to the study on pain relief provided in the labour ward, in an environment with a high percentage of women having complicated labours at Mowbray level 2 Hospital in the Western Cape, also found that 60,2% of patients had no birth companion. Birth companions improve the quality of the birthing experience for women.

4.3.5 Non nursing duties (category E)

Midwives spent 4.85% of their time on non-nursing duties. Non nursing duties were also seldomly performed by nurses in studies conducted by Harrison and Nixon (2001) and Norrie (1997). Non nursing duties are activities that may be performed by any other person other than the nurse in ICU or the midwife in the labour ward, for example, arrangement of the store room, tidy up admission room or completing not on duty form.

Findings on a study conducted in the Republic of Ireland on midwives and student midwives on skill mix issues in midwifery by McKenna and Hasson (2002) indicated that midwives welcome support in many areas of their work and also indicated those activities that midwives mentioned that they may not be done by another person who is not a midwife. Non nursing duties are important as they also determine the quality and effectiveness of nursing activities.

4.3.6 Patients assessment (category C)

Midwives spent 7.02% of their time on patient assessment. In the studies by Harrison and Nixon (2001) and Norrie (1997) nurses in ICU units spent 38% and 22% of their time on patient assessment.

4.4 CONCLUSION

By means of a summary the results obtained in this study are reflected in a table with the

results obtained by Harrison and Nixon (2001) and Norrie (1997). Refer to table 4.5.

Table 4.2 A comparison of the results of the study on activities of midwives with the previous studies on nursing activities (ICU units)

Category of activity	Harrison & Nixon (2001) (%)	Norrie (1997) (%)	Activities of midwives (%)
A-Direct nursing care	24	41	39.3
B-Clerical nursing duties	17	19	12.06
C-Patients assessment	38	22	7.02
D-Timeout patient focused	6	-	3.98
E-Non-nursing duties	4	7	4.85
F-Timeout personal activity	10	11	32.77
Other	1	-	0.02

CHAPTER 5

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The following are included in chapter five, conclusion, limitations and the recommendations for the study.

5.1 CONCLUSION

This study determined that a midwife at a level 2 hospital in Gauteng spend 84% of her time on patient related activities. This is 2% more than a comparative study of Norrie (1997). Factors not considered in this study are that midwifery is not comparable with general nursing because the midwife has two patients; and the burden of care of the midwifery cases in a level 2 facility in Gauteng is not comparable with an ICU. (A level 2 facility is a referral hospital where lower levels refer to women with complications, implying that more care is needed in safer environment). Midwifery is more comparable with a theatre and casualty unit.

In previous studies by Harrison and Nixon (2001) and Norrie (1997) nurses spent between 3 and 7% of their time on timeout personal activities whereas in this study midwives spent as much as 32,77% of their time on timeout personal activities. (includes all activities of a midwife outside the unit, where the researcher could not follow the midwife). Furthermore, the average hours worked by a midwife per day including tea and lunch is 11 hours and 48 minutes.

5.2 LIMITATIONS OF THE STUDY

The labour ward environment is unpredictable in nature. Some days may have been different from other days because of the type of patients presenting with different problems. For example, some patients came in and delivered; and others had to be taken to theatre for caesarean section, which resulted in the midwife leaving the ward with the patient. Limitations are seen as follows:

- The first phase of data collection where the midwives were asked to write their activities on a blank sheet was not done on all the days. Midwives cited a problem of 'no time' to complete the sheets because they were 'too busy'.

- In some instances the researcher had to direct the relatives or patients to the toilet or exit doors from the labour ward. Patients and relatives would not know that she was a researcher, as she was in a uniform like the other midwives in the ward.

- Observation of some midwives was not commenced as scheduled because the midwives reported late on duty; and as a result the 12 hour shift was not covered.

- The data collection method in this study required the researcher to identify an activity at a 15 minute interval, whereas in reality several activities would have been undertaken simultaneously (e.g while suturing an episiotomy she may also be giving a health education on perineal care).

- The researcher aimed at completing forty (40) diary log sheets, but only thirty five (35) were completed. Two midwives who would have been on the sample had to take leave and the other midwife who also met the inclusion criteria did not give her consent to participate in the study.

- The study does not compare this information with any other indicator for reproductive health of the WHO but only focus on maternal mortality in a given

context level 2 labour ward in Gauteng. Findings may therefore not be transferable because of contextual factors of ratios, skill mix and burden of care factors.

- Quality issues, core competencies of midwives and contextual factors like the influence of doulas on the activities of midwives are not considered in this study

- There is no acuity levels determined so far for labour wards.

5.3 RECOMMENDATIONS

This study has provided data that has identified the activities of midwives working at a level 2 public sector labour ward, which may be used in examining safe staffing in level 2 labour wards.

The researcher would like to make the following recommendations:

5.3.1 Midwifery practice

The researcher recommends that this study on activities of midwives be followed up with more studies of this nature, or that other labour wards may use these guidelines to determine staffing issues for comparison.

Many variables need to be taken into consideration when norms and standards for safe staffing for labour wards are established. The variables include staff mix, burden of care, quality issues, core competencies of midwives, and contextual factors like the influence of the doulas on the activities of midwives.

The doula system is recommended for this unit because it may support the midwife with other activities. The patient will therefore have support from the doula whilst the midwife is busy with other activities.

Midwives in this unit have to promote breastfeeding, and assist mothers to put their babies on the breast. This is an important activity of a midwife which is also stipulated under the Scope of practice of a midwife (SANC:R2488).

Another recommendation is to compare findings of this study with the Western Cape. Maternal health outcomes in the Western Cape are the best in South Africa, and if compared with the staff ratios, their staff ratio nurse per population and nurse per doctor are the best in South Africa. Western Cape is the province with the best resourced health services (Jewkes, Abrahams & Mvo 1998:1783).

5.3.2 Nursing research

This study is a good starting point to address one of the unresolved recommendations of the Save mothers report which is norms and standards for obstetric care in terms of staff and equipments.

Another quantitative descriptive study should be conducted in order to identify activities of midwives in level 1 and 3 public sector labour wards. The amount of time spent on timeout personal activity category by midwives is recommended to be the subject for further research.

This study is only a step that fills the gap for lack of information systems. The problem of "system failure" and lack of health information systems is complex.

5.4 CONCLUSION

The aim of the study was achieved. The aim of the study was to determine the activities of a midwife at a level 2 public sector labour ward and to quantify the average time spent by a midwife on each activity. The objectives of the study were achieved. The objectives included; description of activities of midwives working at a level 2 public sector labour ward; grouping, summarizing and categorization of activities; verification of the activities

and quantification of time spent by a midwife on each category of activity.

The study was good because the methodology was rigorous and replicated studies done in other countries. It is the first time that a study of this nature has been conducted in a labour ward in South Africa. The study also contributed to the body of science by providing statistics in South Africa which was not done before.

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APPENDIX A Information letter to midwives working at a level 2 public sector Labour ward

30 Coalbrook Street
South Hills
2197

Dear Midwife

I Moshibudi Florence Mukwevho, invite you to participate in the research study which is titled: THE ACTIVITIES OF A MIDWIFE AT A LEVEL 2 PUBLIC SECTOR LABOUR WARD IN EASTERN GAUTENG. I am a professional nurse studying at the University of Witwatersrand for the degree Masters of Science in Nursing. In order to fulfil the degree, I am required to conduct a research study independently.

This study will be done in phases. In phase I you will be asked to record your work activities on a blank sheet which will be provided by the researcher; and in phase II you will be observed by the researcher as you carry out your duties in your working setting. Your activities will be recorded at 15-minutes intervals by the researcher by writing the activity code, which is represented by an alphabet (category) and a number (subcategory) in the appropriate box of the diary log sheet.

All that will be said or done by you, and all that will be seen and heard by the researcher during this study will be treated in the strictest confidence. If you are doing an activity that involves a patient, the researcher will obtain a verbal consent from the patient, parent or guardian. The rights of the patient will be protected at all times.

No other data will be collected by observation other than the recording of the activity code at the specified time by the researcher. If you are out of the ward 'timeout-personal,' will be written. You may withdraw from participating in the study at any stage, and there will be no penalty. There will be no immediate benefits for participating. Recommendations from the research findings will be forwarded to the hospital management and head of obstetrics and gynaecology department. Your names will not be used. You will be allocated a number.

If you agree to participate in this study, you are also expected to sign the consent form attached.

Hope my request will be considered.

Yours sincerely,

Moshibudi Florence Mukwevho
Tel: 011 623 1181 (H)
011 644 8954 (W)

APPENDIX B Diary log sheet

Activities of midwives in level 2 public sector labour ward.

MIDWIFE: 1			MIDWIFE : 2			MIDWIFE: 3		
Time	**Activity Code**	**Remarks**	**Time**	**Activity Code**	**Remarks**	**Time**	**Activity Code**	**Remarks**
07H05			07H10			07H15		
07H20			07H25			07H30		
07H35			07H40			07H45		
07H50			07H55			08H00		
08H05			08H10			08H15		
08H20			08H25			08H30		
08H35			08H40			08H45		
08H50			08H55			09H00		
09H05			09H10			09H15		
09H20			09H25			09H30		
09H35			09H40			09H45		
09H50			09H55			10H00		
10H05			10H10			10H15		
10H20			10H25			10H30		
10H35			10H40			10H45		
10H50			10H55			11H00		
11H05			11H10			11H15		
11H20			11H25			11H30		
11H35			11H40			11H45		
11H50			11H55			11H60		
12H05			12H10			12H15		
12H20			12H25			12H30		
12H35			12H40			12H45		
12H50			12H55			13H00		
13H05			13H10			13H15		
13H20			13H25			13H30		
13H35			13H40			13H45		
13h50			13H55			14H00		
14H05			14H10			14H15		
14H20			14H25			14H30		
14H35			14H40			14H45		
14H50			14H55			15H00		
15H05			15H10			15H15		
15H20			15H25			15H30		
15H35			15H40			15H45		
15H50			15H55			16H00		
16H05			16H10			16H15		
16H20			16H25			16H30		
16H35			16H40			16H45		
16H50			16H55			17H00		
17H05			17H10			17H15		
17H20			17H25			17H30		
17H35			17H40			17H45		
17H50			17H55			18H00		
18H05			18H10			18H15		
18H20			18H25			18H30		
18H35			18H40			18H45		
18H50			18H55			19H00		

APPENDIX C Consent form

I.....give permission to participate in the research study which is titled: 'THE ACITIVITIES OF A MIDWIFE AT A LEVEL 2 PUBLIC SECTOR LABOUR WARD IN EASTERN GAUTENG.'

The researcher explained the nature and the purpose of the study to me. Everything I do and say during this study will be treated in the strictest confidence. I also understand that I can decline to participate in the study at any time if I do not wish to continue to be the subject of the study. No penalty will be imposed on me.

Signed at.....on the.....of.....2004

Signature of the subject.....

Witness.....

Signature of researcher.....

APPENDIX D Wits Postgraduate Committee, Medical committee for research on Human subjects clearance certificate

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Mukwevho

CLEARANCE CERTIFICATE	PROTOCOL NUMBER M040832
PROJECT	The Activities of Midwifes in a Level II Public Sector Labour Ward in Eastern Gauteng
INVESTIGATORS	Mrs MF Mukwevho
DEPARTMENT	School of Therapeutic Sciences
DATE CONSIDERED	04.08.27
DECISION OF THE COMMITTEE*	Approved unconditionally

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE 04.09.28 CHAIRPERSON .....
(Professor PE Cleaton-Jones)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor : Ms C Bodkin

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10005, 10th Floor, Senate House, University.
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. I **agree to a completion of a yearly progress report.**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

APPENDIX E Gauteng Provincial Department of Health Permission

The results should aid more satisfactory planning and staffing in a priority area. More visible attention to the working condition or frustrations of staff may also well have benefits.

Financial implications:

The researcher will finance the study.

Conclusion:

The project seems to be acceptable. Objective 3 (step 3) needs to be reviewed and explained further in the methodology.

Recommendation:

This study has been conducted for academic purpose. We have no objection to grant permission.

Evaluators: Dr M L Likibi/ Prof Lucy Wagstaff.

Research and Epidemiology unit.
Tel: 011-355-3310
Fax: 011-355-3338
Cell: 0827819921
E-mail: MupataL@gpg.gov.za

Approved /~~not approved/ approved as amended.~~

HOD

Dr L Rispel
14/12/2004

Cc: MS S. Dumela
Dr N Nxundu
Dr M Ahern
Dr A Rahman
Research data base

APPENDIX F Information letter to advanced midwives

30 Coalbrook Street
South Hills
2197

Dear Advanced midwife

I MOSHIBUDI FLORENCE MUKWEVHO, invite you to participate in the research study which is titled: 'THE ACTIVITIES OF A MIDWIFE AT A LEVEL 2 PUBLIC SECTOR LABOUR WARD IN EASTERN GAUTENG.'

I am a professional nurse studying at the University of Witwatersrand for the degree of Master of Science in Nursing.

In order to fulfill the degree, I am required to conduct a research study independently. Your names will not be used. In this study you will be asked to verify the activities of midwives in a level 2 labour ward setting. The study will be done in phases. The midwives will describe the activities in step 1; the activities will be grouped, summarized and categorized in step 2; and in step 3 you will be asked to go through a list of activities which will be send or given to you so that you can add and verify the activities with the Scope of Practice of midwives.

There will be no immediate benefits for participating. Recommendations from the research findings will be forwarded to the hospital management and head of obstetrics and gynaecology department.

Hope my request will be considered.
Yours faithfully,
Moshibudi Florence Mukwevho
011 623 1181 (H)
011 644 8954 (W)

APPENDIX G

Table The total number of midwives observed during each 12 hour shift, and the number of times each category of activity was performed by each midwife.

			ACTIVITY CATEGORY					
Day	Total Midwives observed in a 12 hour shift	Midwife identity number	A	B	C	D	E	F
			-	-	-	-	-	-
			-	-	-	-	-	-
			-	-	-	-	-	-
		2	7	27	0	3	0	11
		3	22	10	2	2	1	12
		6	21	1	1	4	4	17
		5	21	6	6	0	2	13
		6	15	2	4	0	1	26
		7	21	1	7	2	1	16
		9	17	2	2	2	3	22
		8	23	4	3	1	4	13
		8	17	5	6	6	0	14
		1	24	2	2	3	1	16
		9	27	5	1	5	0	10
		2	7	1	4	0	1	10
		3	10	0	1	0	2	12
		5	8	0	2	2	1	12
		2	9	3	11	1	3	22
		1	18	11	3	1	0	14
		5	11	2	6	1	3	25
		5	10	5	4	4	1	24
		6	19	8	1	1	1	18
		7	23	1	4	0	2	18
		1	19	4	6	0	6	13
		20	26	2	2	2	4	12

		1	11	12	3	2	9	11
		2	19	7	4	6	1	11
		8	17	7	3	0	0	21
		6	19	6	3	4	4	12
		7	18	6	4	2	2	16
		3	20	6	1	0	3	18
		1	14	19	2	0	1	12
		7	29	7	2	1	2	7
		3	11	5	2	1	4	25
		8	20	2	2	1	3	20
		20	33	2	1	1	1	10
		8	22	5	5	3	2	11
		8	22	5	5	3	2	11
		20	30	3	2	3	2	5

APPENDIX H

Table Number of times each midwife was observed by the researcher

	WEEK 1								**WEEK 2**						
Date → Midwife ↓	**Sun 13**	Mon 14	Tue 15	Wed 16	Thu 17	Fri 18	Sat 19		**Sun 20**	Mon 21	Tue 22	Wed 23	Thu 24	Fri 25	Sun 26
1	R	R	R		**Y**		**Y**			**Y**	**Y**		**Y**	R	R
2	R	**Y**		R	R	**Y**	**Y**		R	R	**Y**			R	R
3	R	**Y**		R	R	**Y**				R	R	**Y**	**Y**	R	R
4		R	R	L	L	R	R		R	ND	ND	ND	ND	ND	ND
5	R		**Y**	R	R	**Y**	**Y**		**Y**	R	R			R	R
6	R	**Y**	**Y**	R	R				**Y**	R	R	**Y**		R	R
7	R		**Y**	R	R				**Y**	R	R	**Y**	**Y**	R	R
8		R	R	**Y**	**Y**	R	R		R		**Y**	R	R	**Y**	**Y**
9		R	R	**Y**	**Y**	R	R		ND	ND	ND	ND	ND	ND	ND
10	**	**	**	**	**	**	**		**	**	**	**	**	**	**
11	**	**	**	**	**	**	**		**	**	**	**	**	**	**
12	ND	ND	ND	ND	ND	ND	ND		R	R	R	R	R	R	R
13	ND	ND	ND	ND	ND	ND	ND		R	R	R	R	R	R	R
14	ND	ND	ND	ND	ND	ND	ND		R	R	R	R	R	R	R
15	ND	ND	ND	ND	ND	ND	ND		R	R	R	R	R	R	R
16	ND	ND	ND	ND	ND	ND	ND		R	R	R	R	R	R	R
17	R	R	R	R	R	R	R		L	L	L	L	L	L	L
18	ND	R	R	R	R	R	R		ND	ND	ND	ND	ND	ND	ND
19	""	""	""	""	""	""	""		""	""	""	""	""	""	""
20	ND	R	R	R	R	R	R		R	**Y**	R	R	R	**Y**	**Y**

R = Resting day/night

L = Leave (planned / unplanned)

ND = night duty

** = does not meet inclusion criteria

""= no interest in the study

Y = midwife observed by researcher on that day

APPENDIX I

Table Number of times each category of activity was performed by midwives during each 12 hour shift period

Number of m/wives observed	3	3	2	3	3	3	3	2	3	3	3	2	2	Total ΣX
Date	14	15	16	17	18	19	20	21	22	23	24	25	26	
Category A	50	57	40	68	25	38	51	45	47	57	50	52	52	632
Category B	38	9	6	12	1	16	14	5	26	18	32	6	11	194
Category C	3	17	5	9	7	20	9	9	10	8	6	3	7	113
Category D	9	2	3	14	2	3	5	2	8	6	2	2	6	64
Category E	5	4	7	1	4	7	5	10	10	9	9	3	4	78
Category F	37	55	35	40	35	60	60	25	43	46	45	30	16	527
TOTAL	144	144	96	144	74	144	136	96	144	144	144	96	96	1608

APPENDIX J

Table Total number of times each category of activity was performed over 2 weeks

	CATEGORY						
Total number of midwives during a 12 hour shift	A	B	C	D	E	F	TOTAL
3	50	38	3	9	5	37	144
3	57	9	17	2	4	55	144
2	40	6	5	3	7	35	96
3	68	12	9	14	1	40	144
3	25	1	7	2	4	35	74
3	38	16	20	3	7	60	144
3	51	14	9	5	5	60	136
2	45	5	9	2	10	25	96
3	47	26	10	8	10	43	144
3	57	18	8	6	9	46	144
3	50	32	6	2	9	45	144
2	52	6	3	2	3	30	96
2	52	11	7	6	4	16	96
TOTAL	632	194	113	64	78	528	1608

APPENDIX K

Table Indicates category of activities performed by midwives in percentages (%) during each 12 hour shift.

	1	2	3	4	5	6	7	8	9	10	11	12	13
A	34,72	39,58	41,66	47,2	26,38	26,38	35,41	46,87	32,63	39,58	34,72	54,16	54,16
B	26,38	6,25	6,25	8,33	11,11	11,11	9,72	5,20	18,05	12,5	22,22	6,25	11,45
C	2,08	11,80	5,20	6,25	13,88	13,88	6,25	9,37	6,94	5,55	4,16	3,12	7,29
D	6,25	1,38	3,125	9,72	2,08	2,08	3,47	2,08	5,55	4,16	1,38	2,08	6,25
E	3,47	2,77	7,29	0,69	4,86	4,86	3,47	10,41	6,94	6,25	6,25	3,12	4,16
F	27,08	38,19	36,45	27,77	41,66	41,66	41,66	26,04	29,86	31,94	31,25	31,25	16,66
	99,98	99,97	99,97	99,96	99,97	99,97	99,98	99,97	99,97	99,98	99,98	99,98	99,97

APPENDIX L

Activities that were added by the advanced midwives to the list of activities described by midwives in PHASE 1, under step1. (some items were repeated and others were phrased differently)

- Collecting cord blood post delivery for coombs test
- Plotting of paartogram during labour
- Analyzing the partogram
- Identification of mother
- Taking care of patients' valuables eg. cellphones
- Laying of corpses
- Conducting NVD to student nurses
- Administration of nevirapine tablet to HIV+ women in labour
- Administration of nevirapine syrup to babies of HIV+ MOTHERS
- Attending to mothers aborting
- Accompaniment of patient to tertiary / other institution
- Performing vacuum deliveries under doctor'supervision
- Identify problems and call doctor eg. abnormal CTG
- Attend to complaints and concerns from the public
- Attend to the phone enquiries
- Attend meetings when necessary
- Attend to a mother during and after delivery of a stillborn
- In the absence of doctor manage Postpartum haemrrhage
- Follow up and notification of maternal deaths in the whole hospital
- Compile daily and monthly statistics
- Prepare for perinatal mortality meetings
- Daily report writing on activities that happened in the last 24hours
- Conflict management between nurse and nurse, nurse and doctor
- Management of cord prolapse
- Writing a diet slate daily
- Do rapid Rhesus test to unbooked patients
- Pitting up drip in cases of emergency
- Transferring corpse to mortuary with a porter
- Arranging with doctor to fill a death certificate
- Getting consent for incineration of a baby
- Check blood results
- Control of visitors
- Calling social worker for social problems
- Check specimens if all sent to laboratory
- Prepare doctor's round trolley
- Management of (APH) ante-partum haemorrhage
- Supervising Doulas and keep them at ease
- Handling of human tissue according to policy
- Monitor patient on induced labour
- Midnight census
- 2 hourly head count
- Filling requisition for repairs, maintenance
- Give inservice education
- Read and write in communication book
- Check cribs, suction and oxygen apparatus readiness
- Review treatment with doctor
- Control linen
- Complete missing person forms
- Check expiry date of drugs, vacolitres
- Health and safety report on monthly basis
- Order schedule drugs and collect
- Write statement for all incidents/injuries