

**A STUDY ON FACTORS CONTRIBUTING TO
OBSTETRIC REFERRAL FROM MPULUNGU
URBAN CLINIC TO MBALA HOSPITAL,
ZAMBIA**

BY

MACKSON BANDA

UNZA

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**THE UNIVERSITY OF ZAMBIA SCHOOL OF
MEDICINE DEPARTMENT OF POST BASIC
NURSING**

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MACKSON BANDA

ZRN 1992 (KITWE)

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Permission to undertake a research study.

Consent form

Letter of Authority from the department of Post-basic nursing – UNZA.

Marking key to knowledge questions

ABSTRACT

The purpose of the study was to determine factors contributing to obstetric referrals from Mpulungu Urban Clinic to Mbala Hospital, so that measures could be taken to correct the situation.

Literature reviewed included global, regional and national literature. From the literature reviewed, it was discovered that most of the reasons given for obstetrical complications and maternal death were similar.

A descriptive cross sectional retrospective study design was used in conducting the study of factors contributing to obstetrical referrals from Mpulungu Urban to Mbala District Hospital.

The questionnaires were administered to all eleven (11) nurses/midwives who were conveniently selected. The checklist to record data from all 289 referred women with obstetric complications from 2002 to 2005 first quarter was used. Data analysis was done manually. The raw data from the study were collected and edited for completeness, uniformity and accuracy. The data was coded while those from open-ended questions were transcribed using content analysis. The coded data were entered on the Data Master Sheet.

The data were summarized and presented in the of frequency tables, cross tabulations, percentages, pie charts and graph to facilitate easy understanding of the factors contributing to obstetrical referral from Mpulungu Urban clinic to Mbala District Hospital.

The study findings revealed contributing factors to increased obstetrical referrals.

The major factor was inadequate knowledge of nurses in management women in labour. There were ineffective use of a partograph and it was not always available.

The other factor, that came out were erratic supply of the surgical supplies and none existence of labour ward protocols including the referral criterion. Non-existence of the labour ward protocols meant that the nurses were not properly guided on when to make referrals. The study also revealed critical shortage of nurses/midwives.

The study also revealed that each pregnancy was at risk regardless of the age of the woman and parity. Therefore, each pregnancy should be given the attention it deserves. It also revealed that late attendance of women to labour ward was another contributing factor.

Finally, the study revealed the common obstetrical cases that were referred. Several recommendations have been made to MOH, GNC, DHMT, Health Centre and the community.

The major recommendation made is that there is need for general nursing and midwifery to be merged so that the problem of shortage of midwives is dealt with. In the curriculum there is also need to incorporate a standard or use the WHO partogram design, which has pre-printed alert and action lines for Nursing Training Schools.

The GNC should inspect for the presence and effective use of the partograph in schools and health facilities.

A network with other organisations involved in educating the community on maternal and Child Health needs to be established, including the recipients of the services.

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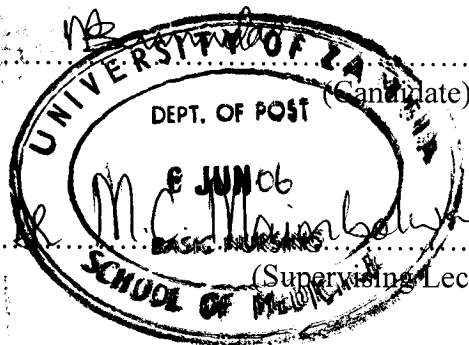
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DECLARATION

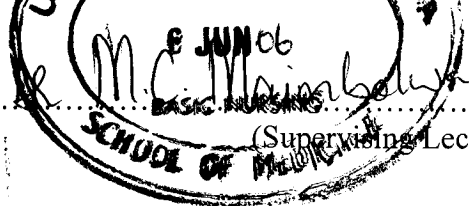
I Mackson Banda declare that the work presented in this study for a Bachelor of science Degree in Nursing has not been presented either wholly or in part for any other degree, and is not being currently submitted for any other degree.

SIGNED BY.....



(Candidate)

SIGNED BY.....



(Supervising Lecturer)

STATEMENT

I hereby testify that this study is entirely the result of my own independent investigation. The various sources to which I am indebted are clearly indicated in the text and in the references.

SIGNED BY Mamunda
(Candidate)

DEDICATION

I dedicate this study to my sons Chandi, Stephen, Junior Mackson daughter Staphel for their understanding, patience and support.

To my daughter Vele who was denied fatherly love at a very tender age when she needed it most.

To my wife Loveness for her love, care encouragement and hard work which has made me, be what I am today.

To my nephew Paul, Mother in Law Staphel for assisting in taking care of my children during my study.

LIST OF ABBREVIATIONS

APH	-	Antepartum Haemorrhage
ANC	-	Ante Natal Care
CPD	-	Cephalo Pelvic Disproportion
DHMT	-	District Health Management Team
EOC	-	Essential Obstetric Care
GNC	-	General Nursing Council
HIV	-	Human Immuno Deficiency Virus
ITG	-	Integrated Technical Guideline for Health Workers
IUD	-	Intra Uterine Death
MCH	-	Maternal Child Health
MOH	-	Ministry of Health
OPP	-	Occipital Posterior Position
PPH	-	Post Partum Haemorrhage
PNC	-	Post Natal Care
RVF	-	Rectal Vagina Fistula
UN	-	United Nations
UTH	-	University Teaching Hospital
WHO	-	World Health Organisation
ZDHS	-	Zambia Demographic Health Survey.

CHAPTER 1

1.0 INTRODUCTION

Obstetric referral refers to any woman with obstetric complication transferred to another Health facility where care and management can be obtained. (Bennette and Brown 2000)

Obstetric referral is sought when a woman in labour develops complications such as haemorrhage, obstructed labour, eclampsia e.t.c.

According to the World Health Organisation report indicates that haemorrhage, sepsis, unsafe abortion, pregnancy related hypertension and obstructed labour are the common major obstetric complications in Africa (WHO 2000).

WHO (2000) states that in Africa, there is an increase in the number of maternal death during the last decade from 870 per every 100,000 live births in 1990 to 1000 per 100,000 live births in 2001.

Maternal death is one of the common used indicator to measure pregnancy outcome (Oakley 1983).

In Zambia, the maternal mortality rate is estimated at 729 per 100,000 live births. The majority of obstetric complications which cause maternal mortality are haemorrhage, eclampsia, sepsis, ruptured uterus and complication of abortion (ZDHS 2002).

1.1 BACKGROUND INFORMATION

Zambia's economy started declining from 1974. The fall in copper prices, rising oil prices and slow pace of industrialisation drove the economy to a very difficult situation (ZDHS 2002). It resulted into the government not funding the health sector adequately. The problem worsened with the sale of parastatal companies in the third republic.

Most people in the formal employment were retrenched hence they can not afford to pay for health services and send their children to school. The low social economic status, coupled with illiteracy, long distance to health facilities and cultural practices have disadvantaged the population including pregnant women to better quality health services.

Because of the inadequate health services compounded by shortage of skilled attendants at delivery, pregnant women have experienced increased obstetrical complication that has resulted to obstetrical referrals and some of the women die.

The problems of obstetrical complications are also seen at Mpulungu Urban Clinic which result in mothers being referred to Mbala District Hospital in the Northern Province of Zambia.

1.2 STATEMENT OF THE PROBLEM

Mpulungu urban clinic has been referring pregnant women with obstetric complications to Mbala Hospital for Essential Obstetric care because there are no facilities to cater for EOC at the District. According to WHO (1994), the maximum standard of women requiring Essential Obstetric Care is 15%, but at Mpulungu Urban Clinic the cases has even increased to 16.6 percent first quarter 2005.

The trend has been observed since 2002 up to first quarter 2005. The table below shows the population for each year starting from 2002 up to 2005, expected pregnancies per year, expected deliveries per year, actual institutional deliveries per year and referred obstetric cases to Mbala Hospital.

Table 1: Mpulungu Urban Clinic Catchment Population and number of women referred to Mbala Hospital.

Year	2002	2003	2004	2005 1 st Quarter
Population	30171	31030	36255	37741
Expected Pregnancies 5.4%	1629	1676	1958	510
Expected Deliveries 5.2%	1569	1614	1885	491
Actual Institutional Deliveries	704	827	851	210
Referred cases %	74 10.5%	77 9.3%	103 12.1%	35 16.6%

From this table above, it is clear that obstetric referrals to Mbala Hospital have been increasing. Although the main aim of the obstetric referrals is to prevent maternal deaths, they have implications on the clients and the clinic. Mothers under go apprehension upon informing them that they are being referred. These mothers referred to Mbala Hospital are required by the Hospital to purchase their own drugs, needles, syringes and other required items during hospitalisation.

1.3 RESEARCH QUESTION

Why is there an increase of mothers with obstetric complications referred from Mpulungu Urban Clinic to Mbala Hospital

1.4 FACTORS INFLUENCING PROBLEMS

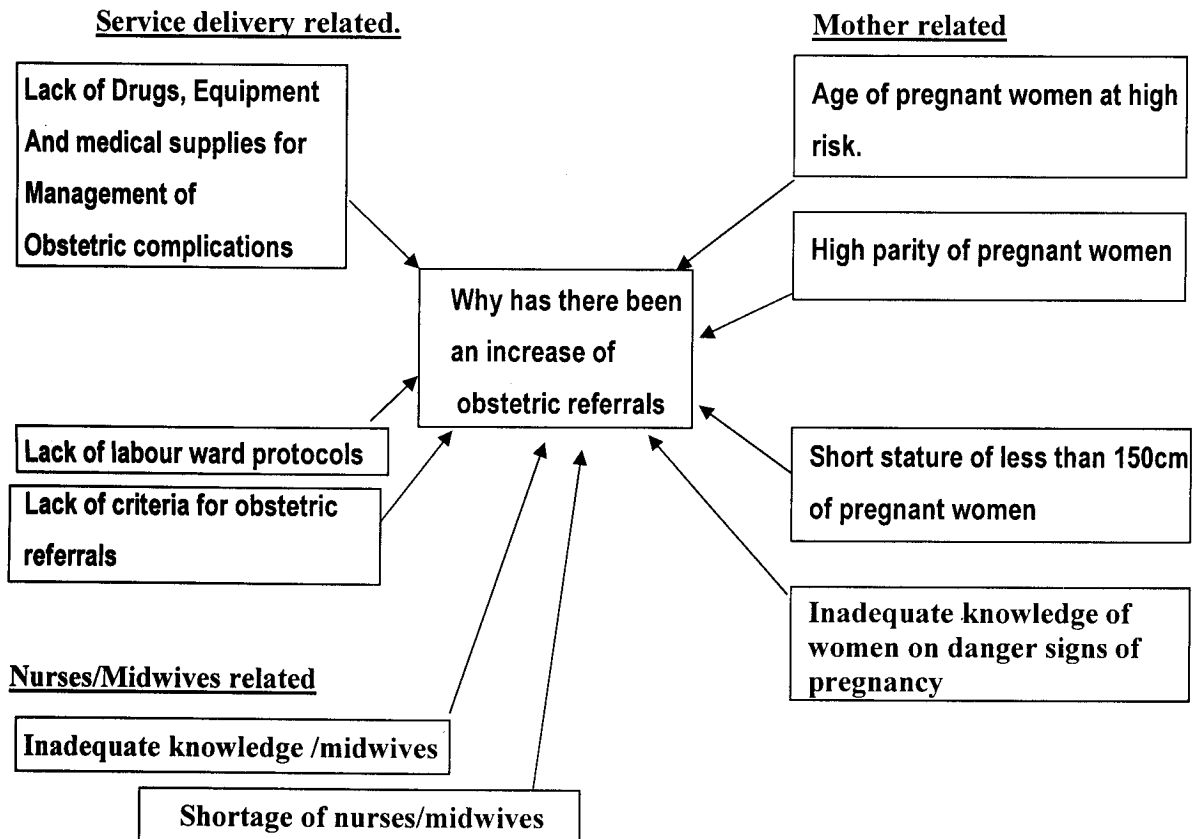
According to the WHO/UN statement, the risk of developing an obstetric complication and consequently dying in the richer and developed countries is at least 100 fold smaller than in the poorer countries in Africa and Asia. (Safe motherhood – 2000)

The problem of low social economic status of women is not left only to other parts of Zambia but also to Mpulungu district. This problem is coupled with illiteracy among women. Women can not make informed decisions on matters of reproductive health. The decisions are made by their husbands. Women face a lot of problems in accessing health services because of long distances to health facilities, in-ability to pay for the health services and barriers due to cultural practices.

The other reason is the increase of young girls getting pregnant. Young women below the age of 16 years are at high risk of developing obstetric complications because of immature reproductive system. Also short women of less than 150cm in height are at high risk of developing obstetric complications because of inadequate pelvis.

In-adequate knowledge of nurses/midwives about management of obstetric emergencies coupled with lack of essential equipment, surgical supplies and drugs increase the chances of pregnant women developing obstetric complication.

1.5 FIGURE 1: PROBLEM ANALYSIS Service delivery related.



1.6 JUSTIFICATION OF THE STUDY

The study seeks to address the problem of increased obstetrical referrals with the purpose of finding ways of reducing unnecessary referrals. It also seeks to improve on the assessment of pregnant women..

1.7 OBJECTIVES

1.7.1 GENERAL OBJECTIVE

To determine the reasons why there is an increase in pregnant mothers being referred to Mbala Hospital from Mpulungu Urban Clinic.

1.7.2 SPECIFIC OBJECTIVE

- To assess the knowledge of nurses about management of women in labour.
- To find out the obstetric cases referred to Mbala Hospital.
- To identify the age of the women with obstetric complications in order to check whether they fall in the risk age group or not.

1.8 HYPOTHESIS

- (i) The lower the levels of knowledge of nurses about management of women in labour, the higher the obstetric referrals.
- (ii) The higher the availability of equipment, drugs, medical and surgical supplies for obstetric cases, the lower the obstetrical referrals.

1.9 OPERATIONAL DEFINITIONS OF TERMS

Antenatal Mother	- A pregnant woman .
Antenatal care	- Medical care and supervision of pregnant women .
Complication	- A new problem or illness that makes treatment of previous one more complicated or difficult.
Delivery Register	- Official record or list of deliveries.
Essential Obstetric Care	- Emergency care (Including operation procedures) given to an Antenatal , Intrapartum, and postpartum mother in case of complications.
Haemorrhage	- Bleeding during pregnancy, labour and puerperium. It Includes antepartum and postpartum bleeding but excludes bleeding from abortion and ectopic pregnancy .
Health facility	- A place where medical management or care can be

obtained on hospital, health centre, or private surgery in both rural and urban.

High risk mothers	- Pregnant women predisposed to complications during pregnancy, labour, puerperium.
Maternity	- Motherhood or the state of being or becoming a mother.
Maternal mortality	- Death of a woman while pregnant or within 42 days after termination of pregnancy irrespective of the duration and site of the pregnancy from any cause related to or aggravated by pregnancy or its management but not from accidental or incidental causes.
Maternal mortality rate	- The number of deaths registered during the year of women dying from causes attributed to pregnancy and child birth per 1,000 registered total (Live and still) births in the year .
“Near Miss”	- A situation when a serious accidental or a disaster very nearly happens.
Obstetric complication	- Any difficulties during pregnancy, delivery, or the post partum period.
Obstetric referral	- A woman with obstetric complication transferred to another Health facility where care and management can be obtained .
Parity	- The number of pregnancies a woman has had reaching up to 28 weeks including the present pregnancy.
Post natal care	- Medical management or care of a woman from delivery up to 6 weeks later.
Post natal mother	- A woman who have delivered up to 6 weeks later.
Traditional Birth Attendants	- (TBA) woman in the community who assist in delivering at home but has no formal mid wifely education.
Trained Traditional Birth Attendants	- (tTBA) women in the community who assist in delivering at home and have formal mid wifely education.

1.10 VARIABLES

In this study, the following variables shall be used.

The independent variables include knowledge, training, reproductive protocols, age and parity.

The dependent variable is the obstetric referral.

1.10.1 TABLE 2: VARIABLES, INDICATORS AND CUT OFF POINT

Variable	Indicator	Cut Off Point
Knowledge	High	Nurses/midwives able to answer 3 questions from question 17-20 correctly and also able to answer 4 questions from question 21, 22,23,24,26 correctly.
	Moderate	Nurses/midwives able to answer 2 questions from question 17-20 correctly and also able to answer 3 questions from question 21, 22,23,24,26 correctly.
	Low	Nurses/midwives able to answer 1 question from question 17-20 correctly and also able to answer 2 and below questions from question 21, 22,23,24,26 correctly.
Training	Adequate	If the answer to question (7) is (Yes).
	Inadequate	If the answer to question (7) is (NO).
Protocols	Available	Presence of criteria for obstetric referral and any other protocol on management of labour. Questions 29 to 32
	Not available	Absence of any protocol on management of labour including criteria of obstetric referral. Questions 29 to 32
Age of pregnant women referred	High risk	Pregnant women with obstetric complications aged below 16 and above 35 years. Check list - No 1.
	Low risk	Pregnant women with obstetric complications aged between 16 to 34 years. Check list – No. 1.
Parity of pregnant women referred	High risk	Parity of 6 and above Check list – No. 5
	Low risk	Parity of 5 and below. Check list – No. 5
Resources (Equipment,	Adequate	Presence of 10 – 16 items under categories of equipment, surgical supplies and drugs. Questions 9 – 14.

surgical supplies and drugs)	Inadequate	Presence of item below 10 under categories of equipment, surgical supplies and drugs. Questions 9 – 14.
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CHAPTER 2

2.0 LITERATURE REVIEW

2.1 INTRODUCTION

Literature review starts with defining the term complication as a new problem or illness that makes treatment of previous one more complicated or difficult. Therefore obstetric complication is referred to as any difficulties or complications during pregnancy, delivery, or the post partum period. Obstetric complications are divided into two the direct i.e. complication that results due to pregnancy, delivery or post partum and the indirect, i.e. complication that result from other condition which occur in pregnancy, labour or puerperium.

Obstetric complication if not handled well leads to maternal mortality, hence the need for obstetric referrals for the purpose of seeking essential obstetric care. Maternal mortality estimates remain a sensitive indicator of provision of and up take of health services, it offers a litmus test of the status of women, their access to health care system in responding to their needs. It not only tells us about the risks of pregnancy and child birth, but also for what it implies about women's health in general and by extension, their social and economic status.

2.2 GLOBAL PERSPECTIVE.

The world Health organization estimates that of the over 585 000 maternal death s that occur worldwide each year, 99% are in the developing world (WHO, 1987, 1991, 1996).

According to the WHO/UN (United Nation) population fund, UN international children's Funds World Bank statement (safe mother mood-2000), The maternal mortality ratio is nearly 20 times higher at 480 per 100,000 live births.

The risk of dying as a result of a given pregnancy in the richer and developed countries is at least 100 fold smaller than in the poorer countries in Africa and Asia

The statement (safe Mother Hood and repro watch 2000) indicated that the direct causes of maternal mortality were complications of hemorrhage, infection-sepsis, hypertension and obstructed labour. It also mentioned other factors which included low social economic status and in accessibility of maternal health care due to cultural practices.

A Costa et al (2000) gave a statement on the present and future of maternal mortality in Latin America which stipulated that 23,000 maternal deaths per year occur in Latin America and Caribbean? It further states that most of the woman affected are from low social economic back grounds, like in remote places and have a low level of education. It went further to state that the most causes of maternal mortality were complications of hemorrhage, infections, and hypertension induced by pregnancy.

Khoun et al 2000 did a cross section study on complications of pregnancy and child birth: Knowledge and practices of women in rural Bangladesh. They assessed knowledge and care-seeking behaviour of rural Bangladesh women in 2 different areas regarding obstetric complications. A total of 1566 women were interviewed in their homes on who had a pregnancy outcome during the last one year. The results showed that an average of 70% of the women had knowledge about three or more types of pregnancy and / or child birth-related complications. The complications included edema, prolonged labour, bleeding and fever for more than 3 days after delivery. The study also revealed that an average of 33% postnatal complications were handled by trained providers and 51% of the women sought antenatal care from trained providers or visited health facilities.

Khosia et al (2000) article high lighted the cause of maternal mortality due to pregnancy and child birth complications, as well as initiation of strategies in decreasing maternal mortality rate in rural India. A review of 31 maternal death cases from January to December 1995 and

interviews of 224 patients with acute organ system dysfunction secondary to pregnancy and childbirth complications were conducted. Major causes of maternal mortality were eclampsia and pregnancy related sepsis. In addition, with interviews with the survivors revealed that the causes of "near miss" condition were the absence of antenatal care and deliveries and induced abortions conducted by untrained village midwives.

Population Reference Bureau (PRB). MEASURE Communication (2000) gave a report that maternal deaths have both direct and indirect causes. About 80% of maternal deaths are due to unsafe abortion and obstetric complications such as bleeding, infection, hypertensive disorders, and obstructed labour. The environment in which women live also influences maternal health. Maternal deaths are strongly associated with substandard health services and the lack of medical supplies at the time of labour, delivery and immediately after birth. Interventions can improve the chances of women's survival as well as infants' lives. The basic steps for a safer pregnancy and childbirth are to ensure recognition of complications of pregnancy and delivery, ensure access to essential obstetric care, provide post partum care for mother and baby, and provide post abortion care.

2.3 REGIONAL PERSPECTIVE.

Researchers conducted a study in the cities of 6 West African countries namely Burkina Faso, Cote d'Ivoire, Mali, Mauritania, Niger and Senegal. The study examined the incidence of pregnancy – related morbidity and mortality. Maternity wards with midwives and doctors were accessible in each study area, all of the cities also afforded easy access to hospitals where women could be seen for obstetric complications. Pregnant women were identified and were asked to participate in four survey interviews: One each at enrolment at 32 – 36 weeks gestation, at delivery and 60 days later. Some home visits included physical examination but researchers explained to the women that the examinations were only for the purpose of the study. They encouraged participants to get regular medical care.

In all 20,326 pregnant women participated. The researchers findings were that some women develop obstetric complications despite accessible care. Some, with these

complications died. Some 1215, (5.9%) women experienced severe obstetric complications such as haemorrhage requiring blood transfusion, or hospitalization, dystocia (mainly obstructed or prolonged labour uterine perforation) hypertensive disorders and sepsis.

Forty-one women or one woman for every 32 with severe complications died of these conditions. Haemorrhage was the common complication, followed by Dystocia and then Hypertensive disorders. The least complication was sepsis (*Hollander 2000*).

A community-based incidence case referent study was under taken in a rural and urban setting in Zimbabwe in order to define risk factors associated with maternal deaths at family, community, primary and referral health care levels.

Referent subjects were drawn from place or area of delivery for each consecutive maternal death. The study used multiple source confidential reporting net work of maternal deaths and maternal mortality rate for the rural setting was 168/100,000 live births while the urban setting was 85/100 000 live births.

The study also designed a model for interacting factors which revealed that obstetric complications of Haemorrhage, abortion and puerperal sepsis, and eclampsia were the leading cause of maternal deaths. It also revealed that maternal deaths were found in situations where pregnant women lack or had diminished social support. The study also revealed that age >35 years and parity >6 were significant risk factors for maternal mortality (*Mbizvo et al 1993*)

2.4 NATIONAL PERSPECTIVE

A study was conducted on pregnancy related referrals to the Essential Obstetric care facility at University Teaching Hospital (Susan et al, 2001). Admission registers were reviewed for pregnancy related referrals made during the months of January and February 1999. Nearly 7% of cases did not have the reasons for referrals stated, so it was acknowledged that such facility register data tends to be imperfect. During the 2 – month study period there were 2820 referrals. The highest proportion of pregnancy referrals was due to complication of abortion, accounting for 14.6% of the total number of referrals. At the time of the study UTH was the only centre with facilities to carry out manual vacuum aspiration for abortion complications. Hypertensive disorders and eclampsia accounted for 192 (6.6%) referrals in the 2 month period.

Malaria, an important indirect cause of maternal mortality and morbidity, accounted for 1122 (3.9%) while the highest proportion of referrals 465 (16.1%) of women in Labour had no complication that required referral. (Susan et al. 2001)

Another study was conducted in Zambia by Reproductive Health Team on Safe Motherhood (Reproductive Health Newsletter –2000). The purpose of the study was to describe the availability, use and quality of safe motherhood care in Zambia. In (9) districts, (11) hospitals and (102) health centres were surveyed. Some of the key findings were; policies need to be developed to enable the provision of obstetric care at the district and health centre level, especially those policies that nurses and midwives can do; quality of all aspects of maternity care is in need of improvement; there is lack of midwives at many health facilities and this compromises the care that is able to be provided, especially in rural areas; many providers are in need of updates on maternal care and related issues; many essential equipment, supplies and drugs are not available; Information, Education, Communication materials for maternity care are not available and management information collection and usage needs to be improved at all levels.

In conclusion, the most common obstetric complications are hemorrhages, infections and pregnancy-induced hypertension worldwide. The obstetric cases are made worse by low social economic background in developing countries including Zambia.

CHAPTER 3

3.0 RESEARCH METHODOLOGY

3.1 Research Design

A study design is a plan or a strategy for conducting the study. A descriptive cross sectional retrospective study design was used in conducting the study of factors contributing to obstetrical referrals from Mpulungu urban clinic to Mbala District hospital. A descriptive research design is one which aims predominately at describing phenomena rather than explaining them. Descriptive studies are not concerned with relationship among variables, but their purpose is to observe, describe and document aspects of a situation. A cross sectional study is a method of collecting data at one point in time. (Polit and Hungler 1997). The information got was valid at that particular point in time. The design was appropriate because it was used in one short period of time. The design made the study easy to manage, less expensive and the attrition of respondents was prevented.

On the other hand the retrospective design is a method of study which begins with dependent variables and looks backward for the independent variable (Polit and Hungler 1997). It was appropriate to the study because it reviewed data of referred women with obstetric complications from 2002 up to 2005 in the first quarter. It was also a useful technique and provided a great deal of insight.

3.2 Research Settings

Research setting is the physical location and conditions in which data collection takes place in a study (Polit and Hungler 1997). The study was conducted in labour ward at Mpulungu Urban Clinic. Mpulungu Urban Clinic is one of the seven health centres found in Mpulungu District in Northern Province of the Republic of Zambia. It is situated 30 meters away to the north of the district health office. The health centre is very near to the banks of lake Tanganyika which is shared by the Democratic Republic of Congo (west) and the Republic of Tanzania (north). It is also 39 km away from Mbala, 212 km from Kasama the provincial headquarters and 1212 km from the capital city – Lusaka. It is accessible by both road and water. The health centre has a catchment area population of 37 741 and bed capacity of 65. The centre has the following departments, in-patient, out patient, laboratory, MCH, isolation ward, kitchen stores, and labour ward. The labour ward provides delivery services for mothers and referred those with obstetric complications to Mbala Hospital. The labour ward has two delivery beds. The staff establishment of midwives at the clinic were 16. Out of those 16 midwives, 8 are supposed to work in labour ward. Unfortunately, the clinic has only 4 midwives who carry out all maternal and child health activities including delivery of pregnant women. Because of the shortage of midwives, all 7 general nurses at the clinic assisted them in delivering pregnant women. They conducted deliveries, besides their general nursing activities. The average number of deliveries conducted per month was 50.

3.3 Study Population

Polit and Hungler(1997) defined study population as the entire set of individual or objects having some common characteristics. In this study it included the pregnant women who came to be delivered at the clinic and nurses/midwives who conducted the deliveries.

3.4 Sample Selection

Sample selection refers to the process of selecting apportion of the population to represent the entire population (Polit and Hungler 1997). In the study data from the delivery registers for all 289 mothers who were referred to Mbala Hospital with obstetric complications for the past five years were reviewed. All nurses/midwives who conducted deliveries at the clinic were conveniently selected. Convenient sampling is defined as selection of the most readily available persons (or units) as participants in the study (polit and Hungler 1997).

3.5 Sample Size

Sample size is a sub set of a population selected to participate in a research (Polit and Hungler 1997). In this study, the data on all 289 referred women with obstetric complications from 2002 to 2005 first quarter were reviewed. All 11 nurses/midwives were selected to participate in the study.

3.6 Data Collection Tool

Data collection tool refers to the instruments or equipment used to collect data (Treece and Treece 1986). In this study, the researcher used a check list to record data from the delivery registers on women referred to Mbala District Hospital between 2002 to 2005 first quarter. The questionnaire with closed and open ended questions was used to collect data from nurses/midwives.

3.7 Data Collection Technique

Data collection technique refers to an approach of using the data collection tool (Treece and Treece 1997). The Researcher collected data using a self administered questionnaire to nurses/midwives and a check list to record data from the delivery registers for mothers who were referred to Mbala Hospital with obstetric complications. The questionnaire was considered to be more appropriate because all the respondents were literate. An open ended question allowed the respondents to complete the questionnaire items with an appropriate response in one's own words. An open ended question was used to develop responses for closed

ended items, to taste the respondent's knowledge of the topic, to explore a topic in depth, to arouse the subject's interest and to collect the opinion. A closed ended question allowed the respondents to give answers which were limited to the choices offered to them.

3.8 Pilot Study

A pilot study is defined as a small scale study or trial run done in preparation for a major study (Polit and Hungler 1997). The Researcher conducted a pilot study in Vyamba catchment area at Vyamba clinic in Mpulungu district. The study included all the steps of data collection and analysis except the number of subjects were on a smaller scale. It was done in order to acquaint the researcher with the problems to be corrected in preparation for the larger research project. During the pilot study, the instruments went through a pre-test. The purpose of the pilot study was to detect errors and flaws in the instrument in order to improve the research project. Amendments were done on the cut off point of the variable-knowledge..

3.9 Validity

Validity is a degree to which an instrument measures what it intends to measure (Polit and Hungler 1997). The researcher ensured that the questionnaire was able to actually test what it was supposed to test by pre-testing it in the pilot study before coming up with a final questionnaire. Errors and flaws were corrected. Both closed and open ended questions had been included in the questionnaire, so that validity was upheld

3.10 Reliability

Reliability is the degree of consistency or dependability with which an instrument measures the attribute it is designed to measure. The researcher ensured that the questionnaire was able to produce consistent and accurate data when administered to different respondents by pre-testing it in a pilot study.

3.11 Ethical Consideration

Ethics is a system of moral values that is concerned with the degree to which research procedures adhere to professionals, legal and social obligations to the study participants (Polit and Hungler1997).Permission to conduct the study was obtained from the District Director of Health in Mpulungu District. Consent was also obtained from the in-charge of the clinic. Brief explanation on the purpose of the

study was given to the respondents in order to get permission before administering the questionnaire to the respondents. The respondents were assured that no name of any one would appear on the questionnaire or any document. Therefore, they were requested to feel free and give full information which was truthful. . A written

consent given to the respondents to sign indicating that the respondents had given the researcher consent to participate in the study.

CHAPTER 4

4.0 Data Analysis

Data analysis is the systematic organisation and synthesis of research data and the testing of research hypotheses using the same data, (Polit and Hungler1997). In this study, manual analysis of data will be done. The raw data were collected and edited for completeness, uniformity and accuracy. The data was coded. Responses from closed ended questions were coded, while those from open ended questions were transcribed using content analysis. The coded data were entered on the data master sheet for manual analysis. Data from the data master sheet were partitioned into categories.

4.1 Presentation of Findings

In this study, data were summarised and presented in the form of frequency tables and percentages, pie charts and graphs to facilitate easy understanding of the factors contributing to obstetrical referrals from Mpulungu Urban Clinic to Mbala District Hospital

PART A.

TABLE 3.0: Demographic data of respondents

Variable	Frequency	Percentage
Sex		
Male	1	10
Female	10	90
Total	11	100

The majority 10 (90%) of the respondents were females while 1 (10%) was a male.

TABLE 3.1

Age Group	Frequency	Percentage
25 – 34 yrs	6	55
35 – 44 yrs	3	27
45 – 54 yrs	2	18
Total	11	100

The majority 6 (55%) ranged in the age group of 25 – 34 years, while 3 (27%) ranged in the age group of 35 - 44 years, and 2 (18) in the age group of 45-54 years.

TABLE 3.2

Religion	Frequency	Percentage
Christian	11	100
Moslem	0	
Others	0	
Total	11	100

All 11 (100%) of the respondents were Christians.

TABLE 3.3

Variable	Frequency	Percentage
Educational Level		
Primary	0	0
Secondary	0	0
College	11	100
University	0	0
Total	11	100

All 11 (100%) of the respondents attained college education.

TABLE 3.4

Length in service	Frequency	Percentage
3 – 12 yrs	7	64
13 – 22 yrs	3	27
23 – 32 yrs	1	9
Total	11	100

The majority 7 (64%) were in service for the period of 3-12 years, while 3 (27%) were in service for the period of 13-22 years and 1 (9%) was in service for 23-32 years.

TABLE 3.5

Category of nursing	Frequency	Percentage
Enrolled Nursing	3	28
Enrolled Midwife	4	36
Registered Nursing	4	36
College	0	0
Registered Midwifery	0	0
Registered Psychiatry	0	0
Registered theatre	0	0
Others	0	0
Total	11	100

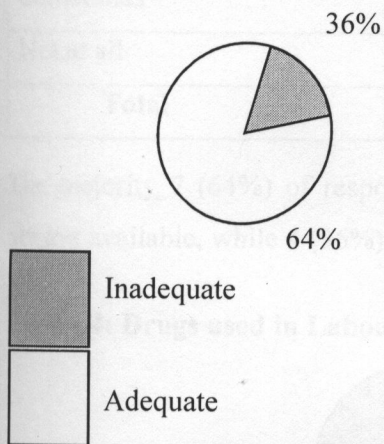
Among the respondents, 4 (36%) were enrolled midwives, 4 (36%) were registered nurses and 3 (28%) were enrolled nurses.

TABLE 3.6

Attendance Of Refresher Course In Reproductive Health	Frequency	Percentage
Yes	5	45
No	6	55
Total	11	100

The majority of the respondents 6 (55%) did not attend any refresher course in reproductive health while 5 (45%) had attended.

Figure 2: Equipment used in labour ward.



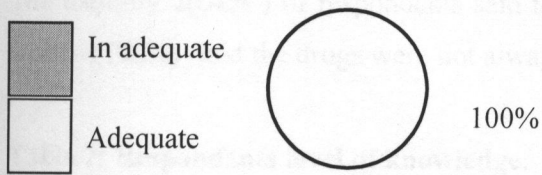
The equipment used in labour ward were adequate as per cut off point 10-16 items according 7 (64%) of respondents, while 4 (36%) think they are not adequate as per cut off point of below 10 items.

Table 4: Equipment used in Labour Ward.

Variable	Frequency	n = 11	Percentage
Functional	6		55
Non functional	5		45
Total	11		100

The majority 6 (55%) of respondents said that the equipment used in Labour Ward were functional, while 5 (45%) think they were non functional.

Figure 3: Surgical supplies used in labour ward.



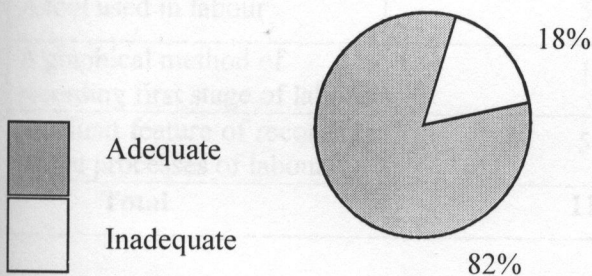
The surgical supplies used in Labour Ward were adequate as per cut off point of 10-16 items according to all 11 (100%) respondents.

Table 5: Availability of surgical supplies used in Labour Ward.

Variable	Frequency	Percentage
Always	4	36
Sometimes	7	64
Not at all	0	0
Total	11	100

The majority 7 (64%) of respondents said that surgical supplies used in Labour Ward were not always available, while 4 (36%) said that they were always available.

Figure 4: Drugs used in Labour Ward.



The majority of the respondents 9 (82%) said that the drugs used in the Labour Ward were adequate as per cut off point of 10-16 items, while 2 (18%) said they were not adequate as per cut off point of items below 10.

Table 6: Availability of drugs used in Labour Ward.

Variable	Frequency	Percentage
Always	4	36
Sometimes	7	64
Not at all	0	0

Total	11	100
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The majority 7(64%) of respondents said that drugs used in Labour Ward were always available while 4 (36%) said the drugs were not always available.

Table 7: Respondents level of knowledge.

Level of knowledge	Frequency n= 11	Percentage
High	3	27
Moderate	5	56
Low	3	27
Total	11	100

The majority 5 (56%) of respondents had moderate level of knowledge while 3 (27%) had high and 3 (27%) had low level of knowledge.

Table 8: Definition of a partograph.

Variable	Frequency n = 11	Percentage
A tool used in labour	5	45
A graphical method of recording first stage of labour	1	10
A salient feature of recording all the processes of labour.	5	45
Total	11	100

About 5 (45%) of respondents defined a partograph as a tool used in Labour ward, 5 (45%) as a salient feature of recording all the processes of labour and 1 (10%) as a graphical method of recording first stage of labour.

Table 9: Major parameters measured on a partograph.

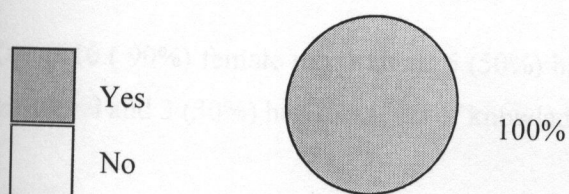
n = 11

Variable	Frequency	Percentage
Cervical dilatation and uterine contraction	1	10
Feta heart sound and cervical	0	0

dilatation		
Fetal well-being, maternal well-being, progress of labour.	10	90
Others	0	0
Total	11	100

The majority of respondents 10 (90%) indicated that the major parameters that a partograph measures are fetal well-being, maternal well-being and progress of labour while 1 (10%) indicated that it measures cervical dilatation and uterine contraction.

Figure 5: Use of a partograph.



All the respondents 11 (100%) have used a partograph at the centre.

Table 10: Plotting on a partograph.

Variable	Frequency	n= 11	Percentage
At 2cm cervical dilatation	1		10
At 3cm cervical dilatation	7		64
When labour is diagnosed	0		0
When you detect complication in labour	0		0
Other	3		36
Total	11		100

The majority 7 (64%) of respondents indicated at 3cm cervical dilatation as when to start plotting on the partograph, 3 (36%) indicated at other stages while 1 (10%) indicated at 2cm cervical dilatation

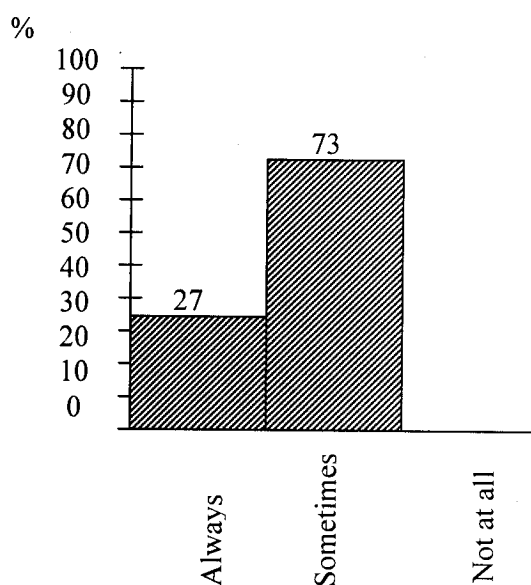
Table 11: Level of knowledge on a Partograph and infection prevention during conducting a delivery in relation to sex.

n = 11

Level of Knowledge	Sex		Total
	Male	Female	
High	1 (100%)	2 (20%)	3 (27%)
Moderate	0	5 (50%)	5 (50%)
Low	0	3 (30%)	3 (27%)
Total	1 (10%)	10 (90%)	11 (100%)

Out of 10 (90%) female respondents 5 (50%) had moderate level of knowledge while 2 (20%) had high level and 3 (30%) had low level of knowledge.

Figure 6: Availability of partographs.



The majority 8 (73%) of the respondents said that the partographs were not always available at the centre, while 3 (27%) said that they were always available.

Table 12: Level of knowledge on a Partograph and infection prevention during conducting a delivery in relation to age.

Level of Knowledge	Respondents Age Range			Total
	25 – 34 yrs	35 – 44 yrs	45 – 54 yrs	
High	3 50%	0	0	3 (27%)
Moderate	3 50%	1 (33%)	1 (50%)	1 (50%)
Low	0	2 (67%)	1 (50%)	3 (27%)
Total	6 (55%)	3 (27%)	2 (18%)	11 (100%)

Out of 3 (27%) respondents who were in the age range of 35 – 44 years, 2 (67%) had low level of knowledge and out of 6(55%) who were in the age range of 25 – 34 years, 3 (50%) had high level of knowledge.

Table 13: level of knowledge on a partograph and infection prevention during conducting a delivery in relation to length in service.

n = 11

Level of Knowledge	Length in Service			Total
	3 – 12 yrs	13 – 22 years	23 – 32 years	
High	3 43%	0		3 (27%)
Moderate	3 43%	2 (50%)		5 (50%)
Low	1 14%	2 (50%)		3 (27%)
Total	7 (64%)	4 (36%)		11 (100%)

Out of 4 (36%) respondents who were in service for 13 – 22 years, 2 (50%) had high level of knowledge while, 2 (50%) had low level of knowledge. Out of 7(64%) of respondents who were in service for 3 – 12 years, 3 (43%) had moderate, 3 (43%) had high and 1 (14%) had low level of knowledge

Table 14: level of knowledge on a partograph and infection prevention during conducting a delivery in relation to attendance of a refresher course in reproductive health.

n = 11

Level of Knowledge	Attendance Of A Refresher Course In Reproductive Health		Total
	Yes	No	
High	1 20%	2 33%	3 (27%)
Moderate	3 60%	2 33%	5 (56%)
Low	1 14%	2 33%	3 (27%)
Total	5 45%	6 55%	11 (100%)

Out of 5 (45%) respondents, who had attended a refresher course, 3 (60%) had moderate level of knowledge, 1 (20%) had high level of knowledge while out of 6(55%) who did not attend any refresher course , 2 (33%) had high level of knowledge, 2 (33%) had moderate and 2(33%) had low level of knowledge.

Table 15: Referral criterion.

n = 11

Variable	Frequency	Percentage
Yes	5	45
No	6	55
Total	11	100

The majority 6 (55%) of respondents said that there was no referral criterion for referring obstetric complicated cases to Mbala hospital while 3 (45%) said it was there.

Table 16: Labour Ward protocols .

n = 11

Variable	Frequency	Percentage
For admission of women in labour	0	0
For management of women in second stage of labour.	0	0
For management of women in second stage labour.	0	0
For management of women in third stage of labour	0	0
For management of immediate post partum	0	0
None	11	100
Total	11	100

All the respondents 11 (100%) expressed ignorance on the other labour ward protocols that are found in Labour Ward.

Table 17: The stage of Labour at which women go to Labour Ward.

n = 11

Variable	Frequency	Percentage
When they are 0-2cm cervical	0	0
When they are 3-5cm cervical dilated	1	10
When they are 6-8cm cervical dilated	10	90
When they are 9-10cm cervical dilated.	0	0
For management of immediate post partum	0	0
Total	11	100

The majority of respondents 10 (90%) indicated that most of the women go to the clinic for delivery when they are 6-8cm cervical dilated while 1 (10 %) indicated 3-5cm cervical dilated.

PART B

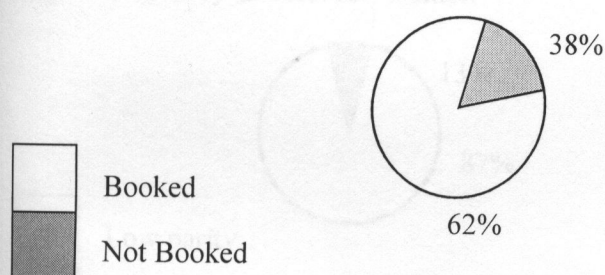
Table 18: Category of age of pregnant women referred to Mbala Hospital.

n = 289

Category of Age at Risk	Number of referred women	Percentage
High risk(below 16 yrs, and above 35 yrs)	40	14
Low risk(16-34 yrs)	249	86
For management of women in second stage labour.	0	0
Total	289	100

The majority 249 (86%) of women referred to Mbala Hospital, the age range were in a low risk category while 40 (14%) were in a high-risk category.

. Figure 7: Antenatal booking.



The majority 179 (62%) of referred women had booked antenatally while 110(38%) did not book.

Table 20: Obstetric cases referred.

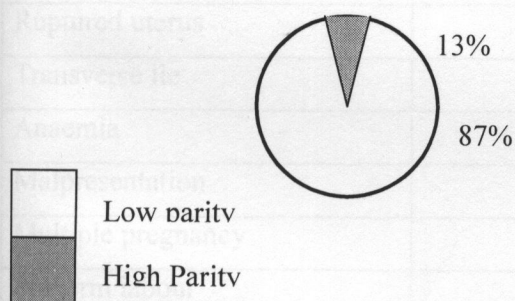
Table 19: Distance covered by referred pregnant women .

n = 289

Distance covered	No. Of referred women	Percentage
Within 12 Kms in the catchment area	199	69
Away than 12 Kms	63	22
Outside catchment area but within the district	22	8
Outside the district but within the country	3	1
Outside the country	2	0
Unknown address	0	0
Total	289	100

The majority 199 (69%) of the referred women were coming from within 12 Kms of the catchment area, 63 (22%) from 12Km away but within the catchment area, 22 (8%) outside the catchment area but within the district and 3 (1%) outside the district but within the country.

Figure 8: Parity-of referred women



The majority 252 (87%) of referred women had low parity while 37 (13%) had high parity.

Table 20: Obstetric cases referred.

<i>Obstetric Cases</i>	<i>Frequency n=289</i>	<i>Percentage</i>
CPD	71	25
APH	39	14
2 nd stage prolonged labour	30	10
1 st stage prolonged labour	26	9
Previous caesarean section	21	7
Incomplete abortion	19	7
Obstructed labour	12	4
Eclampsia	10	4
Retained placenta	10	4
IUD	9	3
PPH	6	2
Pre-eclampsia	4	1
Hand & cord prolapse	3	1
Hand prolapse	3	1
Cord prolapse	3	1
Breech presentation	3	1
Ruptured uterus	3	1
Transverse lie	2	1
Anaemia	2	1
Malpresentation	2	1
Multiple pregnancy	2	1
Pre term labour	2	1
RVF	1	0
Sterilization	1	0
Shirodical suture	1	0
Maternal distress	1	0
Hypotonic uterus	1	0
OPP	1	0
Fetal distress	1	0
TOTAL	289	100%

The majority 71 (25%) of cases referred were CPD, while 39 (14%) were APH, 30 (10%) were prolonged 1st stage of labour, 26 (10%) were prolonged 2nd stage of labour, 21 (7%) were previous cesarean section, 19 (7%) were incomplete abortion, 12 (4%) were obstructed labour, 10 (4%) were eclampsia, 10 (4%) were retained placenta, 9 (3%) were IUD, 6 (2%) were PPH, 4 (1%) were pre-eclampsia, 3 (1%) were hand and cord prolapse, 3 (1%) were hand prolapse, 3 (1%) were cord prolapse, 3 (1%) were breech presentation, 2 (1%) were ruptured uterus, 2 (1%) were Transverse lie, 2 (1%) were Anaemia, 2 (1%) were malpresentation, 2 (1%) were multiple pregnancy, 2 (1%) were preterm labour.

Table 21: Category of age of referred women in relation to antenatal attendance.

n = 289

Category of age of referred women	Antenatal attendance		Total
	Booked ANC	Not Booked ANC	
High Risk(below 16 yrs and above 35 yrs)	16 (9%)	24 (22%)	40 (14%)
Low risk(16-34yrs)	163 (91%)	86 (78%)	249 (86%)
Total	179 (62%)	110 (38%)	289 (100%)

Out of 179 (62%) who booked for antenatal clinic only 16 (9%) were in the category of age of high risk while 163 (91%) were in the low risk. Out of 110 (38%) who did not book for antenatal clinic, 86 (78%) were in the category of age of low risk while 24 (22%) were in the high risk.

Table 22: Category of age of referred women in relation to parity.

n= 289

Category of age of referred women	Category of parity		Total
	High	Low	
High Risk(below 16 yrs and above 35 yrs)	22 (59%)	18 (7%)	40 (14%)

Low risk(16-34 yrs)	15 (41%)	234 (93%)	249 (86%)
Total	37 (13%)	252 (87%)	289 (100%)

Out of 252 (87%) of referred women who had low parity 234(93%) were in the category of age of low risk while 18 (7%) were in high risk. Out of 37 (13%) who had high parity, 22 (59%) were in the category of age of high risk while 15 (41%) were in the low risk.

Table 23: Antenatal attendance of referred women in relation to distance to the health centre

Antenatal attendance	Distance to the health centre in codes						Total
	1	2	3	4	5	6	
Booked	136 (68%)	33 (52%)	8 (64%)	1 (33%)	2 (100%)	0	180 (62%)
Not booked	63 (32%)	30 (48%)	14 (36%)	2 (36%)	0	0	109 (38%)
Total	199 (69%)	63 (22%)	22 (8%)	3 (1%)	2 0	0 0	289 (100%)

Out of 199 (69%) of referred women who lived within 12Km to the health centre, 136 (68%) had booked for antenatal clinic , while 63 (32%) did not book. Out of 63 (22%) who lived 12 Kms away from the health centre, 33 (52%) booked for antenatal clinic while 30 (48%) did not book.

5.0 DISCUSSION OF FINDINGS

5.1 INTRODUCTION

This study was aimed at determining factors contributing to obstetric referrals from Mpulungu Urban Clinic to Mbala hospital. The findings of the study were based on the analysis of data collected from all eleven (11) nurses who had practiced at the health centre and from two hundred eighty nine (289) referred pregnant women from Mpulungu Health Centre to Mbala Hospital.

5.1.1 DEMOGRAPHIC DATA.

More than three quarters of the respondents were females and this was so because the majority of nurses in Zambia are females (GNC 2004). From the time of Florence Nightingale, nursing was considered as a career for females; therefore, they have been joining in bigger numbers (GNC 2004). More than half of the respondents were in the age range of 25 to 34 years. The reason may be that Zambia has a youthful population (DHS 2001-2002). Also the age limit for nurse trainees is 18 years.

All the respondents were Christians. This could be attributed to the fact that Zambia has been declared a Christian Nation. The educational level attained by all respondents, were college education and three eighth of them were Registered Nurses, three eighth were Enrolled Midwives, while two eighth were Enrolled Nurses.

More than half of the respondents were in service for 3 to 12 years while one quarter worked for 13 to 22 years, only one ninth were in service for 23 to 32 years. Considering that most of the respondents had worked less than three years, only less than half attended a refresher course in Reproductive Health, while more than half did not attend. Those who attended a refresher course said that they had learnt topics in obstetric emergencies such as prolonged labour, obstructed labour, APH, PPH, pre-eclampsia, eclampsia and in reproductive health such as antenatal care, post natal care, post abortive care, youth friendly corners, family planning, prevention of mother to child transmission of HIV and partograph. Some of the learnt topics were the causes of most obstetric complications and subsequently maternal deaths as per study findings of Mbizyo et al (1993).

The disparity in those who attended a refresher course on Reproductive health signified that more than half lacked new information in Reproductive Health. And this contributed to obstetrical referrals. The findings were similar with the statement of Population Reference Bureau (2000), that lack of knowledge contribute to the provision of substandard health services.

5.1.2 RESOURCES OF EQUIPMENT, SURGICAL SUPPLIES AND DRUGS

The results of this study revealed that not only the equipment used in labour ward were adequate as said by more than half of respondents in figure 3, but also more than half of them in table 5 said that the equipment were functional. This confirmed that equipment used in labour ward were not one of the factors that contributed to the obstetric referrals. These findings were similar with the statement Population Reference Bureau (2000), that lack of equipment contributes to substandard health services.

The results also revealed that all the respondents in this study said the surgical supplies used in labour ward were adequate.

The reasons for shortages were attributed to lack of capacity of management in constant ordering of supplies and not taking it as a priority area for the institution. Also management had no capacity to purchase all supplies using the 4% from the monthly grant. The other attribute was also lack of capacity of medical stores in constant supply of the surgical supplies. They either delayed to supply or supplied in adequate supplies.

These results confirmed that the inconsistency of surgical supplies were some of the factors that contributed to increased obstetric referrals. Lack of surgical supplies lead to compromised management of pregnant women in labour (Reproductive Health Newsletter 2000).

Results from the study also revealed that almost all respondents said that the drugs used in labour ward were adequate. And furthermore, it revealed that more than half of the respondents said that the drugs used in labour ward were always available.

The results confirmed that the drugs were not one of the contributing factors for increased obstetrical referral from Mpulungu Health Centre to Mbala Hospital because they were adequate.

5.1.3 NURSES LEVEL OF KNOWLEDGE ON MANAGEMENT OF WOMEN IN LABOUR

The results in this study revealed that more than half of the respondents had moderate level of knowledge, while one quarter had high and the other quarter had low level of

knowledge. These results confirmed with the hypothesis of 'the lower the levels of knowledge of nurses about management of women in labour, the higher the obstetric referrals.

5.1.3.1 NURSES LEVEL OF KNOWLEDGE ON INFECTION PREVENTION DURING CONDUCTING A DELIVERY

The results got from this study demonstrated that nurses washed their hands with soap and water as a measure of keeping hands clean when conducting a delivery. They also had to put on gloves during the procedure. Washing of hands were done before, during and after conducting a delivery. This confirmed that nurses had adequate knowledge on how to keep the hands clean and prevent infection.

On how to keep the delivery surface clean some nurses said that they cleaned with plain water, while others said that they disinfected with JIK 1: 6 and then cleaned with soapy water. These results showed that those disinfecting the delivery surface with JIK 1:6 before cleaning it with soapy water had adequate knowledge on keeping the delivery surface clean while those cleaning it with plain water had no knowledge

The study also revealed various ways on how to keep the perineum clean. The nurses said that, they cleaned the perineum by swabbing it with antiseptic solution such as centrimide or chlorhexidine 0.25% and savlon, cleaning it with water and swabs, cleaned with water and soap from front to the back, asked the clients to shave and have a vulva swabbing while others advised the clients to bath and change on clean pads.

These results confirmed that nurses had no uniform measures on how to clean the perineum of pregnant women in labour. Those who cleaned with soap and water, had knowledge while those who cleaned with chlorhexidine 0.25% had no knowledge and risked clients skin to irritation and consequently burning them.

Also the results revealed that the measures followed by nurses to keep the cord cutting instruments clean and sterile were not uniform. Others followed the correct way of first putting them in JIK for 10 minutes, then cleaning them in soap water before rinsing them, boiling them for 20 minutes and keeping them dry in a clean pack.

The other group of nurses did it wrongly by firstly cleaning them in water before soaking them in JIK. Thereafter, they rinsed them in water and boiled them for 20 minutes.

The results confirmed that some nurses had adequate knowledge on infection prevention when conducting a delivery while others had low knowledge. Those who

had low knowledge were at risk of providing substandard health services (Reproductive Health Newsletter – 2000)

5.1.3.2 NURSES LEVEL OF KNOWLEDGE ON THE PARTOGRAPH AND ITS USE IN LABOUR WARD

Lack of knowledge on the partograph and its use in labour ward lead to provision of substandard of health services .This contributed to obstetric referrals. The findings in this study were similar with Reproductive Health Newsletter 2000.

The study demonstrated that more than half of the nurses defined a partograph wrongly and this questioned the effectiveness use of it. It is not possible to effectively use the tool you can't even define. A partograph is defined as a salient feature of recording the whole process of labour and only less than half of the nurses got it right. Fortunately, the study showed that almost all nurses knew the major parameters that a partograph measures as foetal and maternal well-being and progress of labour. But it was difficult for nurses to identify the parameters a partograph measure on progress of labour instead of identifying them correctly as cervical dilatation, descent and uterine contraction, others identified them as foetal well being, maternal well being, cervical dilatation and uterine contraction. The other group of nurses identified them as latent phase, active phase and action phase while others identified them as foetal heart dilatation of cervix, uterine contraction and blood pressure.

The study showed that all nurses had at one time used a partograph while three quarters of nurses said that the partograph were not always available. They cited main reasons for why the partographs were erratic as not seen as a priority by management, lack of supervision by midwives, and the procedures for acquiring stationery were not being supplied consistently by responsible personnel.

The study showed that more than half of the nurses knew on when to start plotting on the partograph though the majority was unable to define it as earlier mentioned.

On the availability of the referral criterion, the study showed that more than half of the nurses said that it was not there and they cited various reasons. The reasons mentioned were as follows, no one cares about writing the criterion, this has never been brought to the attention of management, lack of supervision by management and midwives, the procedures are not laid down by nurses themselves and nurses do not know about the criterion.

The nurses who had accepted that the referral criterion was there ,gave wrong answers when they were asked to give areas considered in a referral criterion. In their answers

they only mentioned obstetrical conditions that are referred. These included, cephalopelvic disproportion, transverse lie, and foot presentation, foetal distress, APH, pre-eclampsia, eclampsia, PPH, obstructed labour and breech presentation. Ideally, a referral criterion is a standard or protocol that should have steps to follow for each obstetrical condition before arriving at the decision to refer. It should also have measures or interventions that must be done to the client before referring her. In addition, the study showed that all nurses denied having seen any other labour ward protocols in the labour ward. The study findings were similar with the findings of Reproductive Health Newsletter (2000), that lack of referral criterion contribute to low standard of health care.

In the study almost all of the nurses said that most women go to the clinic (Labour Ward) when they are 6-8cm cervical dilatation. This could be one of the factors that contributed to increased obstetrical referrals. When pregnant women go late to the clinic, it becomes difficult to handle them should they develop the complications. There is a saying, which says, "Prevention is better than cure" early attendance of pregnant women enable the nurses prevent problems and avoid making referrals. These findings were similar with the findings of Reproductive Health Newsletter (2000).

When the nurses were asked on why the pregnant women went to the clinic at that stage of labour, they mentioned various answers. Some nurses said that women don't like to stay in labour ward for a long time, others said women stay very far from the clinic and they foot due to lack of transport while others said women go to the clinic so that they can be prepared for a good progress of labour.

5.1.4 REFERRED OBSTETRIC CASES

The study showed that four fifth of the pregnant mothers referred were in the low risk category of age. This confirmed that each pregnancy is at risk of developing complications despite accessible care (Hollander D 2001).

The study also demonstrated that more than half of the referred women had booked antenatally. This also confirmed with Hollander D (2001) s' report.

In addition table 20 showed that more than half of the referred women came from within 12 kilometres to the health Centre. This signified that the women had an opportunity to access antenatal services.

The study showed that four fifth of referred women had low parity. This also signified that each pregnancy is at risk of developing complications.

In summary, Hollander D (2001)'s report remains important and that each pregnancy should be given the attention it deserves.

Finally, the study showed the most obstetric cases referred to Mbala Hospital. The majority of referrals were cephalo pelvic disproportion cases, followed by APH, then prolonged 1st stage and 2nd stage of labour, then incomplete abortion and previous cesarean section cases. Others were PPH , obstructed labour , eclampsia, retained placenta and IUD cases.

5.1.5 OBSERVATION MADE ON MANAGEMENT OF WOMEN IN LABOUR AT MPULUNGU URBAN CLINIC

Each respondent had her/his own observation as follows:

1. No enough equipment and personnel to handle complicated cases.
2. Women tend to shun young nurses hence they don't become comfortable in labour.
3. Nurses do not observe progress of labour properly due to staff shortage and lack of refresher courses in reproductive health.
4. Most of the women go to the clinic after they have taken herbs (African Syntocinon) i.e. to fasten progress of labour.
5. Nurses don't check for blood pressure and test urine for protein in women in labour.
6. Nurses observe for vagina bleeding and encourage the women to empty the bladder before and after delivery.
7. Delivered women carry and dispose their own placentas.
8. Complicated cases are brought in the late stage such that it becomes difficult to manage them well.
9. The clinic doesn't have most of the supplies and equipment to enable nurses provides quality health care to the women as well as their babies. Therefore, nurses are urging the authorities to look into this problem seriously. Nurses refer complicated cases to Mbala Hospital because there is no theatre and doctor.
10. There is poor management of women in labour due to shortage of staff and no proper observations.
11. Nurses also observe for hypertension and odema in pregnant women.

Some of the observations made need attention since they were raised by the users and on behalf of the recipients of the service being rendered.

5.1.6 HEALTH SYSTEMS IMPLICATIONS

The findings of this study revealed that the majority, more than half of the nurses had moderate level of knowledge while one quarter had high and the other quarter had low knowledge in management of women in labour. This was seen from more than half of the nurses who even failed to define the partograph correctly. The nurses could not effectively use the partograph because they had inadequate knowledge on its use. This was coupled with erratic supply of partographs as elaborated by three quarters of the nurses.

Therefore, it questioned the referrals that were made because a partograph is supposed to be routinely used to monitor progress in labour and to assist in the decision making process with regard to referrals.

These results confirmed with the hypothesis of "the lower the level of knowledge nurses have about management of women in labour, the higher the obstetric referred". In addition more than half of the nurses never attended a refresher course thus they lacked new information in reproductive health. Even those less than half who had attended a refresher course, they never learnt on the use of a partograph.

A part from inadequate knowledge by nurses, erratic supply of surgical supplies, none existence of labour ward protocols and late attendance of women to the labour ward contributed to the increased referrals made to Mbala Hospital.

The study also revealed that each pregnancy was at risk of developing complications. Therefore there was need to pay much attention by both the community and the medical practitioners.

Finally, the study revealed the cases that were referred to Mbala Hospital. The following were the most 6 frequent cases referred to Mbala Hospital. Frequent cases referred, CPD, APH, prolonged 1st stage of labour, prolonged 2nd stage of labour, incomplete abortion and previous cesarean section cases.

6.0 CONCLUSION

Adequate knowledge to obstetric care be helpful in reducing unnecessary referrals that result in inconveniencing and draining resources for both the clinic and client.

The aim of this study was to determine the factors contributing to increased obstetrical referrals from Mpulungu Urban Clinic to Mbala Hospital so that the measures could be taken by the relevant authorities to redress the situation.

The results of the study revealed some factors that contributed to increased obstetrical referrals. The major factor was inadequate knowledge of nurses in management

women in labour. There were ineffective use of a partograph and it was not always available. This questioned where they drew their decision to refer especially on cases of prolonged labour.

The other factors, that came out were erratic supply of the surgical supplies and none existence of labour ward protocols including the referral criterion.

None existence of the labour ward protocols meant that the nurses were not properly guided on when to make referrals.

The study also revealed that each pregnancy is at risk regardless of the age of the woman and parity. Therefore, each pregnancy should be given the attention it deserves. It also revealed that late attendance of women to labour ward contributed.

Finally, the study revealed the common obstetrical cases that were referred from Mpulungu Urban Clinic to Mbala Hospital.

7.0 RECOMMENDATIONS

In view of the findings of the study, the researcher made the following recommendations.

7.1 TRAINING OF GENERAL NURSING AND MIDWIFERY

There is need for general nursing and Midwifery to be merged so that the problem of shortage of midwives is dealt with. In the curriculum there is also need to incorporate a standard or use the WHO partogram design, which has pre-printed alert and action lines for Nursing Training Schools.

That the GNC should inspect for the presence and effective use of the partograms in schools and health facilities on frequent basis.

That the MOH and DHMTs should ensure that the health facilities are effectively using the partograms

7.2 STAFF DEVELOPMENT

There is need for follow-up staff development in skills training especially on the use of the partogram for the nurses to be motivated and kept up to date. Encourage "hand on" or experimental learning during the refresher course.

- 7.2.1** Make criteria for selecting the staff to attend a refresher course such as identifying a training need of a staff member before selecting participants, invite even those on off days. .

7.2.2 Make a policy to ensure that those called from their off days won't be asked for their days.

7.3 Staffing

7.3.1 To train more nurses, if possible the DHMT to be encouraged to sponsor more nurses who are willing to come back and work for the district.

7.3.2 MOH and DHMT to implement the retention scheme for nurses so tha they are encouraged to work in rural areas.

7.3.3 The DHMT to be having periodical meetings with nurses in the clinics for correction of situation in time, nurses could be having solutions to their problems.

7.4 LOGISTICAL SUPPORT AND SUPPLIES

7.4.1 The charge – nurses to be ordering enough surgical supplies and partograms. Also the charge nurse to sit down with her fellow nurses and design labour ward protocols including the referral criterion.

7.4.2 INTER SECTORAL COLLABORATION

A network with other organizations involved in educating the community on maternal and child health needs to be established, including the recipients of the of the services.

7.5 RESEARCH TOPIC

A follow-up research on the referred obstetrical cases to establish on the measures that were taken would help strengthen the strategies.

8.0 LIMITATION OF THE STUDY

The study was conducted within the major limitation of time, finances and busy schedule of the researcher. It was done within the stipulated academic year.

The results from this study had a small sample of (11) respondents and 289 referred obstetrical cases at Mpulungu Urban Clinic.

This cannot be generalized to all nurses and health centres in the country. It was difficult to obtain adequate amount of literature on contributing factors to obstetrical referrals in Zambia because not much has been documented.

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BUDGET

Budget Category	Unit Cost	Quantity	Total
A. STATIONERY			
• A4 Typing paper (Ream)	20,000	2	40,000
• Pencil	500	3	1,500
• Pens	500	10	15,000
• Note Books	5,000	3	5,000
• Tipex	10,000	1	10,000
• Spiral Binders	5,000	4	20,000
• Flash Disk	150,000	1	150,000
• Box File	20,000	1	20,000
• Stapler	75,000	1	75,000
• Staples (box)	7,500	1	7,500
• Perforator	50,000	1	50,000
• Scientific Calculator	60,000	1	60,000
• Rubber	1000	1	1000
SUB TOTAL			455,000
B. Personnel Lunch allowance			
2 assistants	50,000	10 Days	1,000,000
1 driver	50,000	2 Days	100,000
1 researcher	50,000	2 Days	600,000
SUB TOTAL			1,700,000
C. Fuel			
• Diesel	6,000 per litre	60 litre	360,000
• Oil	15,000 per litre	5 litre	75,000
SUB TOTAL			435,000
C. Typing Services			
• Printing Services	1,500 per page	100	150,000
• Photocopying	250.00	100 x 4	100,000
• Binding			
SUB TOTAL			250,000
10% Contingency			284,000
GRAND TOTAL			3,124,000

JUSTIFICATION OF THE BUDGET

Stationery is needed to write and carry out the study, the stationery includes pens and pencils for writing, tipex for erasing the mistakes, box file for filing in references, Flash Disk for saving in the whole research documents, stapler and staples for putting the work in orderly manner. The calculator is to be used for mathematical calculations.

Fuel is needed to enable the researcher travel to another clinic for Pilot study.

Money is needed for printing, photocopying charges and for paying lunch allowance claims.

WORK PLAN

ACTIVITY	TIME FRAME		RESPONSIBLE OFFICER
	DATES	DURATION	
Research Proposal Review	11 – 04 – 2005 to 31 – 12 – 2005	Continuos	Researcher
Data Collection Tool	07 – 07 – 2005 to 30 – 07 – 2005	21 Days	Researcher
Finalise Research Proposal	14 – 07 – 2005 to 30 – 07 – 2005	14 Days	Researcher
Pilot Study	30 – 08 – 2005 to 31 – 08 – 2005	2 Days	Researcher
Clearance from Authority	25 – 08 – 2005 to 26 – 08 – 2005	2 Days	DHMT
Collection Tool Amendments	01 – 09 – 2005 to 02 – 09 – 2005	2 Days	Researcher
Data Collection	05 – 09 – 2005 to 09 – 09 – 2005 12 – 09 – 2005 to 19 – 09 – 2005	10 Days	Researcher and Research Assistants
Data Analysis	03 – 10 – 2005 to 03 – 11 – 2005	30 Days	Researcher
Report Writing	04 – 11 – 2005 to 18 – 11 – 2005	14 Days	Researcher
Draft Report to PBN Supervisor	19 – 11 – 2005 to 18 – 11 – 2005	14 Days	Researcher
Finalise Report	19 – 11 – 2005 to 01 – 12 – 2005	10 Days	Researcher
Publication of Results	15 – 12 – 2005 to 16 – 12 – 2005	2 Days	Researcher
Monitoring	11 – 04 – 2005 to 31 – 12 – 2005	Continuous	Researcher

GANTT CHART

Tasks to be Performed	Responsible Person	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Research Proposal Review	Researcher									
Data Collection Tool	Researcher									
Finalise Research Proposal	Researcher									
Clearance from Authority	Researcher									
Pilot Study	Researcher									
Collection Tool Amendments	Researcher									
Data Collection	Researcher									
Data Analysis	Researcher									
Report Writing	Researcher									
Draft Report to PBN Supervisor	Researcher									
Finalise Report	Researcher									
Publication of Results	Researcher									
Monitoring	Researcher									

QUESTIONNAIRE NUMBER:

THE UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

DEPARTMENT OF POST BASIC NURSING

***A Questionnaire for Nurses/Midwives On Factors Contributing To Obstetrical Referral
From Mpulungu Urban Clinic To Mbala Hospital.***

DATE:

VENUE:

TIME:

INTRODUCTION:

This study is being carried out by Banda Mackson who is a 4th year Post Basic Nursing student at the University of Zambia. The study is a partial fulfilment of the award of Bachelor of Science Degree in nursing. The main objective of the study is to determine the reasons why there is an increase of pregnant mothers being referred to Mbala Hospital from Mpulungu Urban Clinic.

Confidentiality will be upheld.

INSTRUCTIONS:

- 1) Do not write your name on this questionnaire.
- 2) Tick in the box corresponding to the correct answer(s) or write your responses in the space provided.
- 3) Please answers all questions.

DEMOGRAPHIC DATA

1. Sex of respondent.
 - a) Male ☐
 - b) Female ☐
2. How old are you?
3. For how long have you been in the service?
4. What is your religion?
 - a) Christian ☐
 - b) Moslem ☐
 - c) Others (Specify) _____
5. What is your educational level?
 - a) Primary ☐
 - b) Secondary ☐
 - c) College ☐
 - d) University ☐
6. In which category of nursing do you belong?
 - a) Enrolled Nursing ☐
 - b) Enrolled Midwifery ☐
 - c) Registered Nursing ☐
 - d) Registered Midwifery ☐
 - e) Registered Psychiatry Nursing ☐
 - f) Registered theatre nursing ☐
 - g) Others (specify)
7. Have you ever attended any refresher course in reproductive health?
 Yes ☐ NO ☐
8. If the answer to question (7) is (yes). What were the topics?

RESOURCES (EQUIPMENT/ SURGICAL SUPPLIES AND DRUGS)

9. What equipment does your labour ward stock for conducting deliveries?
 Tick against the correct items.

- | | | |
|----|------------------------------------|--------------------------|
| a) | Delivery beds | <input type="checkbox"/> |
| b) | Delivery forceps (Artery forceps) | <input type="checkbox"/> |
| c) | Cord Scissors | <input type="checkbox"/> |
| d) | Episiotomy Scissors | <input type="checkbox"/> |
| e) | Receivers | <input type="checkbox"/> |
| f) | Basins | <input type="checkbox"/> |
| g) | Resuscitaire with oxygen, Ambu bag | <input type="checkbox"/> |
| h) | Vagina Speculum | <input type="checkbox"/> |
| i) | Standing scale | <input type="checkbox"/> |
| j) | Baby weighing scale | <input type="checkbox"/> |
| k) | B/P machine | <input type="checkbox"/> |
| l) | Stethoscope | <input type="checkbox"/> |
| m) | Foetal scope | <input type="checkbox"/> |
| n) | Autoclave or Steriliser | <input type="checkbox"/> |
| o) | Laryngoscope | <input type="checkbox"/> |
| p) | Thermometer | <input type="checkbox"/> |

☐

10. Which of the above equipment are functional?

11. What surgical supplies do your labour ward stock that can be used in conducting deliveries?

Tick against the correct items.

Surgical Supplies

- | | | |
|----|--|--------------------------|
| a) | Suturing materials | <input type="checkbox"/> |
| b) | Suturing needles | <input type="checkbox"/> |
| c) | Intravenous giving set (fluid and blood) | <input type="checkbox"/> |
| d) | Strapping | <input type="checkbox"/> |
| e) | Cotton wool/sanitary pads | <input type="checkbox"/> |
| f) | Cord clamps | <input type="checkbox"/> |
| g) | Linen/drapers | <input type="checkbox"/> |
| h) | Methylated spirit | <input type="checkbox"/> |

☐

- i) Jik ☐
- j) Surgical gloves ☐
- k) Canulars ☐
- l) Bandages ☐
- m) Toilet soap ☐
- n) Needles and syringes ☐
- o) Surgical blades ☐
- p) Urethral catheters ☐

12. Are the surgical supplies in question (11) _____ available.

- a) Always ☐
- b) Sometimes ☐
- c) Not at all ☐

13. If the answer to question (12) is (b) or (c) why?

14. What drugs do your labour ward stock that can be used when conducting deliveries?

Tick against the correct items.

Drugs

- a) Tetracycline eye ointment ☐
- b) Injectable ergometrine ☐
- c) Injectable oxytocin ☐
- d) Injectable Lignocaine ☐
- e) Intravenous normal saline ☐
- f) Intravenous 5% Dextrose ☐
- g) Intravenous 50% Dextrose ☐
- h) Injectable Sodium Bicarbonate ☐
- i) Injectable Adrenaline ☐
- j) Injectable hydrocortisone ☐
- k) Injectable Aldomet ☐
- l) Injectable diazepam ☐

- m) Injectable phenobarbitone ☐
- n) Injectable Antibiotic ☐
- p) Injectable hydralazine ☐

☐

15. Are the drugs in question (14) _____ available?

- a) Always ☐
- b) Sometimes ☐
- c) Not at all ☐

☐

16. If the answer to question (15) is (b) or (c) why?

KNOWLEDGE ON INFECTION PREVENTION

17. What do you do to keep hands clean before, during and after conducting a delivery at your clinic?

18. What do you do to keep the delivery surface clean?

19. What do you do to keep the perineum clean?

20. What do you do to keep the cord cutting instruments clean and sterile?

KNOWLEDGE ON PARTOGRAPH.

21. What is a Partograph?
- a) A tool used in labour. ☐
 - b) A graphical method of recording first stage of labour. ☐
 - c) A salient feature of recording the all process of labour ☐
 - d) Other (specify) _____
22. What major parameters do a partograph measure?
- a) Cervical dilatation and uterine contraction. ☐
 - b) Fetal heart sound and cervical dilatation. ☐
 - c) Fetal well being, maternal well being and progress of labour ☐
 - d) Other (specify) _____
23. Have you ever used a partograph at this centre?
- a) Yes ☐
 - b) NO ☐
24. If the answer to question (23) is (Yes) what parameters does it measure on Progress of labour?
- _____
- _____
- _____
- _____
25. If the answer to question (23) is (NO) why?
- _____
- _____
- _____
26. When do you start plotting on the partograph?
- a) At 2 cm cervical dilatation ☐
 - b) At 3 cm cervical dilatation ☐
 - c) When labour is diagnosed ☐
 - d) When you detect complication in labour ☐
 - e) Other (specify) _____

27. Is the partograph _____ available?

a) Always ☐

b) Sometimes ☐

c) Not at all ☐

☐

28. If the answer to question (27) is (b) or (c) why?

PROTOCOLS FOR MANAGEMENT OF WOMEN IN LABOUR

29. Do you have a criterion for referring obstetric complicated cases to Mbala Hospital?

a) Yes ☐

b) NO ☐

☐

30. If the answer to question (29) is (Yes) mention areas considered in a referral criteria?

31. If the answer to question (29) is (NO) why is there no criterion?

32. What other labour ward protocols are there in your labour ward?

Tick against the correct answer(s).

a) For admission of women in labour.

☐

b) For management of women in first stage of labour.

☐☐☐

- c) For management of women in second stage of labour
- d) For management of women in third stage of labour ☐
- e) For management of immediate postpartum ☐
- f) None ☐

OTHER OBSERVATIONS

33. At what stage of labour do women come to your labour ward?

- a) When they are 0-2 cm cervical dilated. ☐
- b) When they are 3-5 cm cervical dilated. ☐
- c) When they are 6-8 cm cervical dilated. ☐
- d) When they are 9-10 cm cervical dilated. ☐

34. Why do you think women come to your labour at that time?

35. What other observation have you made regarding management of women in labour at your clinic?

END OF QUESTIONNAIRE

MAY GOD BLESS YOU

THANK YOU.

THE UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
DEPARTMENT OF POST BASIC NURSING

**CHECK LIST FOR REFERRED WOMEN WITH OBSTETRIC
COMPLICATION**

DATE:

VENUE:

TIME:

INTRODUCTION:

This study is being carried out by Banda Mackson who is a 4th year Post Basic Nursing student at the University of Zambia. The study is a partial fulfilment of the award of Bachelor of Science Degree in nursing. The main objective of the study is to determine the reasons why there is an increase of pregnant mothers being referred to Mbala Hospital from Mpulungu Urban Clinic.

Confidentiality will be upheld.

INSTRUCTIONS

Tick in the box corresponding to the correct answer or write in the space provided.

1. Age of the pregnant woman

☐ A High risk – Pregnant woman with obstetric complication aged below 16 and above 35 years.

☐
☐

☐ B Low risk – Pregnant woman with obstetric complication aged between 16 to 34 years

☐

2. What is your religion?

a) Christian

☐

b) Moslem

☐
☐

c) Other (specify)

☐

3. Was a pregnant woman booked antenatally?

a) Yes

☐

b) NO

☐
☐

4. Distance to health facility.

0 – Stay within 12 kilometres within the catchment area of the health facility.

☐

1 – Stay away, more than 12 kilometres but within the catchment area of the health facility.

☐

2 – Stay outside the catchment area but within the district.

☐

3 – Stay from outside the district.

☐
☐

4 – Stay outside the district but within Zambia.

☐

5 – Stay outside Zambia.

☐

6 – Unknown address.

☐

5. Age of the Pregnant woman

☐ A High risk – Pregnant woman with obstetric complication aged below 16 and above 35 years.

☐
☐

☐ B Low risk – Pregnant woman with obstetric complication aged between 16 to 34 years.

☐

6. Parity of the pregnant woman

☐ A High risk – Parity of 6 and above

☐
☐
☐

B Low risk – Parity of 5 and below

☐

7. Gestation age at time of developing an obstetric complication / referral

8. Mother related risk factor or co-existing condition identified before developing an obstetric complication. _____

9. Obstetric diagnosis at time of referral. _____

10. Other information related to referral _____

END



**THE UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
DEPARTMENT OF POST BASIC NURSING**

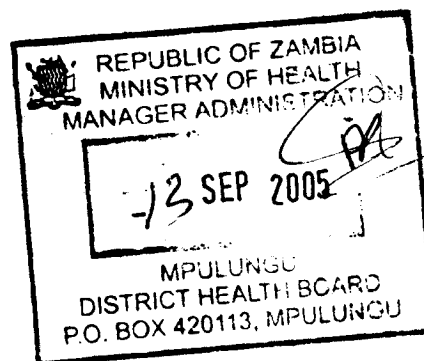
Telephone: 252453
Telegrams: UNZA. LUSAKA
UNZALUZA 44370
Fax: +260-1-250753

P.O. Box 50110
Lusaka

9th September, 2005

The District Director of Health
Mpulungu DHMT
P O Box 113
MPULUNGU

UFS: The Head of Department
Post Basic Nursing
Box 50110
Lusaka.



Dear Madam,

RE: PERMISSION TO CONDUCT A RESEARCH STUDY

Reference is made to the above captioned subject.

I am a 4th year student pursuing a BSc degree in Nursing at the University of Zambia, School of Medicine. As part of the fulfillment of a degree programme, I am required to carry out a research. The topic of my study is **"Contributing Factors on Obstetric Referrals from Mpulungu Urban Clinic to Mbala District Hospital"**.

I would like therefore to ask for permission to conduct a research study at your institution.

I will be very grateful if my request is considered.

Yours faithfully,

Mackson Banda
MACKSON BANDA
4TH YEAR BSC NURSING STUDENT

THE UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
DEPARTMENT OF POST BASIC NURSING

CONSENT FORM FOR NURSES/MIDWIVES

INTRODUCTION

Banda Mackson is a fourth year Post Basic Nursing student at the University of Zambia is carrying out a study on factors contributing to obstetrical referrals from Mpulungu Urban Clinic to Mbala District Hospital. The study is a partial fulfilment of the award of a Bachelor of Science Degree in Nursing. The main objective of the study is to determine the reasons why there is an increase of pregnant mothers being referred to Mbala District Hospital from Mpulungu Urban Clinic.

Confidentiality will be upheld.

If you have accepted to take part in the study, would do kindly complete the form below by filling in the spaces provided.

I, a nurse/midwife at Mpulungu Urban Clinic, working in labour ward have understood the objective of the study. I, therefore on this day of time consented to take part in the study.

Sign:.....

Date:.....

Witness:.....

Date:.....

MARKING KEY TO KNOWLEDGE QUESTIONS

QUESTION NUMBERS	RESPONSES	SCORES
PART A.		
17. What do you do to keep hands clean before, during and after conducting a delivery at your clinic.	Wash hands with soap and water	01
18. What do you do to keep the delivery surface clean	Disinfect with jik 1:6 and then clean with soapy water.	01
19. what do you do keep the perineum clean	Clean with soap water from front to the back	01
20. What do you do to keep the cord cutting instruments clean and sterile.	Put them in jik for 10 minutes, clean them with soapy water, rinse in clean water and boil for 20 minutes and keep them in a dry place or pack.	01
PART B.		
21. What is a partograph?	A salient feature of recording the whole process of labour.	01
22. What major parameters does a partograph measure?	Fetal well being, maternal well being and progress of labour	01
23. Have you ever used a partograph at this centre?	Yes	01
24. What parameter does a partograph on a progress of labour measure?	Cervical dilatation, descent of the head, uterine contraction	01
26. When do you start plotting on the partograph?	At 3cm cervical dilatation	01
TOTAL		9

Rating of scores

7 – 9 = High knowledge

4 – 6 = Moderate knowledge

Less than 4 = Low knowledge