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THE ACCESSIBILITY OF WOMEN TO SECONDARY
OBSTETRIC CARE IN A RURAL DISTRICT OF ZAMBIA AND THE
IMPLICATIONS FOR SAFE MOTHERHOOD

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ALEXANDRINA ALICE ZULU

B.Sc. N. (UNZA, LUSAKA)

P.H.N. (UNZA, LUSAKA)

RM. (LUSAKA MIDWIFERY SCHOOL - LUSAKA)

RN (LUSAKA NURSING SCHOOL - LUSAKA)

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ABBREVIATIONS

ABD	Assisted Breech Delivery
ANC	Ante Natal Care
CGH	Chipata General Hospital
df	Degrees of Freedom
LSCS	Lower Segment Caesarean Section
Pv	Probability Value
S.V.D.	Spontaneous Vaginal Delivery
X^2	Chi - Square

DECLARATION

I HERE BY DECLARE THAT THE WORK PRESENTED IN THIS STUDY FOR DEGREE OF MASTER OF PUBLIC HEALTH HAS NOT BEEN PRESENTED FOR ANY OTHER DEGREE.

SIGNED:.....


APPROVED BY:.....

SUPERVISING LECTURER

Dr. K. S. Baboo,
(MBBS., Mmed., FRSH)
Senior Lecturer,
Department of Community Medicine,
UNZA.

STATEMENT

I HEREBY CERTIFY 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:.....

DEDICATION

**DEDICATED TO MY CHILDREN. NATALIE, TIMOTHY RAYFORD
(JUNIOR) AND SAMUEL**

APPROVAL

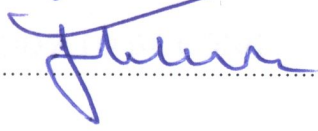
This dissertation of ALEXANDRINA ALICE ZULU is approved in partial fulfilment for the requirements for the award of the degree in Master of Public Health by the University of Zambia.

Examiner's name and signature:

Date:

Dr TY Sukwa.....

Dr KS Baboo.....  19/04/99

Dr L Chiwele.....  16.4.99

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Figure 1

Why is it difficult to sell Maternal Mortality?



It is difficult to sell a commodity that is too common !
(Marie - Therese Feuerstein - Turning the Tide, 1993 in her Poem)

SUMMARY

The study was conducted in Chipata District Health Centres and Chipata General Hospital as a secondary referral maternity care. The study included both rural and urban Centres. The purpose of the study was to determine the accessibility of women to secondary obstetric care in a rural district and the implications for safe motherhood.

Observation and literature has shown that despite the launching of Safe motherhood initiative some eleven years ago in Sub Sahara Africa, Safe motherhood in Zambia is still a big challenge. Maternal and Perinatal mortality remain high and accessibility to safe pregnancy and childbirth are not adequate.

Literature review was based on those factors that affect accessibility in terms of distances, affordability and quality of care and also the acceptability of care by the mothers themselves. Maternal mortality ratios were reviewed both locally in the country and worldwide.

Data were collected between February and March 1998 in Chipata District by interviewing 100 mothers, 75 from the rural and 25 urban and 17 staff in the centres involved. The mothers were pregnant with at least one child but not more than four attending Ante Natal clinic. The maternity records at Chipata General Hospital were reviewed for the period January 1995 to December 1997. Normal and abnormal deliveries were noted, maternal and perinatal mortality ratios worked out.

The findings of the study revealed that the proportion of rural women that were physically accessible to secondary obstetric care was very small, only 3%. Ante Natal care was free in all the health centres and this increased attendance of about 97%. In some of the rural health

centres, a minimal fee was charged for a delivery but at the secondary referral hospital, a considerable amount of admission and delivery fees were charged though there was no extra charge for Caesarean Sections. For the rural poor, cost sharing of the maternity services might be a barrier to safe Motherhood. 53% of mothers delivered at home (ZDHS 1996) and this could be attributed to the problems of accessibility to obstetric care by women in the light of poor physical access and unaffordable costs. Little or no education of women in child bearing age was also found to be a barrier to safe motherhood. 32% had no education at all while 56% had some primary education and many did not even complete it.

The women who had been referred to hospital in good time who had favourable pregnancy outcome were (78%). Review of obstetric records at the secondary obstetric care unit however, revealed a maternity mortality ratio of 795 per 100,000 live births and 53 per 1,000 perinatal deaths in the year 1997. It was further observed that on an average, 8% of the deliveries were by Caesarean sections and the main indication was obstructed labour due to Cephalo-pelvic disproportion in about 36% in 1997.

Much of the information obtained makes this study important to the health personnel and it is hoped that initiatives to make pregnancy and child birth safe will be every one's concern.

CHAPTER 1

1.1 INTRODUCTION

Women, especially during the reproductive period, have many problems that affect their health. Lately, it has been recognised all over the world that the health of women has to be re-addressed, to prevent deaths and disabilities, and to empower them so as to raise their social status in society.

In Zambia, the Health Reform Programme through the Health Boards aim at bringing health care as close to the family as possible. The guiding principals are good leadership, accountability and partnership (Ministry of Health 1992). A more positive action towards safe motherhood has been taken through Primary Health Care approach (PHC). The reproductive Health programme has been embarked on to avert the high Maternal Mortality and Morbidity (Abouzahr C et al, 1996) and make motherhood safe.

Maternal Mortality is influenced among other factors by poor access to Maternity care. In addition, one third of all child deaths occur during birth (Turmen in Safe Motherhood, issue No. 12 of 1993). The World Health Organisation (WHO) has urged policy makers of member countries to pay particular attention to the neglected tragedy of maternal mortality and morbidity. Seven agencies are supporting the Safe Motherhood initiative i.e. WHO, UNFPA, UNICEF, the Population Council and the International Planned Parenthood Federation. Each agency has pledged its commitment to improving Maternal Health around the world. (Safe Motherhood issue 3, 1993-1994)

The Safe Motherhood initiative was launched at the Nairobi Conference in 1987 with the aim of making strategies of reducing

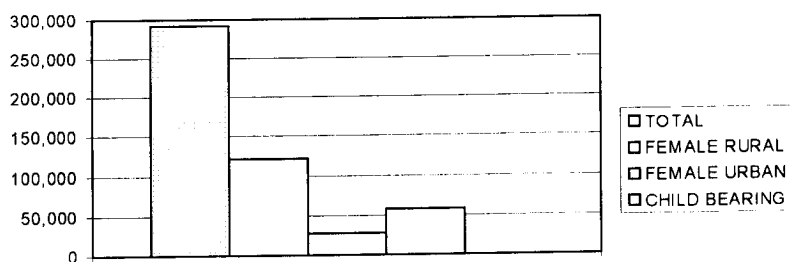
maternal mortality by half by the year 2000 (Abouzar and Raystone 1991). With only a few years to go, Safe Motherhood strategies need to be strengthened. In Zambia, the Safe Motherhood initiative was launched in March, 1997 with emphasis on the Mother and the new born interventions (Zambia Reproductive Health News 1997). Making maternal care accessible to every woman would greatly reduce the miseries that women go through.

1.2 BACKGROUND INFORMATION - ZAMBIA, CHIPATA DISTRICT

Chipata District is one of the 64 districts of Zambia. The country has 9 provinces and Chipata is the Provincial town for the Eastern Province. Zambia is a landlocked country covering an area of 752,612 square Kilometres and consisting of about 2.5% of the area of Africa. It lies between 8-18 degrees south latitude and 20-35 degrees east longitude (ZDHS 1996). The District covers an area of 11,986 square Kilometres with two thirds of her population living in the rural areas. Of the child bearing women, 67% live in the rural areas and, 33% in the urban areas.

Figure. 2

TOTAL AND FEMALE POPULATION OF CHIPATA DISTRICT



Source: Census (1990). Central Statistical Office. Population and Demographic Branch, Lusaka - Zambia

Chipata General Hospital is the Provincial second level Health Care Hospital, but also serves as a District Hospital. There are two other Hospitals within the district; Mwami at the Malawi Border and Kamoto in the Luangwa Valley though Kamoto will come under the newly created Mambwe District.

The District has twenty (20) health centres mainly spread out in the rural areas. But some of these Health Facilities are geographically in accessible to the majority of the population especially women and children in particular may experience difficulties in reaching the source of care.

The Chipata General Hospital has a capacity of 458 beds with a bed occupancy of 60 %. It has all the speciality areas inclusive of Maternity and the Operating Theatre. There are also Nursing and Midwifery Schools for Enrolled Nurses and Midwives.

1.3. **LITERATURE REVIEW**

Maternal Health

The studies on maternal health around the world showed that the problem of maternal mortality is highest in Africa. Zambia is one of the countries in the Sub-Sahara Africa with high maternal deaths. The life time risk of maternal deaths in Zambia was estimated by WHO World Bank report (1997) at 1 in 14 (based on maternal mortality and fertility rates) and perinatal deaths at 70 per 1000 births. On the other hand, European countries like Spain showed a very small figure of lifetime risk of 1 in 9200.

The reported direct causes of maternal deaths include:-

- severe bleeding
- infection/sepsis
- unsafe abortion
- eclampsia and
- obstructed labour

in that order (World Bank 1997). In the poor communities, obstructed labour as a cause of death may be more common because of poor access to emergency obstetric care.

The indirect causes include:

- malaria
- tuberculosis
- anaemia and
- HIV/AIDS.

Other causes include:

- ignorance
- illiteracy
- and failure to utilise health services

As stated in the World Bank report 1995, tens of millions of Africans suffer from Malaria each year and about One Hundred and Seventy million are afflicted by Tuberculosis and the AIDS epidemic seriously threatens many lives. These deaths can be prevented if commitment is made to make maternal care accessible and available at the appropriate time. Many of these problems are traced back to the communities. A substantial reduction in maternal illnesses and deaths would greatly increase women's contribution to economic development.

In Chipata District, however, no study had been done on maternal deaths or accessibility to emergency obstetric care. But hospital records showed a high number of Caesarean sections and perinatal deaths. Maternal deaths were hard to estimate in the district as many as about 53% of women delivered at home (DHS 1996), and death certificates in the hospital may be incomplete. An unpublished study conducted in 1996 on accessibility of women acquiring maternal care in the city of Lusaka showed that about 45% of women were delivering at home. This could have contributed to increased maternal mortality because nobody within the family had knowledge to identify their problem and save them.

Determinants of Accessibility

Access to quality maternity care is said to be imperative. Dever G. E. (1984) described the determinants of accessibility as follows:-

1. Geographical Accessibility:

The geographical accessibility relates to location of health care facility to that of the client. This is measured in mileage, travel time or travel cost. In addition, the hours the obstetricians operate or the facility remains open also influences the ability of clients to obtain care.

Bacq Fle and A. Rietsema, in their study in Northern Province found out that the women who delivered at the secondary referral hospital (Kasama), 94% came from within 2 hours walking distance. It was further observed in the study that mothers dying in the hospital, 64% came from within the same area. This points to the fact that there could be a lot more dying outside the hospital because they could not reach it in good time or they never came.

In the same study, the poor access stratum to hospital facilities showed a dose-response relationship between distance and maternal mortality. They also noted that of all women dying, proportionally more died of maternal causes in the more remote areas. However, it was also observed that poor quality of care provided, also contributed to maternal deaths other than physical accessibility alone.

Although hospitals operate on 24 hours basis, delays in attending to obstetric cases still occur because the emergency team is usually not readily available. Blood supplies necessary to carry out the operation could also be a problem. Philips D. R. (1990) stated that a practical weakness of many hospital models for optimising accessibility is that reliable data are frequently unavailable to analyse the situation and the models rarely take account of all the variables that seem to influence resource allocation and health service utilisation. The nature of the facility and its reputation is one variable that would facilitate or bar the use of the service.

2. Affordability of Care:

This involves prices of services and clients' ability to pay. Dever further stated that when economic barriers are removed, lower income groups considerably increase their accessibility to care.

The cost explosive in health care has disproportionately serious effects for the rural poor women who had never had access to adequate basic services. As stated in the report "Prospects for sustainable human development in Zambia, (1996)" poverty affected females more than males. Women and girl children face significant disadvantages as a result of their gender.

Bindari-Hammad and Smith (1992) add that economic accessibility is related to the ability of the individual or the community to cover the cost of care. If a service is available but neither the individual nor the community can afford it, then it is not accessible.

Cost: The cost of running maternity care is high. Studies on cost are scarce but observation showed that very few women in rural areas can afford to pay for emergency obstetric care that include transport to and from the facility. In rural districts communication is difficult and generally the referral system is just not in place. Abouzar et al (1996) affirms that maternal mortality is an indication of inequity in the status of women as well as their access to health care. Furthermore providing affordable maternity care during pregnancy and child birth will greatly reduce the high perinatal deaths being experienced in Sub-Sahara Africa.

3. **Acceptability of Care:**

This relates to attitudes of both the client and the health providers. Clients may be unwilling to use available services because of providers' attitudes. Furthermore, the staff at the primary obstetric care unit might not be qualified to recognise danger signs and refer to secondary care units. Thus, these factors may continue to raise the maternal mortality and morbidity.

Some accepted traditions and taboos may cause health problems that may deter access to health care. Availability of qualified staff and maternal resources are fundamental to the quality of maternal care being offered. Midwives are therefore challenged to play their rightful role in the maternity care.

Unfortunately, many of the primary health care centres have no Midwives in the rural districts and even where there are Midwives, the most basic material resources are lacking making accessibility difficult.

Unfavourable pregnancy outcome, due to poor accessibility to maternity care including maternal and perinatal deaths, is in recent years, reaching alarming proportions. This can be attributed to poor access to obstetric care.

The Mongu study in Western Province of Zambia revealed a rate of 800 maternal deaths per 100,000 live births (UNICEF 1994). In the Northern Province, in Kasama it was found to be 740/100,000 live births and 1549/100,000 live births in rural Kaputa Districts (Bacq Fle and Riestsema 1997). Abouzar et al (1996) WHO report, stated that there are about 600,000 maternal deaths per year world-wide. Hogley K. E. (1995) commented that women might even be aware of their need to obtain maternity care services, but their problem is to obtain access to these services.

Accessibility to essential obstetric care is a necessity to avert this high rate of maternal mortality.

Safe Motherhood

The growing concern for women during pregnancy and child birth led to Safe Motherhood initiatives. Safe Motherhood Initiative when implemented would improve the health of women and reduce mortality and morbidity.

The four pillars of Safe Motherhood as stated by WHO in mother and baby Package (1994) are:

- a. Family Planning Services for clients to plan and space pregnancies,
- b. Antenatal care to prevent and detect complications early and treat appropriately,
- c. to provide clean/safe deliveries by skilled attendants and adequate equipment and supplies to care for the mother and baby,
- d. and lastly access women to emergency obstetric care for high risk pregnancies and complications when needed.

Care of the New-born child is basic to safe motherhood. The health of the baby depends in large part on the health of the mother during pregnancy and delivery. (Safe Motherhood issue No. 12 1993). Improving the health of the mother would greatly benefit the baby.

The implications for Safe Motherhood according to the report on Reproductive Health in Developing Countries (1997) included that there be an increase in percentage of women with complications attended by trained medical staff. There was also a call for increased knowledge on warning signals and women to know where to go in emergencies, increased availability of transportation to essential health care facilities, increased number of facilities with trained personnel and equipment to provide essential care for obstetric complications. In addition, there must be targeted subsidies for women who cannot afford and reduce unauthorised fees.

The report further stated that there must be an increase of women with complications who are correctly managed.

There has to be quality assurance programme, provide training both basic as well as in-service and development of protocols for management of obstetric cases.

Each time a woman is pregnant, she faces a risk of dying from that pregnancy. The risk is high and access to family planning can save a lot of lives. The benefits of spacing and limiting births for the healthy mother and child should be encouraged.

The aim of the study is therefore to examine the accessibility of women to secondary obstetric care and the implications for Safe Motherhood.

1.4. STATEMENT OF THE PROBLEM

It is stated that 3 in every 4 maternal deaths result from obstetric complications . (Safe Motherhood issue No. 24 1997{3})

Poor accessibility to secondary Obstetric care is one major problem the women of child bearing age face in Zambia. As recorded in the National Health Policies (1992), women of 15-49 years form 20-22 percent of the total population. About 58% of these live in rural areas and 42% in urban areas. The crude Birth rate is 50/1000 with annual increase of 3.2%. Therefore, there are about 500,000 births per year, 300,000 occurring in the rural areas and 200,000 in the urban area with a total fertility rate of 6.1 children per woman.

In the rural areas, accessibility to maternal care is reduced not only due to long distances to be covered on foot but also to economic, social and cultural factors. In these areas, there is neither radio nor telephone communication for Obstetric emergencies, roads are sometimes impassable and transport is poor.

Surveys on accessibility in the country are scarce. The percentage of women that could be within a five kilometre radius constitute only those living in the township where secondary obstetric facilities are situated. Poor accessibility to emergency obstetric care is a threat to maternal health. In the Kaputa District survey for example, an additional risk of maternal mortality of 1006 per 100,000 was attributed to poor accessibility. (Bacq Fle and Reistesema 1997).

The implications of Safe Motherhood are therefore to have appropriate, efficient and effective interventions to reduce the burden on women's health. Maternal Mortality for Zambia, according to the WHO, is estimated at 940 per 100,000 live births (Abouzar C. et al, 1996). Thus, approximately 1 in 100 women die due to pregnancy related causes. The problem is aggravated by the high fertility rate. The causes of maternal deaths can be prevented if, along side maternal services, emergency obstetric care is made accessible to women with complications. It has been suggested that women who die more often than not are poor and present late for secondary obstetric care (Feuerstein M. T. 1993). Safe Motherhood has implications for the baby also. Most of the Neonatal deaths occur during the new born period (Turmen T 1995). Solving the accessibility problem would make a major contribution to reducing maternal and Perinatal mortality and morbidity.

1.5. JUSTIFICATION OF THE STUDY

The study addressed the concerns of women to maternity care, for example transport, costs and quality of care given. It would be essential for policy makers in forecasting demands for care, developing strategic plans and marketing safe Motherhood services. It would also offer insight into issues of delays in seeking or receiving care and the comprehensiveness of services offered.

CHAPTER 2

2.1 OBJECTIVES

GENERAL OBJECTIVE

To examine the accessibility of women to secondary obstetric care in a rural district and the implications for safe motherhood.

2.2. SPECIFIC OBJECTIVES

- a. To estimate the proportion of women with poor physical access to the service as well as to midwives.
- b. Determine to what extent user fees prevent access of women to secondary maternity care.
- c. Determine the association between pregnancy outcome and access to secondary obstetric care.

2.3 HYPOTHESIS.

Women who have no easy access to obstetric care are more likely to have adverse pregnancy outcome.

2.4 OPERATIONAL DEFINITIONS.

- 2.4.1 Maternal death** The death of a woman while pregnant or within 42 days of termination of pregnancy from any cause related or aggravated by the pregnancy or its management but not from accidental or incidental causes (ICD-10.)

- 2.4.2 Accessibility** refers to the characteristic of the health service that facilitates or obstructs use by potential clients. [Dever A.G.E. 1984]
- 2.4.3 Safe motherhood** Is creating the circumstances within which a woman is enabled to choose whether she will become pregnant, and if she does, ensuring she receives care for prevention and treatment of pregnancy complications, has access to trained birth assistance, has access to emergency obstetric care if she needs it and care after birth, so that she can avoid death or disability from complications of pregnancy and child birth. (Feuestein M.T., 1993)
- 2.4.4 Secondary Obstetric Care** Refers to first and second level hospital maternity care dealing with obstetric emergencies.
- 2.4.5 Primary Obstetric care** Refers to maternity care given at a clinic or health centre - urban and or rural.
- 2.4.6 Perinatal Death** Death of the new born around birth - first week after birth. It includes stillbirths.
- 2.4.7 Stillborn** A product of conception that shows no sign of life after complete birth.

CHAPTER 3

3.0. METHODOLOGY

3.1. RESEARCH DESIGN:

A qualitative and quantitative research design was used in the study to identify and explore a number of mutually related variables that gave insight into the accessibility of women to secondary obstetric care and the implications for safe motherhood. An attempt was made to identify and describe the various possible factors associated with barriers to care. Comparison was made between the rural and urban populations. Hospital based maternal and perinatal data were also collected from registers, death certificates and patients notes retrospectively from January, 1995 to December, 1997 at Chipata General Hospital only as the secondary obstetric care unit. The data were quantified to determine the size, distribution and association of certain variables in the study.

3.2. RESEARCH SETTING:

The research was conducted in Chipata District, Eastern Province of Zambia. Fig. 11 shows the geographic location of Eastern Province and Chipata District. Permission to conduct the study was obtained from the Directors of Chipata District and Chipata General Hospital Health Boards. The District has a General Hospital and two Mission Hospitals. Of the Eighteen Health Centres, 3 are Urban and 15 are rural. The rural centres, serve on the average, a population of about 12,687. (District Action Plan 1997)

The centres used in the study were eight, six rural and two urban. The township population is also serviced by three private surgeries. In the rural areas there are a few commercial farmers. The rural

population are mainly peasants. The main food crop is maize. The people have limited access to clean water supply and sanitary latrines.

3.3. PRETESTING THE INSTRUMENTS:

The pretesting of data collecting tools was done on a few mothers and staff. Readjustments of the instruments was made before the start of data collection.

3.4. SAMPLE SELECTION:

A stratified random sampling method was used to select the health centres. The centres were divided into sections around the District and a random sample from each section was done to obtain the required centres.

3.5. CRITERIA FOR SELECTION

- i. Pregnant women from the eight selected centres, with at least one child but not more than 4 children were interviewed.
- ii. Two staff at the centre at the time of the interviews were asked to complete their questionnaire.
- iii. The obstetric records - registers, case records and death certificates were reviewed and the following data extracted:-
 - deliveries
 - L. S. C. S.
 - Forceps
 - Breech
 - Maternal Deaths
 - Perinatal deaths
- iv. Distance to the facility.

3.6. **REVIEW OF MATERNITY RECORDS**

The total deliveries were counted one by one from the delivery registers. Also counted were the abnormal deliveries for example delivery by forceps, assisted breech and L.S.C.S. The L.S.C.C. were also counted from the theatre registers and confirmed by checking from the patients' notes. The indications for Caesarean section were also noted. The Still Births were counted from the delivery registers confirmed by a record of zero (0) Apgar Score. The Perinatal deaths (those born alive and die within a day) were got from death certificates. The maternal deaths were counted from the death certificates. All maternal deaths were registered because no body is given out for burial without a death certificate. But not all Still Births were issued with a death certificate. Therefore, the record in the registers was more reliable. The death certificates from April to July 1995 were missing and thus some information was not obtained. For the year 1996, some papers for the months of March, August and September were torn from the registers making it difficult to have all the figures. The records on referrals were incomplete and this made it difficult to have the number of all mothers referred to secondary obstetric care.

3.7. **SAMPLE SIZE:**

The sample size was 100 women, 75 of whom were from rural areas and 25 from urban areas. There were also 17 members of staff from the centres included in the survey.

The study concentrated on a small population in order to remain flexible in the number of variables to be included during implementation and permitted an in-depth description of some variables and how they were related.

3.8. **DATA COLLECTING AND TOOLS**

- I. Structured interview schedule for women
- ii. A self administered questionnaire for maternity staff
- iii. Obstetrical records at Chipata General Hospital.

Data were collected between the second week of February and the fourth week of March, 1998. Interviews were stretched over a period of 6 weeks because of financial and transport constraints. The investigator was introduced to the health centre staff by the in-charge. Co-operation of the subjects was gained by self introduction to the respondents and giving brief explanations of the nature and purpose of the study. Mothers who attended the Ante Natal Clinic (ANC) that day fitting the criteria for selection were interviewed. The mothers had to give written consent.

The interviews were conducted in a quite room provided in each health centre to ensure privacy and a quite atmosphere so that respondents could freely answer the questions. All eligible respondents were willing to take part in the study. The respondents had ample time to answer and ask questions.

Using a standardised structured interview schedule, information was gathered from mothers by the investigator on characteristics of the respondents and other variables. The main variables were distance to secondary obstetric care units, as well as the nearest Health Centre, cost for delivery care as well as transport costs to and from the Health Centres. To determine the outcome of pregnancy at the secondary health centre, a retrospective review and summary of the normal and abnormal outcome of pregnancy was done.

3.9 ETHICAL CONSIDERATION AND APPROVAL

Permission to conduct the study in the district was sought from the Directors of Chipata District and General Hospital. The UNZA ethics committee's approval was obtained before the start of the study. The respondents gave their consent to participate in the study.

CHAPTER 4.

4.0 DATA ANALYSIS PRESENTATION AND DISCUSSION OF FINDINGS

4.1 DATA ANALYSIS.

The data were analysed both with the aid of a scientific calculator and the use of computer epi-info statistical software. Raw data were first edited for completeness and accuracy, tallied on the worksheets and then entered in the computer; thus putting together all data from the study subjects. Most of the responses were categorised and suitable terms were formulated to bring all such related data together. These were added and converted into actual numbers. The statistical data were put in table form, graphs, etc. in an explanatory manner with all percentages rounded to whole numbers.

Statistical Tests:- In determining the relationship between variables a statistical analysis was done. This involved the calculation of chi-square (χ^2) and or Yates test to determine the association, whether the observed frequencies of the individuals with the given characteristics were significantly different to those expected on some specified theory or hypotheses. A P-value of 0.05 or less was considered to be statistically significant.

4.2 PRESENTATION AND DISCUSSION OF THE FINDINGS

The findings of the study were based on the analysis of the responses from the mothers and staff in the rural and urban health centres in Chipata district as well as from review of obstetric records at secondary obstetric unit (Chipata General Hospital). The purpose of

the study was to examine the accessibility of women to secondary obstetric care and the implications for safe motherhood.

THE CHARACTERISTICS OF MOTHERS

Age, level of education, marital status and parity of women to some extent affect their accessibility to health care.

Table 1: CHARACTERISTICS OF MOTHERS

	RURAL			URBAN		
	RESPONDENTS					
		75		25		
1.	AGE IN YEARS	No.	%	No.	%	TOTAL
	15 - 24	34	45	14	56	48
	25 - 34	39	52	10	40	49
	35 - 44	1	1.5	1	4	2
	DON'T KNOW	1	1.5	0	0	1
2.	MARITAL STATUS					
	Married	67	89	23	92	90
	Divorced	4	5	1	4	5
	Widowed	2	3	1	4	3
	Single	2	3	0	0	2
3.	LEVEL OF EDUCATION					
	PRIMARY	42	56	8	32	50
	SECONDARY	9	12	14	56	23
	NO EDUCATION	24	32	3	12	27
4.	NUMBER OF CHILDREN					
	ONE	20	26	9	36	29
	TWO	16	21	11	44	27
	THREE	17	23	3	12	20
	FOUR	22	30	2	8	24

Table 1 shows the characteristics of the mothers.

Very young women with no or low education are most vulnerable in society. These women mostly depend on what the men can do for them. Therefore, the limitation of resources and the increased number of children certainly affect their accessibility to health care.

MARITAL STATUS AND AGE

Most of the women in Zambia marry. In this study 89% from the rural and 92% from the urban area were married. But they marry very early, mostly in their teens. However, Family Care International, in their situational analysis study in 1994, found out that the medium age at first marriage had increased from 17 to 18 years. Marriage does affect women's accessibility to health care because the decisions whether to attend a health facility have now to be made by the husband. Most of the time, men do not seem to prepare enough for their wives' pregnancy resulting in inferior maternal care.

EDUCATION.

Women still have limited access to education. 32% in the study had no education at all. 56% had primary education, and many did not even complete the primary education. Other studies have shown that the more educated the woman is the more likely she is to seek obstetric care for herself and have trained attendants during delivery. Education has also an impact on a woman's confidence, status and ability to participate in decision making, both within her own home and her community (Family Care International 1994)

DISTANCE TO THE NEAREST HEALTH CENTRE AND SECONDARY HEALTH CARE UNIT.

Physical accessibility to a health care facility is still an issue to be addressed. Urban and rural differences and inequalities still persist as was observed by Phillips D.R. (1990). In this study, 55% of the respondents lived within 5km to the nearest health centre in the Rural areas, but only 3% to secondary health care (hospital).

Therefore they may not even be going to hospital and delivering at homes because delivering at hospital could mean transport costs. Majority of these families could not afford this. Decisions at homes are still made by men and women's faith is dependent on them.

76% in the Rural areas, lived more than 21km from the secondary health care (hospital). This points to the need of transport and of course money for women to be able to reach the secondary obstetric care should need arise. Even where roads are passable, accessibility to secondary obstetric care could still be limited if transport money is not readily available. A P-value of <0.001 is very significant indicating poor access to secondary obstetric care.

Thus, the proportion of women who are physically accessible $< 5\text{km}$ to secondary obstetric unit in the rural area is limited. A p-value of <0.001 is highly significant and could not have happened by chance alone. The majority (77%) live more than 5km from the secondary obstetric care unit.

Table 2a: DISTANCE TO BE COVERED WHEN THE MOTHER ATTENDS THE:-

	RURAL			URBAN		
	75			25		
a	NEAREST HEALTH CENTRE (DISTANCE IN KM)	No.	%	No.	%	TOTAL
	LESS THAN 5	41	55	23	92	64
	5 - 10	25	33	2	8	27
	11 - 15	9	12			9
	16 - 20					0
	21 and Above					0
b	THE SECONDARY HEALTH CENTRE (DISTANCE IN KM)	No.	%	No.	%	TOTAL
	LESS THAN 5	2	3	21	84	23
	5 - 10	5	7	4	16	9
	11 - 15	4	5	0		4
	16 - 20	7	9	0	0	7
	21 and Above	57	76	0	0	57

Table 2b:- DISTANCE TO SECONDARY OBSTETRIC CARE
UNIT - RURAL AND URBAN

	RURAL	URBAN	TOTAL
< 5 km	2	21	23
> 5 km	73	4	77
TOTAL	75	25	100

$$\chi^2 = 70.1 \text{ df } PV < 0.001$$

ACCESS OF WOMEN TO A TRAINED MIDWIFE:

Of the rural health centres visited, about 82% had at least one trained staff attending to obstetric cases, though in some centres, the staff were not midwives. The Traditional Birth Attendant (TBAs) do assist the trained staff at the health centres to conduct ANC's and deliveries in the community. Although the Government suspended the training of TBAs, these women have continued their noble work, sadly without training. As earlier mentioned in this study, 53% of mothers deliver outside the health institutions and are assisted by relatives and TBAs. It was observed that health workers in the rural areas are insufficiently supported and supervised. Communication between the health centre and secondary obstetric health care was very minimal. Only a few mission health centres had Radio communication and an Ambulance.

When reviewing the obstetric records at the hospital, for the year 1995, 37% had no record of where they came from, 35% came from within 5km and 65% came from more than 5km.

Table 3: ANTE NATAL CARE GIVEN TO MOTHERS IN HEALTH CENTRES

	RURAL			URBAN		
	75			25		
1.	Gestation Age at 1st visit	No.	%	No.	%	TOTAL
	1 - 3 months	2	3	2	8	4
	4 - 6	70	93	22	88	92
	7 and above	3	4	1	4	4
2.	Number of ANC visits					
	One	3	4	1	4	4
	Two	21	28	4	16	25
	Three	23	31	3	12	26
	Four	28	37	17	68	45
3.	Examination at ANC					
	Palpation	75	100	25	100	100
	Hb	27	36	19	76	46
	RPR	25	33	24	96	50
	T.T.	73	97	25	100	98

ANTE NATAL AND QUALITY OF MATERNAL CARE

It was observed that ante natal care is free in all the health centres. In this study, 75% of the respondents had already attended the clinic three times and above. The findings compare favourably with the Zambia Demographic Health Survey (1996) of 96% Ante Natal attendance. This is as was suggested by Dever G.E. 1984 that when economic barriers are removed, accessibility to care increases. Therefore, women in Zambia have adequate access to Ante Natal care.

However, the impact of care given during the Ante Natal period needs to be carefully evaluated. Examination of haemoglobin (Hb) for anaemia and Rapid Plasma Reaction (RPR) for syphilis for example are not done in most health centres to be able to detect and treat these conditions. The equipment and reagents are a big problem.

The staff in the rural health centres need to be reoriented in obstetric care so that they are able to detect complications and refer in good time. Because of economic depression, some of these services are not in use and women with problems remain undetected. If women are to acquire these facilities then government should strengthen infrastructure.

There was a high rate of Tetanus Toxoid (TT) vaccination. 97% of pregnant mothers received the vaccine, an indication that the supply of vaccines was regular in the health centres and women were likely to be protected from tetanus.

Many women in Zambia do not start attending Ante Natal Clinic until at about six (6) months pregnancy. This is usually associated with traditional beliefs. It is believed that pregnancy should be hidden to the public during the first trimester to prevent interference of the pregnancy by the witches. In this study, in rural areas, 93% only started Ante Natal care during the end of the second trimester which is considered late for proper monitoring of pregnancy complications.

Quality of care is also affected by the availability of supplies and equipment to be used in the carrying out of the necessary procedures. 47% of the staff interviewed in the health centres indicated shortage of supplies as their most critical problem and 17% indicated water problems. These problems obviously limit access to quality maternity care.

PAYMENT FOR A DELIVERY

It was observed that a minimal fee was charged for a delivery in the rural health centres. 96% of the respondents said they paid less than one thousand Kwacha (K1,000.00). In urban areas, 76% paid at least not less than K5,000.00 at the time of the study.

P-value of 0.000 is highly significant and user fees may bar women from receiving maternity care. But the fact that rural women are charged a minimal fee shows a deliberate move by government to reduce payment for maternity care service in the rural areas. It was interesting to note that at the secondary health care (hospital) women who attended maternity services, or came to deliver, paid more than the other patients admitted at the hospital. The women paid for the delivery on top of the admission fee which applied to all in-patients.

However, it was gratifying to note that there was no extra charge for those who had Caesarean Section. It is appreciated that maternity services are very expensive to run and accessibility in terms of costs is therefore limited to many poor rural women. These fees can be adjusted to make this essential service affordable. And by retaining some of the collected funds locally, the service can be improved and go a long way to enhance accessibility to obstetric care (Table 4ab).

Table 4a: PAYMENT FOR A DELIVERY IN RURAL AND URBAN HEALTH CENTRES

RURAL			URBAN		
75			25		
AMOUNT	No.	%	No.	%	TOTAL
Less than K5,000	43	57	6	24	49
K5,000 - K10,000	2	3	19	76	21
K11,000 - K15,000	0		0		
K16,000 - K20,000	0		0		
K21,000 and above	0		0		
Not paying	30	40			30

Table 4b Chi square test

	< K5,000	> K5,000	TOTAL
Urban	6	19	25
Rural	43	2	45
Total	49	21	70

$$\chi^2 = 39.185 \quad 1 \text{ df} \quad P.V. = 0.000$$

ACCESS AND PREGNANCY OUTCOME

When a woman with a complication is referred to hospital in good time, the out come is usually good. Out of 30% mothers referred in rural areas, 83% had a favourable outcome and delivered a live baby. Of the 31% who lost at least one baby, 61% of the babies died after two months and above indicating a high Neonatal death rate. Sadly still, 33% of the babies died within the first week of life indicating problems arising around birth, either with the mother or care given at the time of child birth was inadequate. Neonatal mortality is very high in Zambia at 97/1000. Improving access to emergency obstetric care would at least reduce the perinatal deaths.

Table 5a: WOMEN REFERRED TO HOSPITAL AND THE OUTCOME OF THE PREGNANCY WHEN REFERRED

RURAL			URBAN			
75			25			
REFERRED	No.	%	No.	%	TOTAL	
Yes	30	40	12	48	42	
No	45	60	13	52	58	
RURAL			URBAN			
N 30			N 12			
OUTCOME OF THE PREGNANCY	No.	%	No.	%	TOTAL	%
Live Baby	25	83	8	66	33	78
Dead Baby	2	7	2	17	4	10
LSCS	3	10	2	17	5	12

Table 5b:- UNFAVOURABLE PREGNANCY OUTCOME FOR THE REFERRED WOMEN - RURAL AND URBAN - Chi square test

	Dead Baby	LSCS	TOTAL
Rural	2	4	6
Urban	2	2	4
Total	4	6	10

$$\chi^2 = 0.208 \quad 1df \quad PV < 0.50$$

The unfavourable pregnancy outcome for the referred women for rural and urban $p < 0.50$ was not significant, probably it occurred by chance. But 41% of women lost their babies after being referred to secondary obstetric care unit and 32% babies died during delivery and within one week of birth increasing perinatal mortality. Thus, women who have no access in terms of distances, costs and acceptance of care may end up with unfavourable pregnancy outcome.

Table 6: WOMEN WHO LOST AT LEAST ONE CHILD AND AGE AT WHICH THEY DIED

RURAL			URBAN			
75			25			
LOST A CHILD	No.	%	No.	%	TOTAL	
Yes	31	41	11	45	42	
No	44	59	14	55	58	
AGE AT DEATH	No.	%	No.	%	TOTAL	%
During Delivery	7	23	2	18	9	21
Within one week	3	10	2	18	5	12
Within one month	2	6	2	18	4	10
Two months and above	19	61	5	46	24	57
Total	31	100	11	100		100

REVIEW OF OBSTETRIC RECORDS AT CHIPATA GENERAL HOSPITAL

Table 7. PREGNANCY OUTCOME AT SECONDARY OBSTETRIC CARE UNIT (CGH)

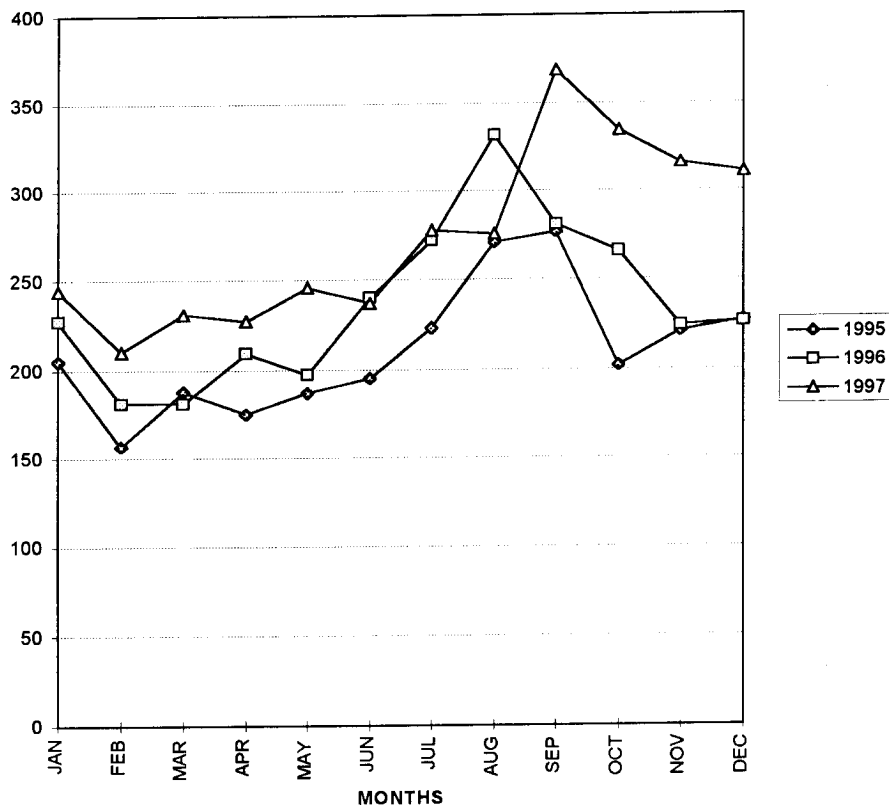
Year	Total Del.	S.V.D	L.S.C.S.	Forceps	Breech	Maternal Deaths	Perinatal Deaths
1995	2528	2175	209	51	93	9	148
1996	2836	2464	244	40	88	13	167
1997	3280	2877	261	26	116	25	173
Total	8644	7516	714	117	297	47	488

DELIVERIES

Deliveries at Chipata General Hospital show an upward trend. The reasons could be varied, more people are preferring coming to the facility or more women are becoming pregnant. As stated in the ZDHS 1996, the fertility rate is still at 6.1 average number of children per woman. Child bearing starts quite early in Zambia and this puts the adolescent at twice the risk of complications as a woman in her twenties. (Family Care International 1994) It is further pointed out that there is significant unmet need for family planning for both those who wanted to space their children as well as for the unwanted pregnancy.

Figure 3. MONTHLY NUMBER OF DELIVERIES AT CHIPATA GENERAL HOSPITAL FOR THE PERIOD 1995 TO 1997

DELIVERIES

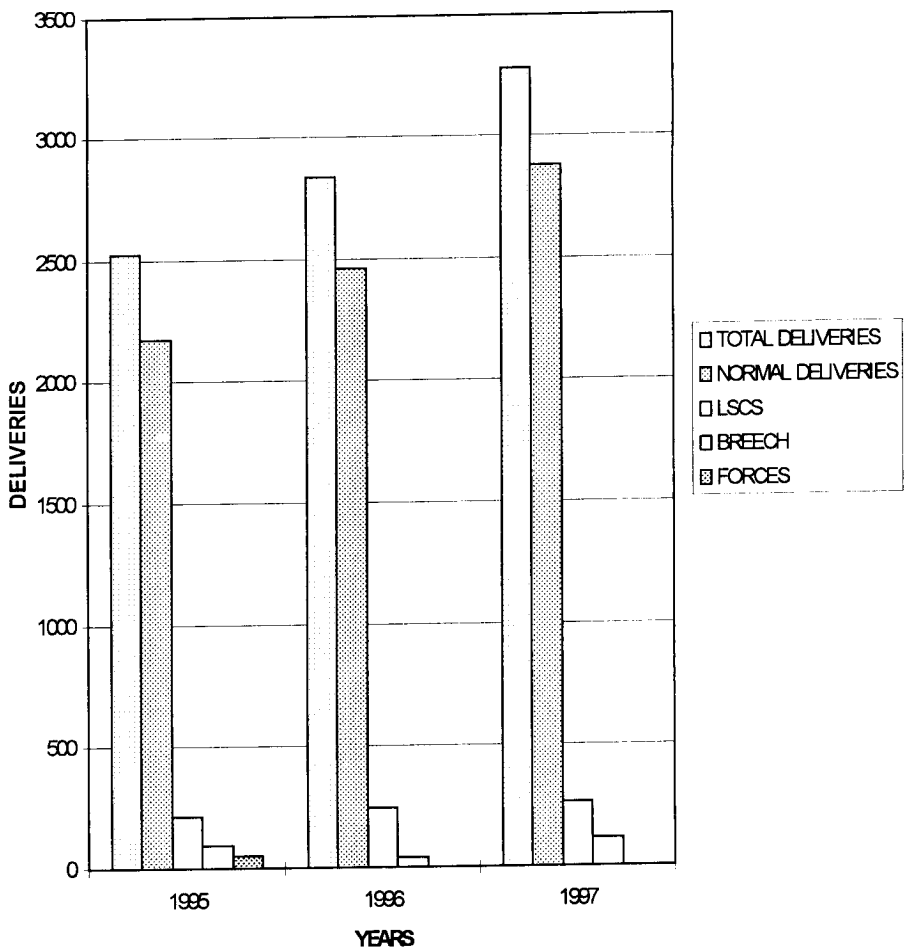


Source: Maternity Registers at Chipata General Hospital 1995 - 1997

There is need to help women and men to make informed choices on family planning services. It was noted that the deliveries were more between July and September. Therefore certain months could be targeted to intensify health education on family planning and reduce the number of deliveries.

Figure 4.

**TOTAL NUMBER OF DELIVERIES AND THE MODE OF DELIVERY AT
CHIPATA GENERAL HOSPITAL FOR THE PERIOD 1995 TO 1997**



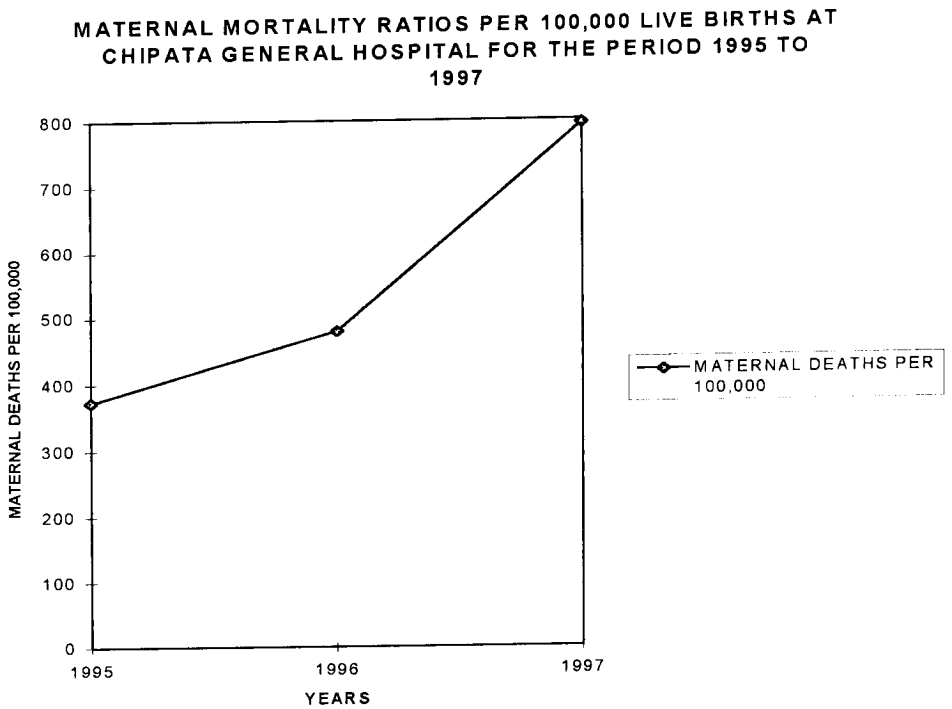
Source: Hospital Delivery and Theatre Registers.

THE TOTAL NUMBER OF DELIVERIES AND MODE OF DELIVERY

The increased numbers of abnormal deliveries cause great concern as the breech and forceps deliveries tend to contribute to increased maternal and perinatal deaths especially when women present late because of poor access to the service. In addition, morbidity causes a lot of misery to women. Caesarean Sections for example make maternity service very expensive. These abnormal routes of delivery contribute a lot to maternal and perinatal deaths.

MATERNAL MORTALITY

Maternal mortality is a public health problem. In this study, the maternal mortality ratio in 1997 at the hospital was 795 per 100,000 live births. The figure is higher than the National rate of 649 per 100,000 according to the Zambia Demographic Health Survey (ZDHS) 1996. It is therefore important that the public is made aware of the problem so that it becomes everyone's concern to reduce it. Commitment by the government to the cause of women's health would greatly enhance public action. Feuerstein M. T. 1993 in her poem from the book "Turning the Tide" expressed the reasons why women continue to die in child birth, for example, that maternal mortality is too common and therefore it has no market.

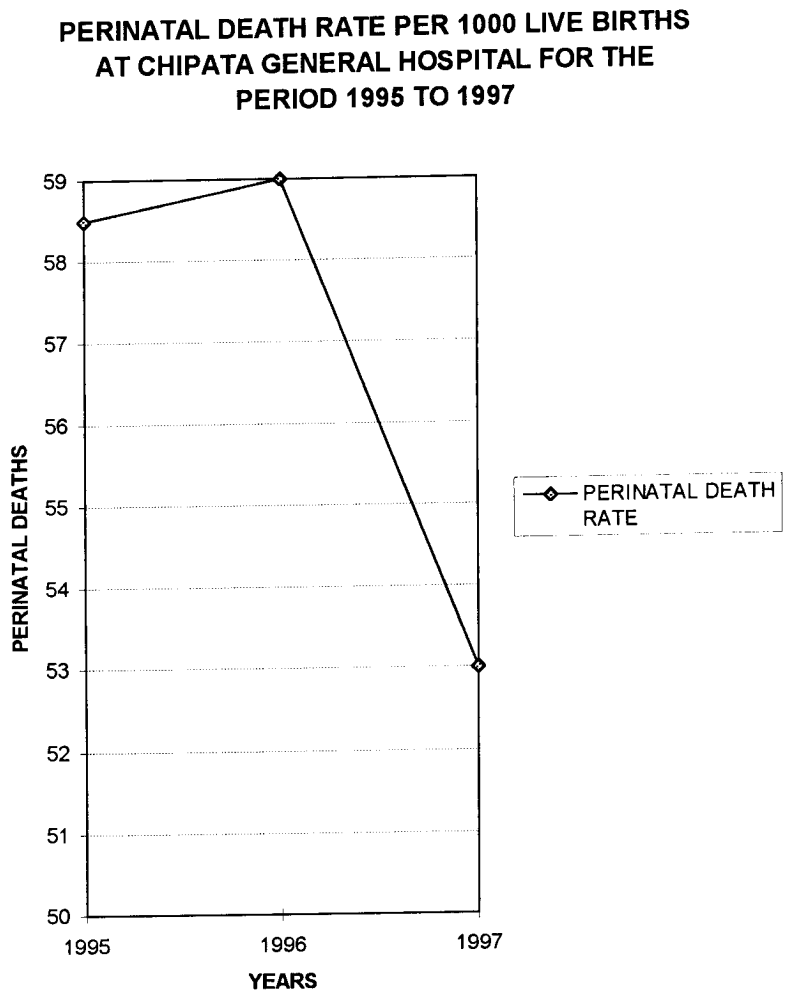
Figure 5.

Source: Maternity Registers 1995 - 1997

PERINATAL DEATHS

Deaths of new born babies around birth continue to occur as the health of women is not given the attention it deserves. In Zambia Neonatal mortality is about 98 deaths per 1000 live births (ZDHS 1996).

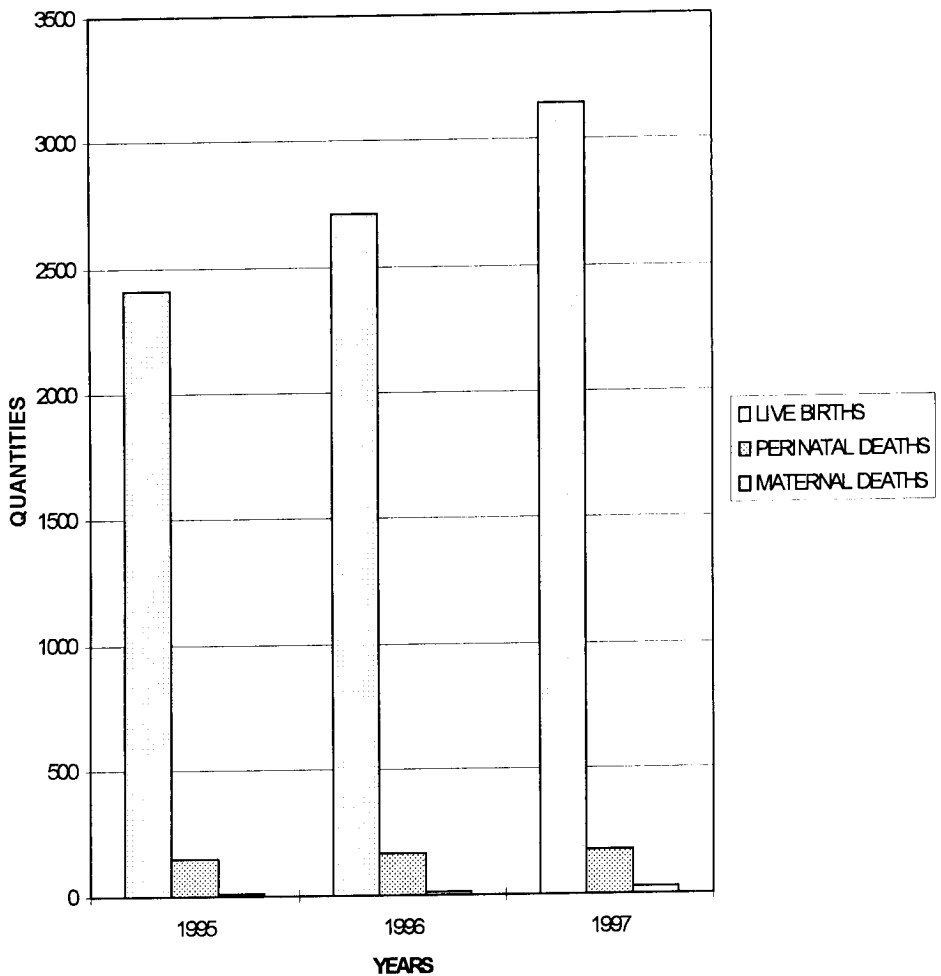
In this study, the perinatal deaths were 53 per 1000 live births for the year 1997. This figure, though lower than that of the previous year, is should still be a cause of concern. Recent studies have shown that the health of the mother influences the survival of the infant.

Figure 6.

Source: Maternity Registers 1995 - 1997

The unfavourable pregnancy outcome at the hospital could be attributed to various reasons but at the same time suggest that access to emergency obstetric care was not adequately available or provided.

**Figure 7. MATERNAL AND PERINATAL DEATHS AT CHIPATA
GENERAL HOSPITAL FOR THE PERIOD 1995 TO 1997**



Source: Hospital Delivery Registers and Death Certificates

LOWER SEGMENT CAESAREAN SECTION

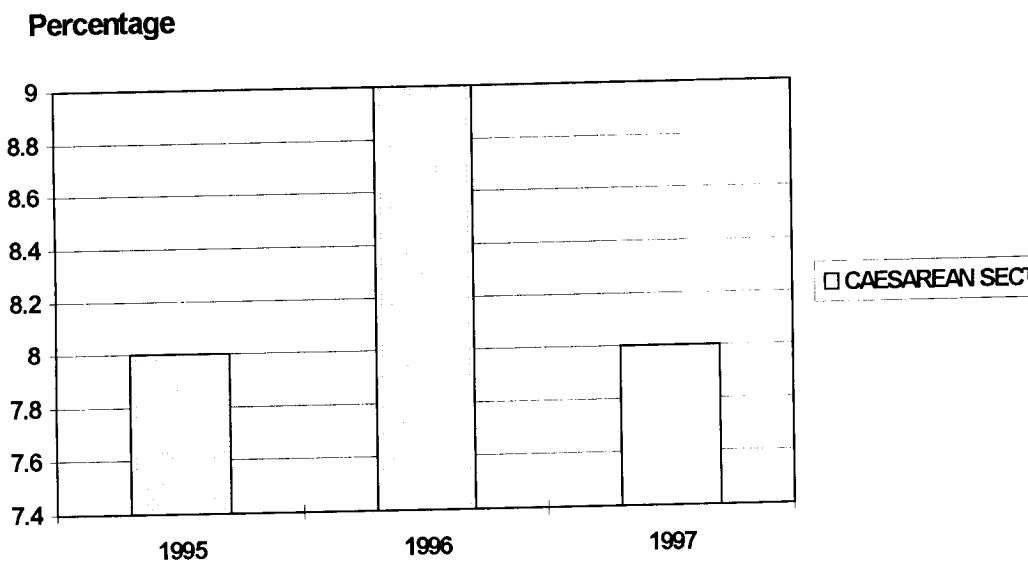
For the past three years, the proportion of Caesarean Section at the hospital has been fluctuating between 8-9%. The main indications for the sections are a combination of prolonged labour because of obstruction due to Cephalo-pelvic disproportion leading to ruptured uterus, age and taking of herbs during labour. These seem to play a

major part. For the three years 1995 -1997, 32% of those who had LSCS performed were aged 14 - 19 years.

In this age group, the pelvis is not yet fully developed and Cephalo-pelvic disproportion is common. It is interesting to note that there is a substantial increase of teenage pregnancies reflecting a very early fertility. It is stated that three out of ten teenagers in Zambia have either already had a child or are pregnant with their first pregnancy. (ZDHS 1996).

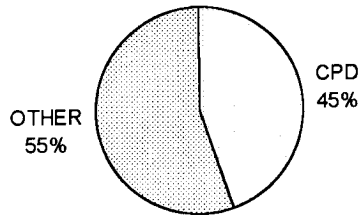
The number of women undergoing Caesarean section year on year is increasing (Figure 10). Operations are not without complications. Therefore, other than saving life, these operations subject women to a lot of suffering and some women do not access themselves to secondary obstetric care because of fear of being operated on, thus increasing the number of maternal and perinatal mortality

Figure 8. THE PROPORTION OF CAESAREAN SECTIONS PERFORMED FOR THE PERIOD 1995 TO 1997



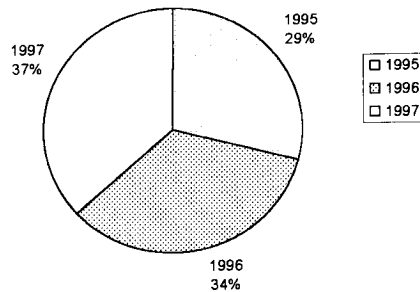
Source: Maternity and Theatre Registers at Chipata General Hospital

**Figure 9. THE MAIN INDICATION FOR CAESAREAN SECTIONS
AT CHIPATA GENERAL HOSPITAL FOR THE PERIOD 1995 TO
1997**



Source: Maternity registers and patients' case notes 195-1997

Figure 10. The Proportion of Caesarean Sections year on year



Source: Maternity Registers and Patients' case notes 1995 - 1997

**Table 8: WOMEN WHO HAD LSCS
PERFORMED BY AGE GROUP 1995 - 1997**

AGE	1995		1996		1997	
	No.	%	No.	%	No.	%
14 - 19	70	33	84	35	72	28
20 - 25	41	20	70	29	92	35
26 - 31	26	13	32	13	45	17
32 and above	32	15	30	12	29	11
not indicated	40	19	28	12	23	9
TOTALS	209	100	244	100	261	100

TRADITIONAL BELIEFS AND ACCESS TO SECONDARY OBSTETRIC CARE

The use of "African Syntocinon" is very common in the setting. 54% of the women admitted to the use of herbs in labour. The use of herbs usually leads to ruptured uterus and death if there is delay in getting to the hospital.

Table 9: CULTURAL BELIEFS IN PREGNANCY AND LABOUR - MOTHERS AND STAFF

RURAL			URBAN		
75			25		
MOTHERS' CULTURAL BELIEF	No.	%	No	%	TOTAL
Yes	41	55	2	8	43
No	34	45	23	92	57
RURAL			URBAN		
41			2		
KIND OF BELIEF	No.	%	No.	%	TOTAL
Use of herbs	22	54	2	100	24
Hiding Labour	19	46	0	0	19
	41	100	2	100	43
RURAL and URBAN					
17 BOTH RURAL and URBAN					
STAFF CULTURAL BELIEF HEARD		NUMBER		%	
Yes		15		88	
No		2		12	
		17		100	
KIND OF BELIEF					
Use of Herbs by mothers		13		76	
Hiding Labour		2		12	
Refusing Blood		2		12	
		17		100	

The other belief that is being practised is hiding that labour has started until when labour is well established. These beliefs have adverse effects because women deny themselves access to care until when it is too late. Some women even after waiting at the "hospital waiting homes" had ended up with rupture of uterus because of

hiding that they were in labour until it was too late. But beliefs like being delivered by a male Midwife did not raise a problem in both rural and urban areas. Most of the respondents (rural 95% and urban 85%) did not mind being attended to by male Midwives. They expressed the view that labour was a critical event and any member of staff in a position to assist would be acceptable.

CHAPTER 5

5.0 IMPLICATIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 IMPLICATIONS FOR SAFE MOTHERHOOD

It was established in the study that maternal and perinatal deaths in the district are just as high as the national figures. To make pregnancy and child birth safe is still a challenge in Zambia.

When discussing safe motherhood, local analysis of maternal deaths using process indicators is necessary to find out actual causes of death and the way of preventing the same occurrence. Abouzahr C. in safe motherhood issue No. 23 (1997) reaffirmed that knowledge on maternal mortality ratio needs to be complimented by an analysis of why women are dying from pregnancy related conditions. This would reveal whether women cannot reach the appropriate services, or services do not exist or are inaccessible because of distance, cost or social and cultural barriers. The analysis would also reveal whether women are dying because the health care they receive is inadequate, inappropriate or substandard.

Nearly half of the births take place outside the health institutions for various reasons (ZDHS 1996). Community involvement is therefore necessary in tackling the issue of safe motherhood. The communities should say what is acceptable to them and how they would like to be assisted in addressing the issue of safe pregnancy and childbirth.

Radio communication and Ambulance service between the health centre and the hospital when established in the district would go a long way in reducing the problem of physical accessibility.

Keeping the cost of services as low as possible would also remove barriers to maternal care. Equipping the rural health centres with trained Midwives who would be able to detect complications and refer in good time is fundamental. Health centres are at least within easy reach of the women and a Midwife at the centre together with the community being served can do a lot to make motherhood safe.

CONCLUSION

The study sought to examine the accessibility of women to secondary obstetric care and the implications for safe motherhood. It was revealed in the study that rural women had no easy physical access to a secondary obstetric unit. The majority of women (57%) lived twenty-one or more kilometres away from the obstetric unit (table 2) and failed to acquire the service. The cost of maternity service in the rural areas has been considerably fair as majority of women (57%) paid less than five thousand Kwacha (K5,000.00) for a delivery and 30% did not pay at all. Antenatal care is free in both rural and urban areas. ANC attendance in Zambia is about 96%. However, the problem of transport and transport costs remain a barrier to maternity care in the rural areas. This could have contributed to women delivering in homes and those who developed complications may have lost their lives.

In reviewing the obstetric records at the secondary obstetric care unit, it was revealed that maternal mortality is high increasing from 400 to about 800 deaths per 100,000 live births from 1995 to 1997 respectively. The perinatal mortality showed a down ward trend though by 1997, it was 53 per 1000 births. (Figure 6) There was a considerable number of women who had breech and instrumental deliveries. These difficult deliveries could have contributed to perinatal deaths.

It was also noted that the number of Caesarean Sections was increasing at the hospital (Figure 10) and the indication for C/S was CPD in 45% cases (Figure 9). This implies that almost half of the women may need emergency obstetric care.

The communities should be made aware of the problem of maternal and perinatal deaths and the need for safe pregnancy and child birth.

It was established in the study that in order to have proper information, record keeping is very important. There is a lot more to be done to reach the goal of safe motherhood for all women by the year 2000.

In a combined effort, barriers to maternal care such as distances, service and transport costs and acceptability of care can be reduced to improve safe motherhood. Moreover, participation in any programme by the communities requires a continuous expenditure of time, effort and money.

Therefore, the communities need the knowledge about safe motherhood to be able to play their part.

5.3 RECOMMENDATIONS

5.3.1 Radio Communication and Ambulance Service

The district should include in their action plan provision of radio communication between the health centres in the rural areas and the referral hospital. Ambulance service should also be introduced. The modalities of running an ambulance service should be discussed with the communities concerned. This would improve maternity care accessibility as far as distances and transport are concerned.

5.3.2 Free or low charge Maternity service.

The maternity care service should continue on free or very low charge so that the poor who are mostly victims of maternal and perinatal deaths may benefit from the safe motherhood programme.

5.3.3 Policy on Maternal death inquiries and “maternity waiting homes”.

The Ministry of Health, through the Central Board of Health, should issue policy statements introducing inquiries into causes of maternal deaths. This would point to the production of process indicators for standard maternity care. The policy should include establishment of “Maternity waiting Homes” at all referral hospitals to cater for the ‘at risk’ women to wait at the hospital. More emphasis should be put on keeping records.

5.3.4 Local Research in safe Motherhood

The Central Board of Health through the Reproductive health and research units should encourage and fund local research in the area of safe motherhood. This would encourage staff in the health centres to do their best.

5.4 LIMITATIONS OF THE STUDY

Studies on maternal mortality in Zambia are scarce although many studies world-wide have been conducted. The use of records was a limitation as some records were incomplete or not available. For this reason, the years reviewed were reduced to three recent years instead of the initial five year period.

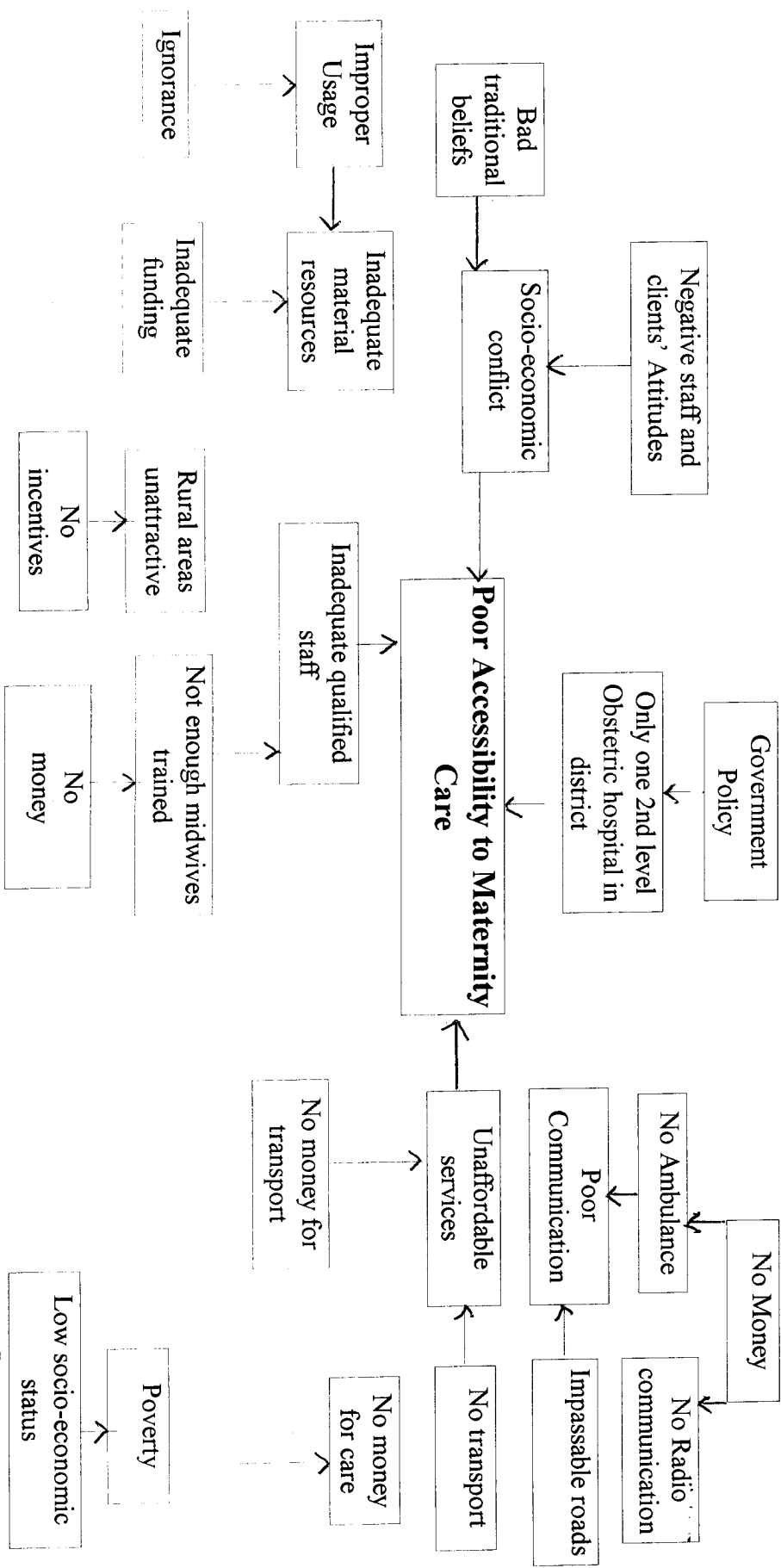
The biggest problem encountered was the lack of funding from the Ministry of Health as the sponsor of the project. This limited the sample size, the period in which the study was to be conducted and cut down activities like focus group discussion. Having conducted the study in the rural area was even harder as transport was not easily available. Thanks go to the WHO for their timely assistance

5.5 THE COST

The study was estimated at a cost of K1,700,000-00 (Kwacha One Million, Seven Hundred Thousand Only) and the money was to come from the Ministry of Health, but was not released. The WHO and Chipata General Hospital greatly contributed to meeting the budget.

APPENDICES

FACTORS THAT CONTRIBUTE TO POOR ACCESSIBILITY TO MATERNAL CARE



SELECTED OBSTETRIC RECORDS FOR THE YEAR 1995 - CHIPATA GENERAL HOSPITAL

MONTH	TOTAL DELIVERIES	NORMAL DELIVERIES SVD	FORCEPS	L.S.C.S	ASSISTED BRECH DELIVERIES	LIVE BIRTHS	MATERNAL DEATHS	STILL BIRTHS	DEATH 1 st WEEK	TOTAL STILL BIRTH/DEATH 1 st WEEK
JAN.	205	179	5	18	3	198	0	7	3	10
FEB.	157	131	3	18	5	150	0	7	2	9
MAR.	188	150	4	28	6	176	0	12	1	13
APR.	175	155	3	9	8	169	*	6	*	6
MAY	187	166	5	8	8	176	*	11	*	11
JUN.	195	164	7	19	5	183	*	12	*	12
JUL.	223	201	3	16	3	217	*	6	*	6
AUG.	271	227	9	25	10	256	2	15	2	17
SEPT.	277	247	3	17	10	268	1	9	6	15
OCT.	202	165	2	15	20	193	2	9	6	15
NOV.	221	190	2	19	7	211	3	10	5	15
DEC.	227	200	2	17	8	213	1	14	5	19
TOTALS	2528	2175	51	209	93	2410	9	118	30	148

NB: * Denotes records missing

Source: Registers, Death Certificates and Patients' case notes.

SELECTED OBSTETRIC RECORDS FOR THE YEAR 1996 - CHIPATA GENERAL HOSPITAL

MONTH	TOTAL DELIVERIES	NORMAL DELIVERIES SYD	FORCEPS	L.S.C.S	ASSISTED BREECH DELIVERIES	LIVE BIRTHS	MATERNAL DEATHS	STILL BIRTHS	DEATH 1 st WEEK	TOTAL STILL BIRTH/DEATH 1 st WEEK
JAN.	227	191	6	25	5	218	2	9	2	11
FEB.	181	155	4	19	3	172	2	9	3	12
MAR.	181	152	4	18	7	172	0	9	3	12
APR.	209	182	4	17	6	198	0	11	2	13
MAY	197	172	7	12	6	190	1	7	3	10
JUN.	240	220	1	12	7	232	0	8	3	11
JUL.	272	237	6	13	16	257	0	15	4	19
AUG.	332	295	3	21	13	323	2	9	3	12
SEPT.	281	254	0	22	5	267	2	14	10	24
OCT.	266	229	2	23	12	247	1	19	3	22
NOV.	224	197	0	27	0	214	1	10	7	17
DEC.	226	180	3	35	8	222	2	4	0	4
TOTALS	2836	2464	40	244	88	2712	13	124	43	167

Source: Registers, Death Certificates and Patients' case notes.

SELECTED OBSTETRIC RECORDS FOR THE YEAR 1997 - CHIPATA GENERAL HOSPITAL

MONTH	TOTAL DELIVERIES	NORMAL DELIVERIES SVD	FORCEPS	L.S.C.S	ASSISTED BRECH DELIVERIES	LIVE BIRTHS	MATERNAL DEATHS	STILL BIRTHS	DEATH 1 st WEEK	TOTAL STILL BIRTH/DEAT H 1 st WEEK
JAN.	244	209	1	27	7	229	3	15	5	20
FEB.	210	181	1	22	6	199	1	11	3	14
MAR.	231	196	4	18	13	222	2	9	3	12
APR.	227	185	4	24	14	220	2	7	3	10
MAY	246	211	2	16	17	236	0	10	1	11
JUN.	237	205	2	17	13	230	1	7	1	8
JUL.	278	248	3	22	5	270	4	8	6	14
AUG.	276	251	2	19	4	267	3	9	0	9
SEPT.	369	335	3	20	11	361	0	8	7	15
OCT.	335	291	2	31	11	313	6	22	3	25
NOV.	316	292	0	17	7	303	3	13	1	14
DEC.	311	273	2	28	8	295	0	16	5	21
TOTALS	3280	2877	26	261	116	3145	25	135	38	173

Source: Registers, Death Certificates and Patients' case notes.

THE BUDGET

ITEM	QTY	UNIT COST (K)	TOTAL COST (K)
1. Stationary:			
Duplicating paper	5 reams	K10,000.00	K 50,000.00
Photocopying paper	2 reams	K15,000.00	K 30,000.00
Pens blue	20	K 200.00	K 4,000.00
Pens red	10	K 200.00	K 2,000.00
Pencil	10	K 150.00	K 1,500.00
Rubber	10	K 500.00	K 5,000.00
Tippex	3 sets	K 6,000.00	K 18,000.00
Typing ribbon	2	K12,000.00	K 24,000.00
2. Typing and Printing charges	150 pp	K1,000/pg	K 150,000.00
Diskettes	1 set	K 20,000.00	K 20,000.00
3. Computing	5 copies	K 50,000.00	K 250,000.00
4. Travel within Chipata District	100lt fuel	K1,000.00/lt	K 100,000.00
5. Lunch Allowance Driver	1 x 10 days	K 12,000.00	K 120,000.00
6. Allowance for Assistants	2 x 10 days	K 20,000.00	K 400,000.00
7. Transport to and from	4 visits	K 50,000.00	K 200,000.00
8. Subsistence Allowance in Lusaka	2 days for 4 visits	K 30,000.00	K 240,000.00
TOTAL			K 1,714,500.00

TIME - TABLE FOR THE RESEARCH

No.	ACTIVITY	TIME PERIOD
1.	Orientation of research assistants and field testing of the instruments	Jan 1998 2nd week
2.	Making correction to data collection instruments after pretesting	Jaan 1998 3rd week
3.	Data Collection - Review of obstetric records at Chipata Genera Hospital - Interview - mothers - Questionnaire - staff - Focus group discussion - TBAs	February 1998 1st - 3rd week
4.	Data analysis Travelling to and from Lusaka	4th Feb. 1998 - 2nd March
5.	Binding and submission of discussion of dissertation	April and May 1998

THE UNIVERSITY OF ZAMBIA

No:.....

SCHOOL OF MEDICINE**DEPARTMENT OF COMMUNITY MEDICINE**

TITLE: Structured interview schedule for mothers to examine their accessibility to secondary obstetric care in a rural district and the implications for safe motherhood.

INSTRUCTIONS TO RESPONDENTS:

1. All questions to be answered by encircling the number corresponding to the questions or write in the blank spaces.
2. Information given will be treated confidentially
3. No name to be written on the paper
4. Do not write in the space indicated 'For official use only'
5. To be answered by women who have at least one child and not more than four.

SECTION 'A': DEMOGRAPHIC DATAFor Official use only

1. Where do you live?.....
 (1) Village..... Chief.....
 (2) Town.....
2. How old are you?.....
 (1) 15 - 24yrs.....
 (2) 25 - 34yrs.....
 (3) 35 - 44yrs.....
 (4) 45 and above.....
 (5) Do not know.....
3. What is your marital status?.....
 (1) Married
 (2) Divorced
 (3) Widowed

- (4) Single
4. Did you have an opportunity to go to school?
- (1) Yes
- (2) No
5. If yes, what level did you attain?
- (1) Primary
- (2) Secondary
- (3) University
6. How many children do you have?
- (1) One
- (2) Two
- (3) Three
- (4) Four

SECTION 'B': ACCESSIBILITY

7. How far is your nearest Health Centre?
- (1) Less than 5 km
- (2) 5 - 10 km
- (3) 11 - 15 km
- (4) 16 - 20 km
- (5) 21 and above
8. At what age of pregnancy do you start attending Ante Natal Clinic (ANC)?
- (1) One to three months (1 - 3mths)
- (2) Four to six months (4 - 6mths)
- (3) Seven and above (7 - Above)

9. How many times have you attended ANC with your present Pregnancy?
- (1) Once
 - (2) Two times
 - (3) Three times
 - (4) Four times
10. When you attend ANC, are the following done?
- | | | |
|------------------------------|--------|-------|
| (1) Abdominal examination | 1. Yes | 2. No |
| (2) Hb examination | 1. Yes | 2. No |
| (3) RPR examination | 1. Yes | 2. No |
| (4) Tetanus Toxoid injection | 1. Yes | 2. No |
11. How far is your home from Chipata General Hospital?
- (1) Less than 5 km
 - (2) 5 - 10 km
 - (3) 11 - 15 km
 - (4) 16 - 20 km
 - (5) 21 and above
12. Is there a passable road from your home to Chipata?
- (1) Yes
 - (2) No
13. Are you able to meet the expenses of transport to the hospital?
- (1) Yes
 - (2) No

14. How much money do you pay for transport to hospital for maternity care?
- (1) Less than K1,000.00
 - (2) K1,000.00 - K3,000.00
 - (3) K4,000.00 - K6,000.00
 - (4) K7,000.00 - K9,000.00
 - (5) K10,000.00 and above
15. Do you pay for ANC?
1. Yes 2. No
- Delivery?
1. Yes 2. No
- 16.1. Ante Natal Clinic (ANC), if yes, how much do you pay?
- (1) Less than K1,000.00
 - (2) K1,000.00 - K3,000.00
 - (3) K4,000.00 - K6,000.00
 - (4) K7,000.00 ands above
- 16.2. Delivery, if yes, how much do you pay?
- (1) less than K5,000.00
 - (2) K5,000.00 - K10,000.00
 - (3) K11,000.00 - K15,000.00
 - (4) K16,000.00 - K20,000.00
 - (5) K21,000.00 and above
17. Are you involved in any income generating venture?
1. Yes 2. No
18. Of the previous pregnancies, were you ever referred to Chipata General Hospital for Maternity Care?
1. Yes 2. No

19. If yes, what was the outcome of the pregnancy referred?

- (1) Delivered a live baby
- (2) Delivered a dead baby
- (3) Had instrumental delivery
- (4) Had L.S.C.S
- (5) Mother left with a complication.

20. Have you ever lost a baby?

- 1. Yes
- 2. No

21. If yes, at what age did the baby die?

- (1) During delivery
- (2) Within the first week of delivery
- (3) Within one month
- (4) Two months and above

22. Do you mind being delivered by a male midwife?

- 1. Yes
- 2. No

23. Are there any cultural or religious beliefs that you must follow to aid labour?

- 1. Yes
- 2. No

24. If yes, what are they?

- (1) Not receiving blood
- (2) Taking herbs to aid labour
- (3) Hide that labour has started until at advanced stage

Questionnaire No:.....

THE UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
DEPARTMENT OF COMMUNITY MEDICINE

TITLE: QUESTIONNAIRE FOR STAFF ON THE ACCESSIBILITY
 OF MOTHERS TO SECONDARY OBSTETRIC CARE IN A
 RURAL DISTRICT AND THE IMPLICATION FOR SAFE
 MOTHERHOOD.

INSTRUCTIONS TO RESPONDENTS:

1. Encircle the appropriate number corresponding to the questions/fill in the blank
2. Information will be treated with confidentiality
3. Do not write your name
4. Do not write in the space indicated 'For Official use only'

SECTION A:

For Official Use Only

1. Age:..... Date of Birth:.....
2. Sex 1. Female 2. Male
3. Academic education
 1. Primary
 2. Secondary
 3. College
 4. University
4. Professional education
 1. Enrolled Midwife
 2. Registered Midwife
 3. Registered Nurse
 4. Enrolled Nurse
 5. Environmental Technician

SECTION 'B' ACCESSIBILITY

5. How much money is charged for admission to maternity ward

1. Less than K1,000.00
2. K1,000.00 - K5,000.00
3. K6,000.00 - K10,000.00
4. K11,000.00 - K15,000.00
5. K16,000.00 and above
6. N/A (Non applicable)

6. How much money is charged for a normal delivery

1. Less than K1,000.00
2. K1,000.00 - K5,000.00
3. K6,000.00 - K10,000.00
4. K11,000.00 - K15,000.00
5. K16,000.00 and above
6. N/A (Non applicable)

7. Is there a separate charge for a Caesarean Section?

1. Yes
2. No

8. If yes, how much? K.....

9. How many Midwives work in your maternity ward per shift?

1. No Midwives
2. 1 - 2
3. 3 - 4
4. 5 - 6
5. 6 and above

- Scale: Always available ++ Sometimes Available +
Not available 0

Oxygen:.....

11. What are your critical material resource problems?

1. Supplies
2. Antiseptic
3. Linen
4. Equipment
5. Water

12. Do women who are referred come to you in good time?

1. Yes
2. No

13. If not, what do they say is their problem?

1. Transport
2. Money
3. Long Distances
4. Waiting at home
5. Ignorant of time to come

14. Is there communication between the hospital and Rural Health Centres?
1. Yes 2. No
15. If yes, what kind of communication?
1. Radio
2. Telephone
3. Ambulance Service
16. Is there an Ambulance available for women who need to come to hospital?
1. Yes 2. No
17. Are there any traditional or religious beliefs that make maternity care difficult?
1. Yes 2. No
18. If yes, what are they?
1. Use of herbs
2. Refusing blood
3. Refusing to be attended to by male workers
4. Hiding labour
19. What would you recommend for women coming to your hospital to make motherhood safe
1. Avoid use of herbs
2. Midwives to be available at primary level
3. Improve communication
4. Availability of transport when needed
5. Emergency team and supplies to be readily available at the hospital



in reply please

Quote

No

REPUBLIC OF ZAMBIA

MINISTRY OF HEALTH

CHIPATA DISTRICT
PO BOX 511205
CHIPATA

29th January, 1998

Ms A.A. Zulu,
Chipata School of Nursing,
P.O. Box 510119,
CHIPATA

Dear Madam,

RE: RESEARCH PROTOCOL

In conformity with your letter dated 6th October, 1997, I should inform you that your request has been granted. The District will support you in all ways possible in the limitation of your programmes.

For further clarification or/and addition of information please you should not hesitate to contact the Acting Manager Administration. We wish you good luck in your personal endeavours.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Muchayashi Shimbi'.

Muchayashi Shimbi B.L.F.
A/G Manager Administration
for/ACTING DISTRICT DIRECTOR OF HEALTH

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ZAMBIA - CHIPATA DISTRICT

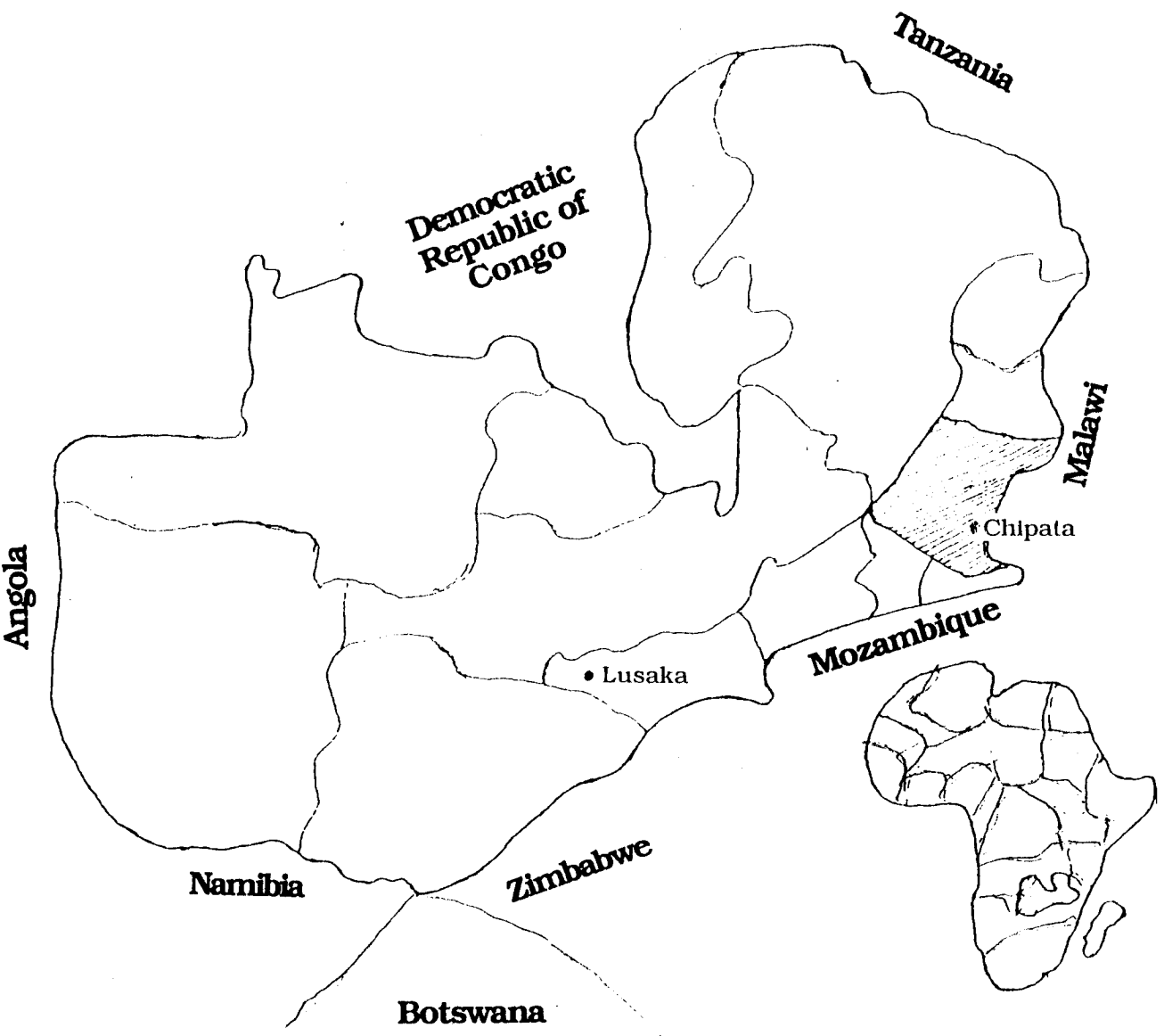


FIG. 11: GEOGRAPHICAL LOCATION OF CHIPATA DISTRICT