REPORT ON OBSTETRIC FISTULA SITUATION ANALYSIS IN ZAMBIA

SUBMMITTED TO UNFPA AND CENTRAL BOARD OF HEALTH

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NOVEMBER 2003

ABBREVIATIONS

ANC	Antenatal care
CBOH	Central Board Of Health
HIV	Human Immunodeficiency Virus
NGO	Non Governmental Organisation
OT	Operating Theatre
PMMZ	Prevention of Maternal Mortality Zambia
RVF	Recto Vaginal Fistula
TBA	Traditional Birth Attendant
UN	United Nations
UTH	University Teaching Hospital
VVF	Vesico Vaginal Fistula
W.H.O.	World Health Organisation
ZDHS	Zambia Demographic Health Survey
ZIHP	Zambia Integrated Health Programme

ACKNOWLEDGEMENTS

Many thanks to the following professionals who helped us by encouraging, constructive criticism and giving guidance.

Dr. C. Kaseba, OBGY-UTH who ensured that quality patient care was maintained by combining my work with her own busy schedule.

Dr. Girma Alemayehu, CBoH/UNFPA for stirring the enthusiasm in us to take prevention and treatment of obstetric fistula on the National agenda, and to regard the health of these unfortunate girls and women as a priority.

Ms. Margaret O'Callaghan the UNFPA Representative for her support and towards making the research a success.

Dr. S. B Malumo for her constructive criticism and giving guidance.

We would also like to thank the hospital management teams who willingly permitted us to collect information at short notice. We thank the doctors, nurses in the Hospitals and the community for their willingness to participate in focus group discussions.

And indeed without the financial support from **UNFPA** this survey would not have been conducted.

The Authors

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EXECUTIVE SUMMARY

Background

The scenario of reproductive health in Zambia is characterized by the fact that 83% of rural population and 56% of urban population live in poverty. This situation has been compounded by the advent of HIV/AIDS, which has lowered life expectancy from 55 years in the early 1980s to 37CSOin 1998. 16% of all Zambians age 15-49 years are HIV-positive.

The health situation for women has not improved either during this period. This is underlined by the increase in maternal mortality rate over the last decade. According to the recent ZDHS, for every 100 000 live births, 729 women died from maternal related causes as compared to 649 in 1996.
32% of teenage women aged between 15-19 are pregnant with, or have already given birth to their first child. This is very worrying as young mothers, especially those under 18, are more likely to suffer from pregnancy and delivery complication than older mothers.

UNFPA is providing support to countries as part of a global programme to draw attention to the prevalence and social and physical implications of fistula and its causes. UNFPA supported this study in order to document for the first time as far as possible what the prevalence of VVF is and provide sufficient information to guide government in improving prevention and treatment of the problem.

Objectives

1. Determine the magnitude of obstetric fistula in Zambia
2. Determine the capacity of Health institutions to manage and prevent fistula
3. Explore communities perception and knowledge of obstetric fistula
4. Evaluate health workers' knowledge of obstetric fistula and its management in gynecology and obstetric wards
5. Make recommendations to stakeholders

Method

This was a cross sectional study. All 9 provincial, 2 Central hospitals, One University Teaching hospital, 3 Mission hospitals per province and 2 district hospitals per province operating under the Central Board of Health (CBoH). Thirty-eight hospitals were visited (45%).
Data was collected using structured questionnaires and having focus group discussions.

Results

Thirty-eight hospitals (provincial and district) were surveyed in all nine provinces of Zambia. Twenty-three hospitals had some records of VVF/RVF cases. Others had no documentation though claimed that the fistula cases were many, who are just sent home like in Kasempa District.
There were only four hospitals performing obstetric fistula repair on a regular basis. These being Katete (St Francis Mission Hospital) which repairs about 56 cases/year,

Monze (Monze Mission Hospital) 75 cases/year, Chilonga (Chilonga Mission Hospital) 16 cases/year and UTH doing about 28 cases/year. In UTH the urologist repairs almost 10 case per year, the gynecologist have given up due to low success rate of 50% and non availability of consumables.

The rest of the surveyed hospitals have no capacity to carry out these specialized operations.

Focus group discussions revealed that there are many fistula cases in most communities, which have either been sent back because of failed repair or not reported to hospital. Some of the communities knew of some cases of fistula in their villages and did not know where to seek help.

Conclusion

There are many more cases of obstetric fistula in the community than those passing through hospitals. Some patients are lost to follow ups because of the referring from one hospital to another at their own expense. There is need to train more gynecologists to repair and concentrate these skills in 3 hospitals. There is need to sensitize the communities on prevention and availability of treatment. It is important to remember that obstetric fistula is another measure of obstetric performance and that its prevalence should be recorded and monitored at the national level.

Difficulties, Constraints and Limitations of the Data

There were difficulties in collection of data as some records were not available. It was not possible to cover all hospitals in Zambia in time available. It was rather difficult in some communities to gain their confidence before they could give the teams the information on fistula.

The actual numbers of fistula cases was obtained mainly from hospital data. The hospital data is not complete or in other cases did not exist. In the presence of a 47% facility delivery with skilled attendant means that there is really no information on the 53% deliveries taking place in homes or en route to a facility. Consequently one can extrapolate that the number of cases is at least double that recorded at health facilities.

Background:

GLOBAL CONTEXT

Fistulas are most common in impoverished countries of Africa and Asia where maternal health services are still lagging behind. Persistent obstetric fistula is an indication of lack of access to emergency obstetric care.

Fistula was once widespread in Europe and the Americas, but the condition has since been eradicated by improvements in health care and older age of marriage. Because of this success story in developed and other developing nations, it is clearly evident that workable solutions can be found even in resource-constrained settings.

The World Health Organization (WHO) estimates that at least two million girls and women currently live with fistula and that an additional 50 000 to 100 000 are affected each year.

ZAMBIA

According to Zambia's Demographic and Health Survey (DHS) of 2001-2002, a Zambian woman at the beginning of her childbearing years will produce on average 5.9 children by the end of her reproductive life. This figure indicates a consistent decline from 6.5 and 6.1 children in 1992 and 1996 respectively but still remains one of the highest in Sub-Sahara Africa. The data also suggests that the drop in urban fertility mainly explains the overall decline in national fertility.

There is a significant disparity in the demographic and health characteristics between rural and urban populations. It has been observed that a rural woman is likely to have at least two children more than her urban sister.

It is encouraging to note an increasing trend in family planning use in Zambia over the past decade, from 15% in 1992 to over 34% in 2001-2002 (ZDHS 2001-2002). There are still however regional and educational disparities in family planning usage. Urban women are much more likely to be using a family planning method than rural women. The survey showed that 46% of urban women compared to 28% of those in the rural areas use a family planning method. A woman with secondary level education is almost twice as likely to use a family planning method than an uneducated woman. This coupled with the high incidence of teenage pregnancies in Zambia, family planning programs need to focus more attention on less educated men and women and adolescents.

Medical care is crucial both during pregnancy and during the time of delivery in order to minimize the risk of complications and mortality for both the mother and her baby. It is gratifying to note that nine out of ten women receive antenatal care (ANC) from a health professional at least once during her pregnancy, although mostly late in the pregnancy. The DHS showed that 72% of these women had four or more antenatal care visits during their pregnancy. Rural or urban residence seemed to have little impact on ANC coverage but education is strongly associated with ANC attendance: the higher the education level of the women, the higher the antenatal attendance. Despite such an impressive antenatal coverage, skilled health workers supervised only 47% of deliveries.

The scenario of reproductive health in Zambia is characterized by the fact that 83% of rural population and 56% of urban population live in poverty. This situation has been compounded by the advent of HIV/AIDS, which has lowered life expectancy from 55 years in the early 1980s to 37CSOin 1998. 16% of all Zambians age 15-49 years are HIV-positive. It is sad to note that the Human Development Index score for Zambia has declined over the years from 1975 to 1998, largely due to the above factors. The health situation for women has not improved either during this period. This is underlined by the increase in maternal mortality rate over the last decade. According to the recent ZDHS, for every 100 000 live births, 729 women died from maternal related causes as compared to 649 in 1996.

Early marriages and teenage pregnancies are still very high, especially in rural areas where access to education favors the male child. 32% of teenage women aged between 15-19 are pregnant with, or have already given birth to their first child. This is very worrying as young mothers, especially those under 18, are more likely to suffer from pregnancy and delivery complication than older mothers. The lives and health of both the young mothers and their children is often jeopardized. Additionally, early childbearing limits the prospects of the young woman's ability to pursue educational opportunities, which is turn, tend to improve income and health status.

Definition and causes of fistula

Fistula refers to an abnormal (false) communication between two body cavities. Vesico Vaginal fistula (VVF) and Recto Vaginal fistula (RVF) are the commonest obstetric fistulas. The former occurs between the vagina and the urethra and the latter between the vagina and the rectum.

Obstetric fistula is a result of injury to the pelvic tissue caused by prolonged and unrelieved obstructed labour that may last several hours or days. During this time the presenting fetal (baby's) head remains pressed against vaginal and bladder/rectum wall tissue for a prolonged period of time, causing ischemic necrosis of the affected area. This dead tissue subsequently sloughs off, leaving a hole between the vagina and the bladder and/or the rectum. This causes total incontinence of urine and/or faeces.

Obstructed labour commonly occurs when the baby is too big and will not pass through the birth canal or the mother's pelvis is too small.
If not treated by cesarean section, obstructed labour can result in death of the baby and the mother or an obstetric fistula for the woman who survives. Most women with obstetric fistulas deliver stillborn babies. Obstetric fistulas can also follow hysterectomy after uterine rupture or a complicated cesarean section. Very rarely a fistula can follow instrumental delivery using forceps.

Obstetric fistula is a devastating but preventable condition that primarily affects the young, poor and commonly uneducated women in low resource settings. These young women lack the means to access emergency obstetric care.

Characteristics of fistula patients

Women living with fistulas are constantly wet with leaking urine and often develop genital sores, infections and an offensive odor. A few women also develop unilateral or bilateral foot drop that limit their routine activity because spinal nerve damage. These women live a life of misery and are often abandoned by their partners, families

and the communities they live in because they are considered unclean. They often live in isolation and often become depressed and may suffer a premature death.

Underlying factors

Poverty is the underlying cause of obstetric fistula. Relative poor health, insufficient nutrition (and probably repeated infections), stunted growth, limited access to maternal health care and the culture of early marriage and pregnancy all predispose to the risk of obstructed labour.

In Zambia, early marriages are a common practice particularly in rural areas. Child bearing begins early by the age of 18 almost half of the women aged 45-49 have had their fist births (DHS 2000). The economic decline since 1980 has been dramatic resulting in widespread general malnutrition. Chronic malnutrition may result in pelvic bone deformities. With the pelvic bones not yet well developed a teenage woman is more likely to experience obstructed labour. Besides this, the young woman is herself 'a baby' with very delicate tissues in the birth canal.

When obstructed labour occurs in remote areas, the decision to seek help is usually made by the husbands, mothers-in-law or grandmothers who often procrastinate for traditional reasons in making the decision. When a decision is finally made, transport is often a critical issue. Usually, the only available means are to walk a long distance or use a wheelbarrow or ox-drawn cart, or bicycles adapted to transport ailing people. The nearest health facility often has to refer on to a higher-level facility where facilities for a caesarean delivery exist but usually the transport means is still lacking. Ambulances are rarely available. If the woman is fortunate to reach the higher-level health facility, another delay is inevitable because of shortage of staffing, equipment, and surgical supplies, making the three obstetric delays complete, i.e. delayed labour, delayed transport, and delayed access to obstetric emergency care.

There are attempts by the government, several UN agencies and Non Governmental Organizations (NGOs) to organize Emergency Obstetric Care services, however the economic hardships coupled with critical shortage of manpower because of brain drain to countries in the Sub region and else where has made these attempts difficult and slow. These conditions facilitate obstetric fistula.

Once affected many fistula patients do not get to hospitals to obtain help. Many are sent back home, as fistula repair surgery cannot be undertaken in most of the district hospitals. A few lucky ones are referred to a distant regional or tertiary hospital with only a referral letter and little concern of how the patient is going to get to the referred facility.

Because of the failure to raise money for a bus fare, which was the primary reasons for the failure to get to a health facility for delivery in the first place, the patient sits back at home to continue a miserable life of dribbling urine, and /or stool and in pain.

Obstetric fistula represents a critically important but largely neglected issue in the field of reproductive health. Unfortunately no specific records of the number of cases are kept and it is believed that many such cases go unreported, since about 50% of women deliver outside health facilities. Consequently, it is difficult to know the caseload in the country. Because of the severity of its impact on women's health and well-being and the number of early pregnancies it was noted that obstetric fistula

deserves more attention as a countrywide problem and this is why this baseline survey has been carried out, to gain some idea of the extent and the nature of the problem.

METHODOLOGY

Two teams each led by a Consultant Obstetrician and Gyneacologist from the University Teaching Hospital (UTH) conducted the situation analysis concurrently. The consultants were each partnered with an assistant with Midwifery or Theatre Nursing training.

The assessment took place between November 12- 24, 2003 in all the 9 provinces. Team I undertook a series of site visits to health facilities in Lusaka, Eastern, Western and Southern Provinces while Team II visited facilities in Central, Copperbelt, Northwestern, Luapula and Northern Provinces.

The teams visited:
9 Provincial Hospitals
2 Central Hospitals
1 University Teaching hospital
3 Mission Hospitals in each province (17 in total)
2 District Hospitals in each province

Administrative and Clinical staff that included Doctors, Nurses and Midwives, were interviewed and appropriate questionnaire was administered.

Facilities in labour wards, operating theatres and the obstetric and gyneacological wards were inspected against a checklist. Wherever feasible, theatre logbooks were reviewed.

Whenever possible, in patients with fistula were interviewed. Focus Group Discussions (FGDs) were conducted with patients and their relatives found in waiting homes and other common groupings. Pregnant women from remote rural areas are encouraged to come and reside near the hospital, in waiting homes, as their pregnancies approach term. Their mothers, grand mothers and other relatives sometimes accompany the women to the facilities, these provided useful audience for Focus Group Discussions. In Luwingu, a FGD was conducted with women selling in the market. The market is situated next to the hospital and so women who accompany relatives to the waiting home usually bring with them merchandise such as maize, cassava meal, beans etc to sell at the market in order to sustain their stay as they await their relatives in hospital. Men also participated in the discussion in some groups.

A simple survey instrument was used for the interviews and is attached as appendix B in addition a FDG guide was used.

The quantitative data was analysed using Epi Info 6 and for the qualitative data was summarized using Microsoft Word.

FINDINGS

TABLE 1: AVAILABILITY OF MATERNAL SERVICES AT THE HOSPITALS VISITED (N=38)

Description of service	Availability of service		Total
	Yes	No	
Antenatal care	38 (100%)	00	38 (100%)
Family planning	12 (32%)	26 (68%)	38 (100%)
Cervical cancer screening	4 (11%)	34 (89%)	38 (100%)
Post abortion care	8 (21%)	30 (79%)	38 (100%)
Permanent contraception	9 (24%)	29 (66%)	38 (100%)
Treatment of STI	11 (29%)	27 (71%)	38 (100%)
Youth friendly service	5 (13%)	33 (87%)	38 (100%)
Caesarean section	20 (53%)	18 (47%)	38 (100%)

All hospitals visited were able to provide two major aspects of maternal care namely Antenatal care and caesarean section (53%). Family planning (32%) and treatment of Sexually Transmitted Infections (STI) (29%) were provided by some hospitals. Other services that were least provided were, Permanent contraception (24%), Post abortion care (21%) and Youth friendly service (13%) at the health institution that were visited.

The above maternal services are meant to identify problems during pregnancy and help in reducing the incidence of maternal complications including obstetric fistula.

Three hospitals have no doctors Serenje, Zimba, Chilubula. There were 75 doctors recorded as working in obstetrics and gynecology departments, of these only 16 (21.3 %) are obstetricians and gynecologists and 75% of these specialist are in central and University Teaching Hospitals. Twelve of the hospitals do not have anesthetists and 15 hospitals do not have physiotherapists.

TABLE 2: AVAILABILITY OF THEATRE FACILITIES AND CONSUMABLES AT THE HOSPITALS VISITED (N = 38)

Functional O.T		Anesthetic machine		Availability of consumables		
Yes	No	Yes	No	Nil	Erratic	Adequate
34 (89%)	4 (11%)	28 (74%)	10 (26%)	1 (3%)	20 (53%)	17 (44%)
38 (100%)		38 (100%)		38 (100%)		

Majority of the hospitals had a functional theatre (89%) as compared to those without (11%). Anesthetic machines were available in most hospitals (74%) and only 26% did not have any.

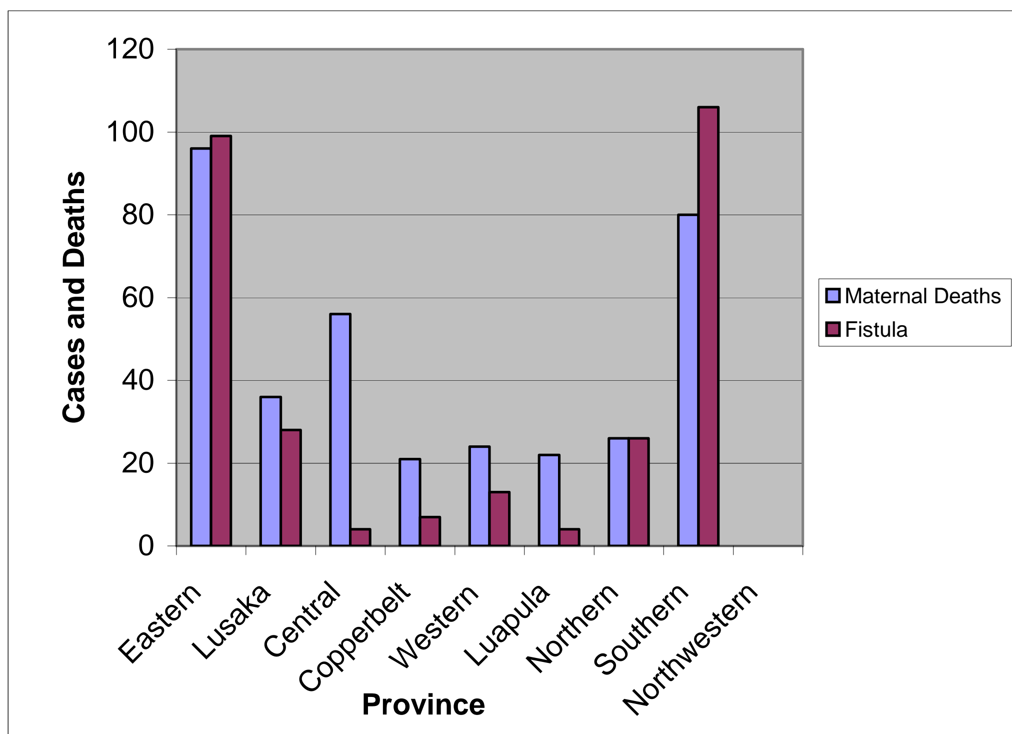
Availability of consumables was erratic (53%) or adequate (44%) for the majority of hospitals toured. Those that did not perform caesarean section sent their patients to the nearest hospital using an ambulance.

TABLE 3: THEATRE EQUIPMENT FOR GYNAECOLOGICAL AND OBSTETRIC SURGERY (N=38)

C/S sets			Hysterectomy		
0	1	2+	Nil	1	2+
7 (18%)	20 (53%)	11 (29%)	1 (3%)	20 (53%)	17 (44%)
38 (100%)			38 (100%)		

Most hospitals had at least 1 (one) caesarean set (53%) and a few had 2 (two) sets (29%). Most hospitals had at least 1 (one), Hysterectomy set (53%) or 2 (two) hysterectomy sets (44%). The above sets of equipment are basic and should be found at any hospital in order to respond to obstetric emergencies.
Some hospitals like Serenje, Zimba, and Chilubula despite not having a functional OT had theatre equipment like the hysterectomy sets

FIGURE 1 - MATERNAL DEATH VS FISTULA CASES BY PROVINCE 2002



Source: Hospital records.

North Western province did not have any records on maternal deaths, though it is reported to have many fistula cases.

The provinces with active fistula centers are the ones with high fistula cases. Maternal deaths are highest in Southern and Eastern provinces. This data excludes community data.

KNOWLEDGE AND PRACTICES OF HEALTH WORKERS WORKING ON MATERNITY WARDS (N=38 doctors & 38 nurses)

TABLE 4: COMPLICATIONS OF OBSTRUCTED LABOUR AS RANKED BY RESPONDENTS

Complication	Score nurses	Score doctors	Total (%)
Ruptured uterus	19	38	57(75%)
VVF/RVF	17	24	41(54%)
Sepsis	10	36	46(60.5)
Death	06	18	24(31.5%)

There were multiple responses from some respondents. Health workers working on maternity wards cited the complications of obstructed labour as ruptured uterus (75%), VVF/RVF (54%), Sepsis (60.5%) and Death (31.6%). The frequency of the responses differed between the nurses and the doctors.

TABLE 5: HEALTH WORKERS KNOWLEDGE OF TREATMENT OF A WOMAN WITH OBSTRUCTED LABOUR

Plan of action	Score (nurse 38)	Score (doctors 38)	Total (%)
Intravenous fluids, antibiotics, C/S and catheter	16	38	54(71%)
C/S plus 7 days of catheter	14	38	52(64%)
Syntocinon	5	6	11(14.5%)
Vacuum delivery	2	1	3(3.9%)
Refer patient	2	4	6(7.9%)

Health workers working on maternity wards stated that a woman with obstructed labour should be treated with intravenous fluids, antibiotics, caesarean section and catheterisation (71%) and caesarean section and 7 days of catheterisation (64%), use of Syntocinon in obstructed labour is not common (14.5%), vacuum extraction of the baby was 3 (3.9%) and referred to another institution 6 (7.9%).

Six doctors said they would use oxytocin on obstructed labour patients. The other 4 doctors preferred to refer their patients to other hospitals.

TABLE 6: RESPONDENT'S KNOWLEDGE ON PREVENTION OF OBSTETRIC FISTULA (N=76 doctors &nurses)

Preventive measure	Score nurses			Score doctors		
	Yes	No	Not sure	Yes	No	Not sure
Use of partogram	8	25	5	38	0	0
Timely Caesarean section	18	15	5	38	0	0
Prolonged catheterisation	5	28	5	11	3	24
Presence of trained attendant during delivery	7	26	5	34	4	0

The majority of health workers working on maternity wards indicated that prevention of VVF/RVF is best done through timely caesarean section 56 (73.7%). Health workers working on maternity wards did not think prolonged catheterisation 31 (41%), presence of trained attendant during delivery 30 (39.5%) and use of partogram 25 (32.9%) as being important in the prevention of VVF/RVF. Most of the doctors sited all these measures as preventive procedures.

TABLE 7: HEALTH WORKERS PERCEPTION OF COMMUNITY ATTENDANCE FOR ANTENATAL CARE (N = 38 doctors & 38 nurses)

Community attitude	Total
Good	60 (79%)
Not good	16 (21%)
Total	76 (100%)

Health workers generally considered community's antenatal care attendance as good (79%). (Although this does not necessary mean effective adequate services and treatment e.g. Hb, VCT Folic Acid, Antimalarials, RPR, Tetanus)

KNOWLEDGE AND PRACTICES OF NURSES AND DOCTORS WORKING ON GYNAECOLOGY WARDS (N = 21 NURSES 8 DOCTORS)

TABLE 8: COMMON SUTURE MATERIALS USED IN HOSPITALS

Name of suture material	Score	
	Nurses	Doctors
Chromic catgut	7	2
Silk	7	0
Vicryl	4	2
Nylon	2	0
Anything available	1	4

Nurses working on gynecology wards or female wards indicated that in most VVF/RVF repairs they have seen, they rated chromic catgut (7) and silk (7) as being

the commonly used suture materials. Four nurses stated that Vicryl (Polyglactin 910) was used.

However the doctors repairing fistulas has various preference of the suture material, vicryl or chronic catgut are commonly used. The general doctors did not know what sutures to use, as they were not repairing any fistulas. Four other doctors said they had used anything that was available

TABLE 9: REASONS FOR NOT REPAIRING VVF/RVF N = 76 DOCTORS/NURSES

Reason	Score Nurses	Doctors	Total %
No skilled doctor	22	34	56 (74%)
No facilities	9	22	31 (41%)
Lack of consumables	4	27	31 (41%)
Disappointing results	3	2	5 (6.6%)
No profit making	1	0	1 (1.3%)

Health workers in obstetrics and gynecology indicated that VVF/RVF were not being repaired because there is no skilled doctor (74%), no facilities (41%) and lack of consumables (41%). Some doctors did not perform repairs because of lack of skill since they have not been trained.

Two specialists did not repair fistula because of low success rates of 50% (they believe the first attempt is most crucial) and the other reason was non-availability of consumables.

TABLE 10: ACTION TAKEN BY STAFF FOR FAILED REPAIRS AT MONZE, UTH, CHILONGA and KATETE (N = 8)

Action	Score
Refer to UTH gynecologists	7
Refer to urologists	1
Rehabilitation, physiotherapy then Home	3

Most nurses stated that failed repairs are referred to UTH gynecologists (7) while others are referred for rehabilitation and physiotherapy before being sent home (3). At UTH failed repair cases are referred to the urologists who repairs about 10 cases per year. The doctors stated that some patients neither return for further surgery nor reach the referred hospital.

TABLE 11: KNOWLEDGE ON POST OPERATIVE CARE OF PATIENT AFTER REPAIR N = 38 (34 midwives 4 nurses)

Aspect of care	Score	Percent
Watch for catheter blockage	16	42.1
Antibiotics when indicated	9	26.7
Encourage oral fluids	8	21.1
Immobilize	7	18.4
Do not know	18	47.4

For postoperative care following repair, most nurses indicated that they would watch for catheter blockage (42%), administer antibiotics when indicated (26%), encourage oral fluid intake (21%) and immobilize the patient. Twenty nurses responded that they had nursed a VVF patient after repair before, while 18 nurses had never seen or nursed a repaired case.

FIGURE 2: A FISTULA PATIENT WITH A CATHETER

A bright face and a smile as there is hope of returning to normal life after the fistula repair she is waiting to undergo. A possible near miss maternal death.

TABLE 12: KNOWLEDGE ON NURSING ACTION FOR A BLOCKED CATHETER (N = 38)

Action	Score	Percent
Call the doctor	16	42.1
Remove catheter	14	36.8
Flash catheter	10	26.8
Supra-pubic puncture	0	0

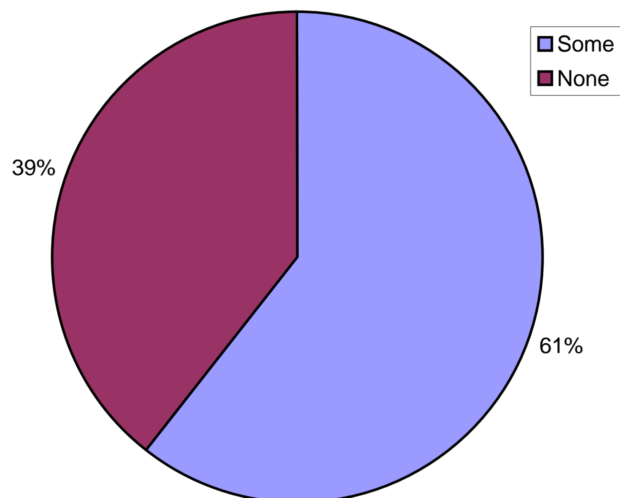
For blocked catheter postoperatively care following repair, most nurses stated that they would call the doctor (42.1%), remove catheter (36.8%) or flash the catheter (26.3%) in order to overcome the blockage. None had ever seen suprapubic puncture done for blocked catheter after fistula repair.

TABLE 13: RESPONSE OF HEALTH WORKERS ON NEED OF TRAINING (N = 76)

Response	Nurses	Doctors	Total (%)
Yes	38	32	70 (92%)
No	0	6	6 (7.9%)

All nurses interviewed said they needed training to look after fistula case. Six doctors did not want any training in fistula management. Three of them had already received training and the other three were not interested in fistula work.

FIGURE 3: AVAILABILITY OF GUIDELINES/EDUCATION AL MATERIAL ON COMPLICATED PREGNANCY IN HEALTH FACILITIES (N=38)



There were 23 (61%) hospitals that had some guideline on management of complicated pregnancy while 15 (39%) hospitals had none.

HOSPITALS PERFORMING FISTULA REPAIRS

Lusaka - University Teaching Hospital

This is a teaching hospital and is a tertiary referral center for the whole country. It has eleven obstetricians and gynecologist. None of them have had any formal training in fistula repair. However one of them repairs fistulas while two others who have interest have given up due to low success rates despite their enthusiasm. Cases with extensively damaged genito urinary system are referred to the urologist for bladder reconstruction or ureteric implantation into the colon. Some cases are referred to Monze whenever there is a Fistula repair workshop there.

Strengths for fistula repair center because:

- The specialists have interest in fistula repair
- It is centrally located for the whole country and receives referred cases from the whole country
- All other disciplines involved in fistula repair and counseling are available i.e., physiotherapy, social worker etc
- Being a training institution interest and skills for fistula management can be developed in trainee nurses and doctors.

Constraints

- It is profoundly inadequately funded thus limited funds for fistula work.
- There is no financial support from the referring hospitals
- Updating skills on the management of fistula for all health workers involved is lacking.
- The hospital has many other surgical priorities

Katete - St. Francis Hospital

This is a Mission hospital in the Eastern Province of Zambia and its run by the Anglican and Catholic Churches. There is one Zambian Obstetrician and Gynecologists, in the whole province that is operating at this hospital. He has been repairing obstetric fistulas since 1996. He repairs 50 – 60 cases each year with a success rate of 60-70%. He has had no formal training in these repairs but has leant the skills on the job. He sometimes refers some cases to UTH. There is a potential for St Francis Hospital to be upgraded to operate as a fistula center for Eastern Province. Katete is also a center for training postgraduate students from the university of Zambia, School of Medicine.

Constraints

- Funding lies heavily on well wishers and a small government grant
- There is high workload for this single specialist
- There is still need for training to further improve on success rates

Monze – Monze Mission Hospital

This hospital is located in the Southern Province of Zambia, and is run by Catholic Church. There is one obstetrician and gynecologists from Ireland who has been trained in fistula repair. The hospital holds fistula repair workshops twice a year. They see 70 – 75 cases a year. These patients come from the rest of the provinces. A visiting doctor from U.K carries out the workshops. The gynecologist obtains some funds from his friends in Ireland. However this does not ease the burden on the hospital budget.

There is a potential for Monze to be upgraded to operate as a fistula center for Southern and Western provinces. Postgraduate students have been spending 3 months in the hospital to experience a rural setting. Nurses have become acquainted with postoperative care and socially the hospital and small town environment is conducive to women from rural areas.

Constraints

- Workshops have increased the burden on hospital funds i.e. staffing, cost of operations and sometimes transportation
- This expatriate specialist may leave and therefore the special source of funds would cease, stretching the hospital budget
    - Breaking continuity of the service.
- There is high workload for this single specialist
- Access problems by patients located in other distant provinces like North Western province.

Chilonga Mission Hospital

The Catholic Church runs this hospital, which is located in the Northern province of Zambia. There are no Obstetric and Gynecologist specialist, but there is one general doctor who has had some informal training of repairing fistulas in Nigeria. The cases seen are from Northern and Luapula provinces. The success rate of the fistulas repaired is unknown. Failed repair cases are referred to UTH or Monze directly.

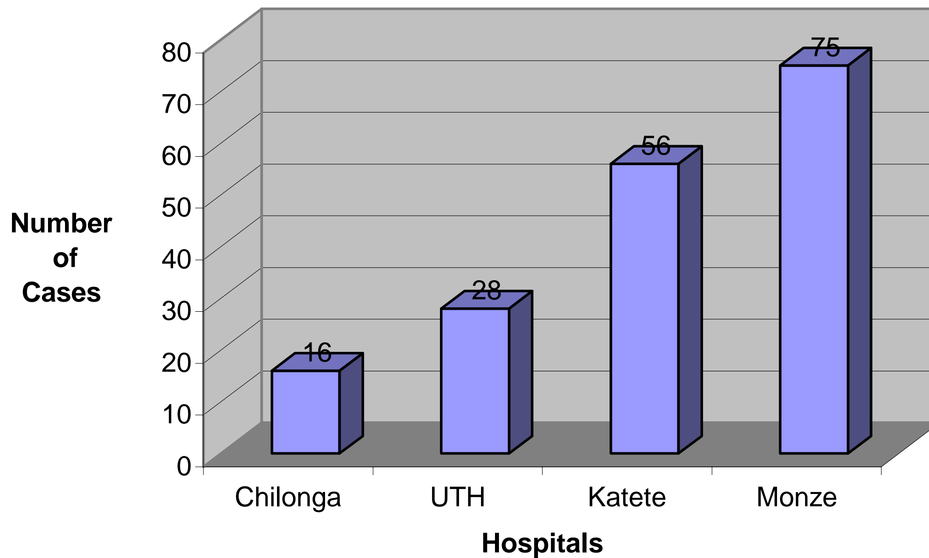
Constraints

- Limited funding
- High workload
- Lack of formal training of health workers

Figure 4: Four grateful and happy women on their way home to Northern Province after being successfully repaired, Zambia

Patients that are cured of their fistula problem usually require financial assistant to enable them travel back to their homes. This is quite expensive, as most hospitals do not include cost for transporting cured patients in their action plans. They would not even have the money to allocate to such an activity. Monze hospital is able to provide its patient with transport money.

FIGURE 5: OBSTETRIC FISTULAS SEEN AND REPAIRED IN FOUR HOSPITALS IN ZAMBIA (2002)



Monze had repaired the highest number of fistula cases in 2002. Katete, had repaired 56 cases and UTH had repaired 28 cases followed this. Monze is able to offer financial assistance to the patients as they have an external source of funds for fistula operations. This could be the reason for the regular operations.

Focus group discussions (FGDs)

A minimum of two FGDs, with 4-10 participants or more for some hospitals were conducted at each provincial hospital. Discussions were also held with patients in gynae wards, in maternal and child health clinics and their relatives found in waiting homes. A FGD was conducted in the market place with women marketers in Luwingu. The team took advantage of the close proximity of the market to the hospital knowing that some of the women selling various merchandise in the market, had come from distant villages to escort sick or expectant women to the hospital.

Has there been any difficulty at delivery in some women in your village?
Some participants admitted having had difficult deliveries in their previous pregnancies. Others admitted having seen other women and relatives go through 'problematic' labour when attempting to deliver at home. This was the reason they cited for coming to live in the waiting home as the pregnancy approached term.

When asked about their knowledge of what are some of the things that can go wrong when a woman gives birth?
One woman said *"There is little we can do when the baby is not lying properly in mothers abdomen".*
"*Some women bleed a lot after giving birth and the baby's cord may remain in the woman's abdomen for a long time"*. Said another.

"Most women end up dying," Said a middle-aged woman nursing her premature baby in the hospital nursery.

"Damage to organs", as an elderly lady put it *"Since even the external genitalia can have tears, even the inside may have them"*

Most of them stated that a woman might run out of strength to push the baby out during delivery because of fatigue, pain and hunger during prolonged labour.

Asked what causes or contributes to formation of Vesical Vaginal Fistula.
Some participants recognized incontinence of urine as one of the complications of labour. A few others however were not aware of this condition and requested to be told what these complications were.

One participant mentioned that parental influence to have their daughters deliver at home is very strong as this is viewed as a sign of strength for the woman.

Lack of access to health facility and Antenatal care was another reason cited for complications associated with home delivery.

Participants informed the interviewers that traditional beliefs and practices contribute to VVF. An example sited was where a primi-gravida is reassured that she would not have any problem during labour if traditional herbs were administered to relax the pelvic muscles and increase the outlet. This was found to be a common practice in most provinces of Zambia.

Participants said the use of traditional herbs, (which may have a similar effect as Oxytocin), in order to increase the strength of contractions when there was a delay in labour, was a common practice among most tribes of Zambia. *"These herbs can cause so much pain that a woman can even die"*. One participant said.

Participants pointed out that early marriages resulted in young mothers being seen at Antenatal Clinic. It is believed that there is a hidden economic gain in marrying off a daughter as the son in-law is required to do some work for them on their land.

Most elderly women observed that, "*the young woman may not have fully developed into a woman for her to be able to have a child because they still have a structure of a male"*.

Participants observed that there is lack of maternal effort in labour because the woman is too young to understand what goes on in labour.
One elderly woman said.

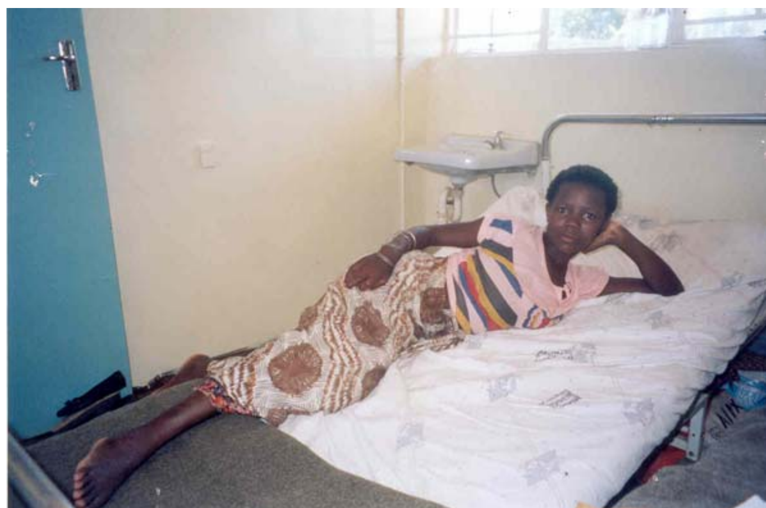
" *Childbirth can be impossible if the woman's husband has been promiscuous during the wife's pregnancy*".

Traditional beliefs, known as "Incila", in which difficult labour is associated with the husband's dishonest conduct is rife among the Bemba-speaking people of Northern and Luapula provinces. The result is that certain traditional practices have to be undertaken to resolve this problem, thereby causing serious and life threatening delays to referring the mother for professional help

Another participant attributed difficult childbirth to witchcraft and said, "Some people in the villages, out of jealousy, may cross their fingers so that the woman fails to deliver normally".

Lack of skilled attendance during delivery e.g. trained TBA especially in remote places was another reason cited for complicated delivery.

Figure 6: A young girl waiting for fistula repair in a hospital ward.



These girls are regarded as social outcasts and they are rejected. They are usually unsure of their fate and future. They are the silent sufferers.

Asked what people in the communities do to women who have developed incontinence of urine following labour (VVF/RVF)

Some participants said, *"Nothing is done but to accept what has happened because life is full of blessings and curses"*. It appeared none of these women had seen or heard about anyone undergoing a successful VVF repair.

Others said they would encourage the patient to seek medical help from the hospital, although the woman may be scared of reporting the obstetric complication if she delivered at home for fear of being scorned by the clinic/hospital staff.

It was revealed during the discussions that in some villages in Luapula and Northwestern provinces, some traditional medicine is administered to cure urine incontinence that results from difficult childbirth.

An elderly woman reiterated that, *"The husband is responsible for his wife's misfortune and so should look after her"*. This appeared to be a common belief in Western and Southern provinces.

Asked what should be done to prevent difficulty childbirths that commonly result in urine incontinence (VVF/RVF) in young women,
Participants unanimously said, "Attending maternity clinics regularly". They pointed out however that clinics were few and located many Kilometers from their villages. They added that trained nurses needed to be visiting villages to conduct mobile antenatal clinic to identify pregnancies with potential complications.

Participants agreed that those women with high risk pregnancies and living in villages far away from hospital should come and live in the waiting home when the pregnancy approaches term to avoid delivering in the home.

Some participants said "*Communities/villages need to raise money to buy as many bicycles as possible for transporting women to hospital when a woman has difficulty with labour"*.

An elderly man who had been listening to the discussion interjected, pointing out that "women give off their daughters early into marriages so that the son-in-law would buy them cloths like "Chitenge" material and help with work on the farm, as bride price.
Participants suggested that women should be sensitized through neighbourhood/village health committees to raise awareness on the importance of antenatal care and the need to deliver in hospital.

Asked whether participants knew that a VVF can possibly be repaired,
Participants in Solwezi expressed ignorance about the availability of surgical repair of VVF in public hospitals in the country. Those in Luapula and Northern Provinces said they had knowledge of persons who had been sent to hospitals in chilonga and Lusaka for treatment but could not say what the outcome after treatment was.

Asked whether any of the participants knew any person or relative with obstetric fistula?
3 -8 participants in the groups said they had a relation or neighbour with that labour complication.

Asked how communities relate to a woman with incontinence of urine (VVF/RVF)
One participant *"said there is nothing else a family can do but accepted what has happened. Sometimes the family might want to keep this as a family secret but because of the smell of urine, the neighbourhood soon gets to know about it".*

Other participants said marriages may suffer and end up with divorce or separation because the husband thinks the woman may not be able to bear him children any more. They said other 'good' men would support their wives throughout this problem knowing that they are part of the cause of this misfortune.

One participant observed that in some cases, the level of acceptance depends on the woman's ability to maintain personal hygiene so that she doesn't smell urine all the time. *"If a woman smells urine all the time, no man would like to sleep with her in the same room",* she said.

Asked what needs to be done to solve the problem of VVF/RVF
Most women from rural communities said they would like to see more clinics and hospitals near their villages.

"*Delaying or avoiding early marriages among girls to allow children to 'ripen' is one of the solutions,"* said the only male participant in Mansa. Participants in Mansa said there was need to enlarge and improve facilities in the existing waiting home so that more women with high risk pregnancies can come early to wait for their labour instead of trying to move to hospital when labour starts. It was observed that most waiting homes are small and congested.

Most women agreed that hospital deliveries were safer than home deliveries and that women in communities and villages should be encouraged to go to clinics and hospitals and be encouraged clinic and hospital deliveries.

Some participants advocated for abolition of delivery fees at hospitals saying most people were too poor to afford these fees and so choose to deliver from their homes.

Asked how they thought maternal health care could be improved,
Some participants said there was need to create delivery centres in villages since travelling to big hospitals is difficult and expensive.

Others said Government needed to provide motor vehicles to rural health centres to collect women with obstetric emergencies from far-flung areas. For this they said there was also an urgent need to improve the state of roads so that most villages can be accessible to motor vehicles.

Participants said "*Banafimbusa*" (Traditional Birth Attendants), needed to under go formal training so that they can perform as well as Nurses when working in remote areas.

Asked what type of transport most people use to transport women to hospital when there is a delivery complication.
Participants said this varies and depends on the distance to the nearest clinic/hospital from home.

They said most often women walk to the hospital if they have no bicycle. Others said if they were lucky and live by the roadside, they would hike, mostly public vehicles.

Participants in Southern province said ox-drawn carts are a very useful form of transport to a woman in labour. That though slow, it is more comfortable to women in labour than a bicycle. They said sometimes women deliver on the cart on the way to hospital.

Women Participants in Lubwe Mission hospital, in Luapula said they rely on donkeys' draft power. That those living along the coast of Lake Bangweuru come to Lubwe hospital by canoes puddled by their husbands and neighbours.

Asked what happens when there is no transport at all,
" You leave everything in the hands of God as the woman is compelled to deliver at home. Sometimes labour would take up to three days. But the woman would be very sick and the baby may even die", said one elderly woman who had escorted her teenage daughter to hospital.

Who delivers the baby under such circumstances?
Participants said there is usually a woman referred to as "*Nachimbusa*" in every village or community, who is always called upon to conduct a delivery in the home. A relative, especially a Grand mother or Auntie may also do it if the TBA is not nearby". Said one participant. "Problems come in when the woman tries to go for her postnatal check because she will be charged a penalty fee for not using the TBA". She added.

Discussions revealed that in some communities, a TBA would rebuke other people (Non official TBAs) for conducting a delivery since she is the only one authorized to report the conduct of birth to the nearest health facility so that the baby can receive vaccination.

The other reason is that TBAs actually lose out when delivery is conducted by a relative or any other person as she would not receive the token of appreciation which is commonly in the form of a big meal with a complete chicken rooster or a piece of chitenge material or washing soap.

What is the reception by health workers when you go to health facilities?
One participant answered that, *"Reception varies from clinic to clinic and is dependant on the type of person of the health worker you meet. We are all human being and one would expect to find some people who are good and those that are bad".* She said.

The other woman said *" Nurses get angry and shout at relatives when a woman has been in labour for many days without being brought to hospital."*

"*Health workers don't respect the judgement of relatives who take patients to the health centre even when a patient is brought in as a stretcher case. They may insist that she is still very far from delivering".* Said another participant.

Asked what prevents some women in communities/villages from seeking attention at the health facility?
Some participants said, "*Some women are lazy*".

Others said there is a lot of work to do at home as women have to ensure there is clean water and food in the home before they can think of walking long distances to the Clinic or hospital for antenatal care. Others, deep in the villages are just not aware of the relevance of antenatal care.

It was pointed out during these discussions that some women have a fatalistic attitude, thinking that their mother and grand mothers have always delivered in the homes, so why can't they do the same. Besides they believe that if they were meant to die due to that pregnancy, they would still die even if in hospital.

Some participants in the discussion cited delivery fees as a deterrent. They said fees ranged from K2 000 to K20 000, depending on the mode of delivery. Cesarean section usually demands for higher fees. They said money was difficult to find in rural areas.

Some Clients who cannot afford money are asked to pay the fees in kind. For example the team found a hospital general worker moving a big bag of charcoal that had been delivered to Lubwe Mission hospital by a woman who had delivered a couple of days before.

Transport costs to hospital they said, were also high as most villages are remote from health care facilities.

One woman said "People prefer to deliver at home and pay a token of appreciation to a relative or *'Nachimbusa'* at their own time than hospital where they have to pay the fees before discharge.

Another participant said "Some families do not have enough food in their homes to enable the pregnant woman go and stay at the waiting home near the hospital to await delivery".

When asked to mention any other burdens felt by the communities/villagers,
One participant said "Every time you call the community TBA for a delivery, you have to pay her a contribution towards the maintenance of her bicycle".

Discussions revealed that villagers in every community have a responsibility to prepare and weed a two Lima crop field for the TBA in appreciation of her community service.

Every woman is expected to participate in this work irrespective of whether they have concluded their reproductive career or not. This may not always be pleasant to some women who would rather want to work on their own fields. The TBA does not assist families, which miss work on her field, when they call for help.

DISCUSSION

Prevalence

From the results of this study the prevalence of VVF/RVF cannot be estimated as community data is missing. Using hospital data of all the deliveries only 0.68% (for Western, Eastern, Lusaka Southern) results in VVF/RVF. Those high numbers at Katete, Monze and UTH are a reflection of referrals from other provinces. Which means that some cases may appear in more than one hospital.

The total fistula cases in all provinces, which were found, recorded were 289 (0.46%). This excludes those cases in the villages unreported to health facilities but reported in focus group discussions and also those reported verbally in some hospitals as many cases, or those not recorded but sent back home.

This must be interpreted with caution because there is no information about the 53% of home delivery or delivery en route to hospital. When maternal deaths were compared to with the number of obstetric fistula recorded (figure 1) there seems to be some curious relationship. Obstetric fistula is a near miss of a maternal death. In Western Province remote areas are unreachable by any mode of transport. In some Districts bicycles were provided to TBA but the terrain is such that not even bicycles or 4 wheel drive vehicles can pass.

In North Western, Northern, Luapula and Central Provinces some hospitals had no records on VVF but the staff acknowledged seeing many cases that were referred. This is rather a deficiency in the HIMS system that does not spell out these conditions. Mansa general hospital did not record any cases and yet Chilubi Island (Luapula province) was serviced by the flying doctor services that brought in cases of VVF to Ndola Central Hospital, obstructed labour and its complications. The patients are given referral letter and not entered in any record book

Infrastructure and Equipment

There are waiting homes in 34 hospitals, where antenatal mothers wait for delivery. While this is a good idea to keep the high-risk mothers in a waiting home pregnancy and labour complications are sometimes unpredictable. Therefore it is the preparedness of a hospital to manage obstetric emergencies. Twelve (32%) hospitals though they have functioning theatre, they have no anesthetists. The general doctor or a nurse acts as the anesthetist. 3 hospitals had no doctor at all and therefore all those requiring caesarean sections have to be referred to other hospitals. Four hospitals were not performing any cesarean sections (Nyimba, Chilubula, Serenje and Nangoma). However 80% of hospitals had a cesarean set. The supply of consumables is mostly erratic or not available.

Availability of the equipment and consumables help hospital respond to obstetric emergencies that are normally referred to them from remote places. Hospitals without theatre or anesthetic machines are not able to perform caesarean sections, manual removal of the placenta and suturing of third degree tears.

VVF repairs

There were only 3 hospitals that had no doctor at all (Serenje, Chilubula, and Zimba Mission) out of the 38 hospitals surveyed. Only 4 hospitals (10.5%) offer some VVF repair. However only Monze and Katete are repairing VVF on regular basis 60 – 80 cases a year with a 70%

success rate. Chilonga hospital repairs some fistulas. The other doctors have not received any formal training in fistula repair and also do not have large numbers of cases, which would enable them to develop and maintain high level of skill. Despite having these hospitals that offer repair many patients are not able to reach them because of finances. In Solwezi, no patient with VVF is referred to higher centers because the patients cannot afford. Most of doctors are general medical doctors and the specialists are concentrated in UTH or provincial hospitals. Only one or two doctors were interviewed during this study and they had some knowledge of fistula management and prevention.

Only one specialist regularly repairs fistula in the UTH. The other two who were repairing fistula have since stopped because of low success rates of 50%. Monze hospital has a visiting specialist with VVF repair skills who performs repairs twice a year. There has been no deliberate move to train some doctor who would take over such work. The repair workshops however are not budgeted for by the hospital. Therefore the hospital has to find staff, consumables, ward space and money to transport patients back to their provinces. This extra burden on the budget.

Theatres in all these hospitals require renovations. Some of them are non functional. Supplies of consumables are erratic and inadequate. The hospitals are considered as referral centers for fistula repair and now have to acquire some consumables from donors and friends of the hospitals.

Record keeping is very poor and as a result patients are shunted from one place to another without any records in those hospitals. Just as maternal death is well documented fistulas must also be documented because it is a near miss of a maternal death and because of the seriousness of the problem.

Community
Focus group discussions revealed that there are known cases of VVF in the community. The community is aware of how to prevent adverse complications of delivery but they have no means. The community wants to learn more about VVF and its treatment. So many other organizations are providing donkeys and oxcart for transport. Others are addressing prevention of maternal deaths through improving emergency obstetric care.

It was surprising that hospitals were referring their Fistula patients to another hospital that did not offer such services. The doctors did not know where fistulas are being repaired. They just sent them to next level without any information on such sub specialty. It was this shifting from one hospital to another and another at their own expense that discouraged some patients. There is a need to educate all hospitals about where to refer.

The majority of fistula patients are poor and living very far from a facility. Usually they have no transport but when transport is available it is very expensive and sometimes requires selling a cow to pay for some services while the hospital has to finance the operations, hospital stay and sometimes transport back to their village.

Community perspective
From the focus group discussions there are cases of fistula living in the villages. Most of the villagers did not know that fistula could be repaired. But those near Katete, Monze and Chilonga Mission hospitals knew that their hospitals repair fistulas. They also knew that delivery at hospitals or health center would prevent fistula. However, they sited transport as

a major contributing factor for delivering in their homes. When asked what should be done, all responses were addressed to the government while there was no suggestion of what they themselves needed to do.

Human resource

Training all obstetricians and gynecologists in fistula repair may be expensive and not cost effective, as they cannot maintain the skill when they have 3 or 4 cases a year. However there is need to train some doctors who can team up to operate as a center of excellence. Training of these doctors could be in a well-established center like Addis Ababa or Kaura (Kano) fistula hospitals. It is only with these formal trainings that the failure rates in repairs can be reduced. The complicated cases also can have the diversion of urine in the same hospitals and same doctors. Staff such as nurses, physiotherapy and anesthetists is vital to the success of fistula repairs.

Staff – Training

Staffing in most of the hospitals visited is inadequate. In some hospitals TBA are conducting deliveries in the absence of a midwife. All midwives and nurse have realized the need for their upgrading in fistula management. Only 20 nurses said they had looked after a fistula patient before and currently had forgotten the management of these patients. Only 15 hospitals had some guidelines in management of complication of pregnancies. Two doctors have had formal fistula repair training (Monze and Chilonga). Katete specialist has trained on the job and now has been a referral center for fistula in the Eastern province. The success rates are 60 – 70% comparable to Monze, which is also a referral hospital for the rest of the country. Monze has fistula repair workshops twice a year by a visiting doctor. UTH is a referral center for the whole country. Two of the enthusiastic specialists have given up repairing fistulas because of a low success rate of 50%. None of the specialists have had a formal training in fistula repair. Being a teaching hospital, there is need to train some specialist who would then train others. This training would have to be incorporated into postgraduate training currently existing in UTH. Katete and Monze hospitals could also be centers for repair, given their facilities and skilled surgeons.

Postoperative care is critical in fistula repair and it requires interested trained nurses working in a social environment that is conducive.

RECOMMENDATIONS

This situation analysis into maternal health care has highlighted a number of factors that contribute to the high incidence of obstetric fistula in this country. Based on these detailed assessments, several recommendations will also be offered for actions. Dealing with the prevention and treatment of fistula in Zambia will require a multisectoral approach.

- **Raising awareness for prevention and treatment**: Obstetric fistula in Zambia is a neglected reproductive health issue.

  - There is need to raise awareness through **advocacy** to better inform health planners, Members of parliament and policy makers about the need to spend more time and resources in addressing this problem.

  - There is also a serious need to provide **community education** through political, traditional and church leaders, neighbourhood/village health committees about the importance of antenatal care and delivering in health care facilities. Community leaders should be sensitized to discourage teenage marriages. Community ratio, Neighbourhood Health Committees and the treated patients can be channels of information sharing.

  - Interest has to be created in **health workers and clinicians** in preventing fistula, managing or referring patients appropriately through various trainings.

  - The **Medical School** and the nursing schools curriculum's have to ensure that they build awareness and generate interest for fistula prevention and repair for the new graduates.

  - Continued **Nurses and Doctors education** (refresher) has to be provided to keep health staff abreast of new developments in the area of reproductive health.

- **Emergency Obstetric Care (EmOC) for Complicated Pregnancy**

  - **Improved access to family planning information and services** especially among the rural communities.

  - There is need for enhanced maternal health care programs that would ensure **wider antenatal coverage** to be able to identify complications early.

  - Ensure more **skilled attendance** at birth. The Government through the Central Board of Health needs to provide incentives for health workers serving in rural areas in order to **attract and retain health staff**.

  - EmOC equipment and supplies should be present in all health facilities.

  - The program of **rural rotation for Junior Doctors** is a good idea and should continue. Junior doctors in district hospitals are trained to perform caesarean section and so are able to provide emergency obstetric care. The study of fistula repair should be included in medical school training.

- The referral system needs to be supported by reliable **communication and transport (ambulance)** to facilitate quick referrals to higher-level facilities for cases of complicated labour.

- **Increasing opportunities for safe motherhood**

  - With the continued exodus of qualified Midwives and nurses for greener pasture, the shortage of staff in most rural health facilities will not be overcome in many years from now. International organizations like UNFPA and others should be encouraged to continue their programs of providing **training to Traditional Birth Attendants (TBAs)** who are very well accepted by the rural communities. An enhanced TBA training program will enable them recognize pregnancy and potential labour complications.

  - **Establishment of waiting rooms:** All pregnant women should be encouraged to await labour at waiting homes near a hospital or health center. Waiting homes could also be created within the facility or else built by the community close to the facility. Publicity of the importance of using waiting facilities to be done in communities.

  - **All provincial facilities already dealing with fistula repair** should be supported through improved funding to enable high quality fistula repair and follow-up services. Fistula centers should have waiting rooms for relatives that accompany the patients. Consideration also needs to be given to **developing national capacity** through a cost effective training mechanism so that national capacity is built, taking into account the priority of the subject and the very limited resources.

  - There is serious need to establish a **central fistula-training unit**, which will serve as a referral center for repair and training of young specialists in fistula repair surgery. It will also help in raising interest for fistula repair.

  - **Fistula repair surgery should be free**. Patients should have their return fare back home paid for by the health sector.

  - Patients who have been treated for fistula should receive **adequate information concerning prevention of pregnancy** (family planning counseling), HIV/AIDS information and how to deliver the subsequent pregnancies.

  - Government needs to support programs aimed at **reducing domestic poverty**, especially in the rural areas. Poor nutrition is a result of poverty and leads to stunted pelvic growth in women.

  - Women's empowerment: There is need to improve the economic status of women through provision of free education to rural communities especially the girl child (Program for the Advancement of Girl Child Education - PAGE). This will prevent early marriages. This it to improve the decision making process of women concerning their health seeking behaviour.
    - Educated women have more information on dangers of pregnancy and childbirth
    - Will emphasise value of EmOC
    - Will postpone age of marriage

- **Life skills** will have to be taught to women who have been treated; possibly during their stay at the facilities as some have a long hospital stay

- There is need for improved the **rural road network** for ease access to health care facilities. Where roads are impassable, animal drawn carts and adapted bicycles are a good alternative. Engine-powered boats need to be provided for the people living along the rivers or lakes. This should reduce the delay in reaching the facility. Communities should also be motivated to see it as a priority to improve their road networks to the health facilities and through community innovative funds or the Micro-projects Unit they could improve their roads.

- Government to develop an action plan to be developed for the implementation of these recommendations.

Appendix 1

Fact sheets on individual hospitals visited

Kabwe General Hospital. Visited Friday November 14, 2003.
Size: 399 beds..
Provenance of Clients: Clients come from Kabwe urban and rural areas. Being a provincial hospital, Kabwe general also receives referrals from Kapiri Mposhi, Mkushi and Serenje districts. Clients pay a fee of K 3000 at registration as user fee. Those undergoing cesarean section pay an additional K 10 000.
Hospital attendance of maternity cases: No proper records.
Number of deliveries: 2 749 for last year
Number of Cesarean sections: 365. (yr. 2002). The theatre is well equipped with a functioning general anaesthetics machine.
Number of maternal deaths: 40
Number of complicated deliveries: No proper records
Obstetric fistula case load: No record of fistula patient admission kept. All patients have been referred to UTH and Monze.
Medical Staff: There are 4 Doctors at General Medical Officer lever. This includes the Chief Medical Officer. Three of these perform cesarean sections. There are 174 Nurses among whom 53 have Midwifery training. The hospital has 03 Anaesthetists, 4 Physiotherapists and 7 Lab Technicians.
Barriers:

Ndola Central Hospital. Visited Saturday, November 15, 2003.
Size: A tertiary hospital, with a bed capacity of 851. Part of the maternity and gynae sections operate as a fee paying wing at 35% capacity.
Provenance of clients: Maternity and gynea Clients come primarily from the Ndola urban and rural district clinics. Being a tertiary hospital, clients from surrounding districts in the Copperbelt province are also referred here. Some patients with various gynecological complications, including fistula come from Luapula and Northern provinces.
Hospital attendance of maternity cases: 4 255 for the year 2002.
Number of Deliveries: 2 324 for the year 2002.
Number of Cesarean section: 395 for the year 2003.
Number of maternal deaths: 05 for the year 2002.
Number of complicated deliveries: 57. Including 56 vacuum deliveries and I case of forceps delivery.
Obstetric fistulas case load:
Medical staff: Total of 54 Doctors from Junior residents to Consultant. There are at present two Consultant Obstetrician/Gynecologists both from the Democratic Republic of Congo (DRC).. Non of these specialist has any particular interest in fistula repair surgery. All resident medical officers are trained to perform cesarean sections. The hospital has 31 midwifes some of whom are currently on vacation and sick leave.
Barriers:

Kitwe Central Hospital. Visited Saturday, November 15, 2003.
Size: 628
Provenance of Clients: Clients come from any of the districts on the Copperbelt.
Hospital attendance of maternity cases: 6 291
Number of deliveries: 5 895 for the year 2002.
Number of Cesarean sections: 376 for year 2002.
Number of maternal deaths: 8. Causes included uterine rupture, Postpartum haemorrhage, eclampsia and returned placenta.
Number of complicated deliveries: 550.
Obstetric fistula case load: No special register for fistula exists. This condition has been regarded as any other gynaecological condition. There are no repair services available. Non of the three Consultant gynaecologists has any particular interest in fistula.
Medical Staff: There are 9 Doctors including three Consultant Obstetrician and Gynaecologists. One of the three has some informal training in fistula repair and is a Deputy Chief Administrative Officer and so spends very little time on clinical duties.

Barriers:

Solwezi General Hospital. Visited. Saturday November 15, 2003
Size: 251 bed capacity
Provenance of Clients: Receives referrals from district hospitals in the province. Most clients from Solwezi town and villages surrounding the district. 4 702 patients were referred to the hospital 2002. Maternity clients pay an admission fee of K 1 500 and K 2 000 as lodging fee. They further pay K 5 500 for a normal Delivery and K 12 000 for cesarean section.
Hospital attendance of maternity cases: 10 921 for the yr 2002.
Number of deliveries: 1 374 (yr 2002)
Number of Cesarean sections: 108. The Hospital has a functioning theatre and uses general anaesthesia.
Number of maternal deaths: 4
Number of complicated deliveries: 143. These included all cases of cesarean section.
Obstetric fistula case load: No records. Patients are referred to the Copperbelt hospitals.
Medical Staff: There are 12 Doctors one of whom is an expatriate Consultant Obstetrician an d Gynaecologist. 4 Doctors can perform cesarean section. 15 of the Nurses have Midwifery training.

Mukinge Mission Hospital. Visited Sunday November 16, 2003.
Size: 200 beds.
Provenance of Clients: Clients come from Kasempa district and surrounding villages.
Hospital attendance of maternity cases: 1 592.
Number of deliveries: 1 551 Total admissions for the year 2002.
Number of Cesarean sections: 68. The hospital has a functioning operative theatre. All cases are done under regional anaesthesia as there is no anaesthetic machine.
Number of maternal deaths: 1 for the year 2002**.**
Number of complicated deliveries: 40
Obstetric fistula case load: Many patients have passed through the hospital with fistula and have been referred to Ndola and other Hospitals on the Copperbelt. There are no records kept.
Medical Staff: There are 4 Doctors, all expatriates. 2 of them can perform cesarean sections. There are 2 clinical officers, 38 Nurses but only 3 of them with Midwifery training. Labour ward heavily rely On trained Traditional Birth Attendants (tTBAs) who come to do night shifts in the hospital and are able to alert the Doctor when labour progress is in doubt.

Maheba Refugee Camp. Visited Sunday November 16, 2003.
Size: There are up to 8 clinics in maheba refugee settlement offering maternal health care. UNFPA and UNHCR are supporting various reproductive health activities in these clinics.
Provenance of Clients: Refugees from Congo Democratic Republics and Angola.
Hospital attendance of maternity cases: Difficult to obtain records from all the 8 clinics.
Number of deliveries: No aggregated records. Most deliveries are done by the 5 UNFPA recognized tTBAs, in clients' homes. The UNFPA arranges training programs for TBAs and supply them with bicycles upon graduation to be able to reach patients when there is a call.
Number of Cesarean sections: Nil. Cases for cesarean section are referred to Solwezi.
Number of maternal deaths: No records.
Number of complicated deliveries: No records
Obstetric fistula case load: No record. Clients are referred to Solwezi immediately.
Medical Staff: A Doctor from Ministry of Health is attached to the main clinic which serves as a referral for the other 7 clinics.

St Theresa Mission Hospital. Visited Monday November 17, 2003.
Size: 140 beds. There is fee paying wing operating at above 30% capacity for gynae and maternity care.
Provenance of Clients: This is Catholic run hospital that also receives operational grants from the Central Board of Health (CBoH). Patients come from the surrounding districts of the Copperbelt. Because of the high quality of service, some clients come from as far north as Chingola.
Hospital attendance of maternity cases: 3 381 for the year 2002.
Number of deliveries: 629 for the year 2002.
Number of Cesarean sections: 35. Hospital has a functioning theatre with two operating tables, and use regional anaesthetic administered by a Doctor for all major surgical procedures. There is no anaesthetist. There are more than two complete hysterectomy and cesarean sets.
Number of maternal deaths; 04
Number of complicated deliveries: 65

Obstetric fistula case load: 06 since 2002. No fistula repair procedures are done as there is no surgeon trained in this. 4 of the patients were discharged home while the other two were referred to Chilonga for possible repair.
Medical Staff: There are 7 Midwives and 3 Doctors, 3 Laboratory Technicians and 2 Physiotherapists.
Barriers:

Mpongwe Mission Hospital. Visited Monday November 17, 2003.
Size: 90 beds.
Provenance of Clients: Clients come from Luanshya and Kapiri rural
Hospital attendance of maternity cases: 864.
Number of deliveries: 660.for the year 2002.
Number of Cesarean sections: 25 for the year 2002. There is an operating table. With a complete cesarean set. The hospital has no capacity to do a hysterectomy and such patients are referred to St Theresa Hospital 15 Kilometers down the road.
There is an old but functioning anaesthetic machine.
Number of maternal deaths: 4 for the year 2002.
Number of complicated deliveries: 44. These included all cases of cesarean section. Instrumental deliveries are not done for lack of both expertise and equipment.
Obstetric fistula case load: 4 cases seen since 2002. Three of these discharged home on bladder catheter and one referred to Chilonga for possible repair.
Medical Staff: There are 2 foreign Doctors from the Netherlands working as General Medical Officers. They attend to obstetric emergencies and perform cesarean sections. There are 24 Nurses, 10 of whom are Midwives. A Nurse without a formal training acts as an Anaesthetist during cesarean section. There are 2 lab technicians and a physiotherapist.

Serenje District Hospital. Visited Tuesday November 18, 2003.
Size: 64 bed hospital.
Provenance of Clients: Clients come from the district and surrounding villages. A few come from there is no hospital in that town.
Hospital attendance of maternity cases: 467 attended the facility in year 2002.
Number of deliveries: 430 in the year 2002.
Number of Cesarean sections: there is no theatre and so cases for cesarean delivery are referred to Chitambo Mission or Kabwe general hospital.
Number of maternal deaths: 0 for the year 2002. All complicated obstetric cases are immediately transferred out to either Chitambo or Kabwe as soon as they arrive at the hospital. There is always an ambulance with enough fuel and a shift driver ready to transfer a patient. Some clients with complicated obstetric condition die on the way and are never recorded as Serenje hospital maternal mortality.
Number of complicated deliveries: 8. Most of them have been referred out.
Obstetric fistula case load: 4 cases of fistula have been admitted to the gynae ward since 2002. All were referred to Chilonga Mission hospital. .
Medical Staff: The hospital has no Doctor. There are 4 Clinical Officers who see gynaecological cases as well in a combined female ward. There are 19 Nurses 7 of whom have Midwifery training. There is only one Lab Technician to do all lab tests.
Barriers:

- Shortage of Midwives
- The absence of a Doctor.
- Lack of facilities for emergence obstetric surgery.

Chilonga (Our Lady's) Mission Hospital. Visited Tuesday November 18, 2003.
Size: 170 beds. A Mission hospital also referred to as our Lady's hospital.
Provenance of Clients: Clients come from Central and northern province towns of Kapiri, Mkushi, Serenje and Mpika. A few patients with fistulas are referred from Luwingu.
Hospital attendance of maternity cases: 593 for the year 2002.
Number of deliveries: 482.
Number of Cesarean sections: 90 with 54 cases being due to cephalo-pelvic disproportion.
Number of maternal deaths: 3.
Number of complicated deliveries: 108.
Obstetric fistula case load: 16 fistula cases have been admitted to hospital since May 2003. Attempted repairs were made on 5 of these with good success. 9 others were referred to Monze hospital for repair while 1 client had a very complicated fistula which would not possibly be repaired.

Kasama General Hospital. Visited Wednesday, November 19, 2003.
Size: 420 beds.
Provenance of Clients: A provincial hospital and receives referral from all district hospital in the province. 466 clients were referred to the hospital in 2002. Clients pay a registration fee of K 10 000. There are no delivery fees, however.
Hospital attendance of maternity cases: 1 946 for the year 2002.
Number of deliveries: 1 287**Number of Cesarean sections**: 251. Has a functioning operating theatre with one anaesthetic machine. Emergency and elective hysterectomies are also performed though the hospital has only one complete hysterectomy set. 4 Doctors are trained to perform cesarean sections while only one GMO can do a hysterectomy.
Number of maternal deaths: 21
Number of complicated deliveries: 586. Including all cases of cesarean section.
Obstetric fistula case load: There are no records thought the hospital admitted at least 2-3 fistula patients per month. One such client was discharged two days before the team arrived at the hospital. Despite the high number of referred cases of fistula, no repair procedures are done. Clients are redirected to University Teaching Hospital (UTH) and Monze for repair.
Medical Staff: There are 8 Doctors, 4 of whom are able to perform a cesarean section. Only 16 out of the 21 Midwives on the establishment are actively working.

Chilubula Mission Hospital. Visited Wednesday November 19, 2003.
Size: 75 beds. A Mission hospital run by the Catholic Church. The hospital is presently undergoing extension that will see the creation of a theatre block, a new administration wing and separate obstetric and gynae wards.
Provenance of Clients: From surrounding villages.
Hospital attendance of maternity cases: 324 for the year 2002.
Number of deliveries: 201.
Number of Cesarean sections: there is no functioning theatre at the hospital for the moment.
Number of maternal deaths: Non, as all complicated cases of labour are immediately referred to Kasama. The hospital has an efficient and ready transport for referral at all times.
Number of complicated deliveries: 16.
Obstetric fistula case load: No case of fistula has been admitted to the hospital in the last one year.
Medical Staff: There is no single Doctor at the hospital. Two Clinical Officer do daily rounds and refer all complicated gynae cases to Kasama. There are 8 Nurses at the hospital. 4 of these are Midwives and conduct all deliveries with the help of two trained TBAs who come to the hospital to help.

Luwingu District Hospital. Visited Wednesday November 19, 2003.
Size: 81 beds.
Provenance of Clients: Clients come from Luwingu district and its surrounding villages.
Hospital attendance of maternity cases: 878 for the year 2002.
Number of deliveries: 609.
Number of Cesarean sections: 26. There is a newly built and functioning operating theatre. The only two expatriate Doctors perform emergent and elective cesarean section under Ketamine. There is no anaesthetic machine and no Anaesthetist. There are plans to recruit and send a Clinical Officer to Lusaka for a formal training in anaesthesia.
Number of maternal deaths: 2 deaths for the year 2002.
Number of complicated deliveries: 76. These included 33 cases of fresh still births.
Obstetric fistula case load: 10. No fistula repair procedures are done. 9 of these clients were referred to Chilonga and Monze. For possible repair. One of these 10 clients was diagnoses of a fistula at 16 weeks of pregnancy.
Medical Staff: There are two Doctors from the Netherlands working as general Medical Officers and perform emergency cesarean sections. There are 8 nurses, 4 of whom have Midwifery training.

Kawambwa District Hospital. Visited Thursday November 20, 2003.
Size: 38 bed capacity.
Provenance of Clients: From Kawambwa district and surrounding villages.
Hospital attendance of maternity cases: 519.
Number of deliveries: 353
Number of Cesarean sections: 18 cesareans for the year 2002. One doctor does all the obstetric emergency procedure. The theatre light is non functional. Surgery is done under the ordinary room lighting supplemented by a torch at night.
Number of maternal deaths: 4

Number of complicated deliveries: 63. This includes all cases of cesarean section.
Obstetric fistula case load: the record book in theatre showed that 8 cases of fistula had been taken to theatre for examination under anaesthesia and repair. There were no records to show the success of these repairs, however.
Medical Staff: The hospital has only one foreign Doctor from the Democratic Republic of Congo, who performs all general and obstetric emergence procedures. There are only 2 trained Midwifes, including the Nursing Officer who has to do both administrative and clinical work.

Mansa General Hospital. Visited Thursday 20, 2003.
Size: 300 bed capacity. This is a provincial hospital.
Provenance of Clients: Clients are referred from district hospitals in the province. The majority however, come from within town and surrounding villages.
Hospital attendance of maternity cases: 1 815
Number of deliveries: 1 498 for the year 2002.
Number of Cesarean sections: 142. The hospital has a functioning surgical theatre will a modern anaesthetic machine. Elective and emergency hysterectomies are performed by a Registrar with adequate experience in gynaecological surgery.
Number of maternal deaths: 12.
Number of complicated deliveries: 244
Obstetric fistula case load: being a provincial hospital, Mansa receive a lot of cases of fistula from the districts in Luapula. At the time of this visit to the hospital, there were 4 clients with fistula on the wards.

Lubwe Mission Hospital. Visited Friday November 21, 2003.
Size: 116 bed capacity. An old Catholic missionary hospital.
Provenance of Clients: Clients come from Chilubi island on the middle of lake Bangweulu and from villages along the coast. Registration fee is K 2 000 for all cases. Besides, pregnant women pay additional K 3 000 for primigravid and K 5 000 for multigravid mothers, irrespective of the mode of delivery. Some clients come to hospital on canoes and carts drawn by donkeys.
Hospital attendance of maternity cases: 734 for the year 2002.
Number of deliveries: 434
Number of Cesarean sections: 65. There is a is a small theatre for emergence obstetric surgery. One of the only two resident foreign doctors perform cesarean sections under regional anaesthesia as there is no anaesthetic machine.
Number of maternal deaths: 6. All associated with obstructed labour and sepsis.
Number of complicated deliveries: 74 including all cases of cesarean section.
Obstetric fistula case load: many cases have been admitted to hospital since 2002. All referred to Mansa.
Medical Staff: 2 foreign Doctors from DRC working as General Medical Officers. There are 5 Midwives, 1 anaesthetist and 1 Laboratory Technician.

Kaoma District hospital. Visited Wednesday November 12, 2003.
Size: 80 beds.
Provenance of Clients: Clients mostly are residents of Kaoma town and surrounding villages.
Hospital attendance of maternity cases:
Number of deliveries: 1 627 deliveries were recorded between 2002 and November 2003.
Number of Cesarean sections: 13. There is a functional theatre with anaesthetic machine.
Number of maternal deaths: 4.
Number of complicated deliveries: there were no records.
Obstetric fistula case load: 5 cases were seen over the last 2 years. All were referred to higher level hospitals for repair.

Mangango Hospital. Visited Wednesday November 12, 2003.
Size: 70 beds.
Provenance of Clients: Clients come from surrounding villages**.**
Hospital attendance of maternity cases:
Number of deliveries: 449 for the year 2002.
Number of Cesarean sections: 11 for the year 2002.the hospital has a capacity to do emergency cesarean sections under general anaesthesia. There is no hysterectomy set.
Number of maternal deaths: 1 death was recorded last year.
Number of complicated deliveries: 38. These included all cases of cesarean section.

Obstetric fistula case load: There are no fistula repair activities done. Clients with fistula are referred to other higher level centres for repair.
Luampa Mission hospital. Visited Wednesday November 12, 2003.
Size: 102 beds**.**
Provenance of Clients: from surrounding villages**.**
Hospital attendance of maternity cases:
Number of deliveries: 994 for the year 2002-Nov 2003.
Number of Cesarean sections: 19.The hospital has capacity to perform emergency cesarean sections and hysterectomy.
Number of maternal deaths: one death for year 2002.
Number of complicated deliveries: no records.
Obstetric fistula case load: one case recorded. Non of the Doctors at the hospital has the training to do repair procedures.
Medical Staff: one doctor, one clinical officer

Yuka Mission hospital. Visited Thursday November 13, 2003.
Size: 74 beds.
Provenance of Clients: surrounding villages.
Hospital attendance of maternity cases: no records.
Number of deliveries: 354 for the period from 2002 to Nov 2003**.**
Number of Cesarean sections: 6.
Number of maternal deaths: 1.
Number of complicated deliveries: 10 including all cases of cesarean section.
Obstetric fistula case load: 3 cases have been seen in hospital from 2002**.**
Medical Staff: two doctors,

Lewanika General hospital. Visited Friday November 14, 2003.
Size: 255 beds. This is a provincial hospital.
Provenance of Clients: Clients are referred from all district hospital is the province.
Hospital attendance of maternity cases:
Number of deliveries: 1 611**.**
Number of Cesarean sections: 139**.** Emergency and elective cesarean sections are done under general anaesthesia.
Number of maternal deaths: 17 for the year 2002**.**
Number of complicated deliveries: 319. These included all cases of cesarean section.
Obstetric fistula case load: 2 cases admitted since January 2003. Referred to Monze hospital for repair.
Medical Staff: six doctors

University Teaching Hospital. Visited Monday November 17, 2003.
Size:1800 beds
Provenance of Clients:
Hospital attendance of maternity cases
Number of deliveries: 11585 (2002)
Number of Cesarean sections: 2075
Number of maternal deaths: 32
Number of complicated deliveries: 1362
Obstetric fistula case load: 28
Medical Staff: 12 specialists obs&gynae

Chikankata Mission hospital. Visited Wednesday November 19, 2003.
Size: 200 beds.
Provenance of Clients: Receives referrals from Kafue, Siavonga, Mazabuka and other district hospitals in Southern Province.
Hospital attendance of maternity cases:
Number of deliveries: Total deliveries for 2002-November 2003 were 690**.**
Number of Cesarean sections: 53. The hospital has a well equipped theatre capable of performing emergence cesarean and hysterectomy under general anaesthesia.
Number of maternal deaths: 7 cases for year 2002.
Number of complicated deliveries: 45.
Obstetric fistula case load: 1 case admitted in 2003.

Mazabuka General hospital. Visited Wednesday November 19 2003.
Size: 169.
Provenance of Clients: clients come from Mazabuka district and surrounding villages**.**
Hospital attendance of maternity cases: .
Number of deliveries: 2 588 for the year 2002**.**
Number of Cesarean sections: 143.
Number of maternal deaths: 23
Number of complicated deliveries: 177 including all cases of cesarean section**.**
Obstetric fistula case load: 2 cases in 2002. Sent to Monze hospital for repair.
Medical Staff: 3 doctors

Monze Mission hospital. Visited Wednesday November 19, 2003.
Size: 274.
Provenance of Clients: Clients are referred from district hospitals in the province. Some clients come from as far as Lusaka.
Hospital attendance of maternity cases:
Number of deliveries: 3 235 for the period 2002- Nov 2003.
Number of Cesarean sections: 245 for the period 2002- November 2003. The hospital has a very active and well equipped theatre and is capable of doing all types of Obstetric and gynaecological emergence and elective procedures.
Number of maternal deaths: 20.
Number of complicated deliveries: No records
Obstetric fistula case load: 137 fistula repair procedure have been undertaken in 2002&2003. A visiting fistula expert visits the hospital twice a year. He has trained a resident consultant Gynaecologist who also performs repair procedures regularly.
Medical Staff: The hospital has 5 Doctors including an expatriate Consultant Obstetrician and Gynaecologist. Two other Doctors help with cesarean sections. There are two well trained anaesthetists. And 6 Nurses with Midwifery training.

Choma District hospital. Visited Thursday November 20, 2003.
Size: 206 beds..
Provenance of Clients: From Choma district and surrounding villages.
Hospital attendance of maternity cases
Number of deliveries: 2 041 for the period 2002- Nov 2003.
Number of Cesarean sections: 155 for the period 2002-Nov 2003.
Number of maternal deaths: 9 deaths.
Number of complicated deliveries:291
Obstetric fistula case load: 11 cases over a period of 5 years. All referred to Monze hospital for repair.
Medical Staff: 6doctors
Barriers

Zimba Mission hospital. Visited Thursday November 20, 2003.
Size: 106 beds..
Provenance of Clients: From Zimba Town and surrounding villages.
Hospital attendance of maternity cases:
Number of deliveries: 1 258 for the period 2002-2003.
Number of Cesarean sections: 70. The hospital has a functioning theatre and performs emergency cesareans under regional anaesthesia. There is no Anaesthetic machine. Cases requiring hysterectomy are referred to Choma of Livingstone.
Number of maternal deaths:7 cases since 2002.
Number of complicated deliveries: 70.
Obstetric fistula case load: 2 cases.
Medical Staff: There are noDoctors at the hospital. A visiting doctor performs cesarean sections. There is no fistula repair surgery done.
Barriers:

Livingstone General Hospital. Visited Thursday November 20, 2003.
size: Not known.
Provenance of Clients: Clients are referred from other district hospitals in the province.
Hospital attendance of maternity cases:

Number of deliveries: 1 380 from 2002- July 2003.
Number of Cesarean sections: 111. The theatre is function with a modern anaesthetic machine. Emergency and elective cesarean sections are performed.
Number of maternal deaths: 15 cases
Number of complicated deliveries: 109
Obstetric fistula case load: 15 cases. Most of these were rectal vaginal.

Nangoma Mission hospital.
Size: 30 beds
Provenance of Clients: Typically a rural setting. Clients come from surrounding villages.
Hospital attendance of maternity cases:
Number of deliveries: 943 between 2002-November 2003.
Number of Cesarean sections: Nil.
Number of maternal deaths: Nil.
Number of complicated deliveries: 28
Obstetric fistula case load: no records.
Medical Staff: one doctor

Mumbwa District hopital.
Size: 76
Provenance of Clients: Clients from Mumbwa district and surrounding villages**.**
Hospital attendance of maternity cases:
Number of deliveries: 1 548 from 2002-November 2003.
Number of Cesarean sections: 47.
Number of maternal deaths: 14. Prolonged and obstructed labour with sepsis was the commonest reason.
Number of complicated deliveries: 1 548 between 2002- November 2003.
Medical Staff: one doctor

Mpanshya, St Luke Mission hospital. Sunday November 23, 2003.
Size: 53 beds.
Provenance of Clients: Clients come from surrounding villages**.**
Hospital attendance of maternity cases:
Number of deliveries: 117 deliveries between 2002-November 2003.
Number of Cesarean sections: 1 emergency cesarean was done under regional anaesthetic. There no anaesthetic table.
Number of maternal deaths: 1.
Number of complicated deliveries: 15
Obstetric fistula case load: no records available.
Medical Staff:one doctor
Barriers

Nyimba District Hospital. Visited Sunday November 23, 2003
Size: 72 beds
Provenance of Clients: From the district and surrounding villages**.**
Hospital attendance of maternity cases:
Number of deliveries: 787 for the period between 2002- November 2003.
Number of Cesarean sections: there are no theatre facilities. Labour ward is Midwifery led as there is no Doctor.
Number of maternal deaths: 2 for the same period.
Number of complicated deliveries: 20. Some of these were referred out to higher level hospitals for cesarean section.
Obstetric fistula case load: No records on fistula exist**.**
Medical Staff: one doctor Clinical Officers and Midwifes.
Barriers no theatre

Minga Mission hospital. Visited Sunday November 23, 2003.
Size: 136
Provenance of Clients: Clients come from surrounding villages.
Hospital attendance of maternity cases: no records

Number of deliveries: 391 deliveries between 2002- November 2003.
Number of Cesarean sections: 10. A functioning theatre with an anesthetic machine**.**
Number of maternal deaths: 2**.**
Number of complicated deliveries: 69
Obstetric fistula case load: 2 cases were admitted in the year 2002. Referred to a higher level hospitals for repair.
Medical Staff: 2doctors

Petauke District hospital. Visited Sunday November 23, 2003.
Size: 121
Provenance of Clients: From Petauke district and surrounding villages**.**
Hospital attendance of maternity cases:
Number of deliveries: 916 between 2002 and Nov 2003.
Number of Cesarean sections: 86. There is well equipped theatre capable of alll obstetric and gynaecological surgery.
Number of maternal deaths: 10.
Number of complicated deliveries: 64
Obstetric fistula case load: 7 cases. 2 were repaired.
Medical Staff:5 doctors
Barriers Dr Clegg leaving ----repaired fistulas

Nyanje Mission hospital. Visited Monday November 24, 2003.
Size: 120
Provenance of Clients: surrounding villages
Hospital attendance of maternity cases
Number of deliveries: 1 502 deliveries between 2002- Nov 2003**.**
Number of Cesarean sections: 72. Emergence cesarean sections are performed under regional anaesthesia.
Number of maternal deaths: 5
Number of complicated deliveries: 316.
Obstetric fistula case load: 2 cases recorded. Both referred to higher level hospital.
Medical Staff: 2 doctors

St Francis Mission hospital. Katete. Visited Monday November 24, 2003.
Size: 360. A mission hospital.
Provenance of Clients: Clients are referred from other district hospitals in the province.
Hospital attendance of maternity cases:
Number of deliveries: 3 709 deliveries for the period 2002- November 2003.
Number of Cesarean sections: 334 for the same period. There is a well equipped theatre with modern anaesthetic machines. A variety of obstetric and gynaecological procedures are done by a Consultant Obstetrician and Gynaecologist who also performs fistula repair operations.
Number of maternal deaths: 20.
Number of complicated deliveries: 426
Obstetric fistula case load: 90 cases of fistula have been repaired with a very good success rate
Medical Staff: A Consultant Obstetrician and Gynaecologist.

Mwami Mission hospital. Visited Monday November 24, 2003.
Size: 210. A Mission hospital.
Provenance of Clients: From the district and surrounding villages.
Hospital attendance of maternity cases
Number of deliveries: 1 132 deliveries for the period between 2002- November 2003.
Number of Cesarean sections: 156. There is a functioning theatre with anaesthetic machine.
Number of maternal deaths: 5
Number of complicated deliveries: 38
Obstetric fistula case load: 11 cases have been admitted with 2 RVF repairs. Other cases of VVF were referred to Katete for repair.
Medical Staff: 5 doctors

Chipata General hospital. Visited Monday November 24, 2003.
Size: No records
Provenance of Clients: From Chipata town and surrounding villages.

Hospital attendance of maternity cases:
Number of deliveries: 4 257 between 2002- November 2003.
Number of Cesarean sections: 457. Emergence and elective hysterectomies are performed.
Number of maternal deaths: 47 during the same period.
Number of complicated deliveries: 457
Obstetric fistula case load: 25 cases, referred to Katete for repair.
Medical Staff 6 doctors
Barriers no specialist

Appendix 2
Obstetric Fistulae. Situation analysis
<u>Hospital</u>

INSTRUMENT 1

PROVINCE:

HOSPITAL:

BED CAPACITY:

Designation of Staff interviewed. ☐ Nurse ☐ Doctor ☐ Specialist

Q1. What is the hospital attendance of pregnant women attending hospital? ☐

Q2. Number of deliveries per annum (Yr 2002) ☐

Q.2b Number of "Born Before Admission" (BBA) deliveries (yr 2002) ☐

Q3. Number of maternal deaths (yr 2002) ☐

Q4. Number of complicated deliveries
(vacuum extraction, Forceps, obstructed labour) ☐

Q5. Number of caesarean section (Yr 2002) ☐

Q6. Number of referred cases of obstructed labour to this hospital (Yr 2002) ☐

Q7. Number of obstetric fistulae seen or referred to this hospital ☐

Q8. Number of obstetric Fistula repaired in the hospital (Yr 2002 & 2003 Nov) ☐

Q9. Number of VVF or Rectovaginal referred to higher-level facility ☐

10. Number of beds in labour ward ☐

11. Number of Midwives or nurses in the facility/hospital. ☐

12. Number of Midwives in the Facility/Hospital ☐

13. Are there any written guidelines for management of

- ☐ Obstructed labour
- ☐ Post partum haemorrhage
- ☐ Ante partum haemorrhage
- ☐ Eclamptic patient
- ☐ Unconscious pregnant patient

14. How much do patients pay for

- ☐ Antenatal
- ☐ Normal delivery
- ☐ Caesarean section
- ☐ None

15. What other reproductive health services are offered in this hospital

- ☐ Family planning
- ☐ Cervical cancer screening
- ☐ Post abortion care
- ☐ Permanent Contraception
- ☐ STI clinic
- ☐ Youth Friendly Corner

INFRASTRUCTURE, EQUIPMENT

SUPPLIES, STAFFING AT EACH FACILITY
CHECK LIST

INSTRUMENT 2

Q1. Caesarean section set complete and ready to use.

☐ 0 ☐ 1 ☐ 2+

Q2. Hysterectomy set, complete and ready to use

☐ 0 ☐ 1 ☐ 2+

Q3. Anaesthetic machine - functional.

☐ No ☐ Yes

Q4. Theatre - functional

☐ No ☐ Yes

Q5. Consumables (drugs, syringes, gloves etc)

☐ nil ☐ erratic ☐ adequate

Q6. Gynae ward beds

☐ nil ☐ 2 ☐ combined Female ward

Q7. Number of staff

☐ Nurses ☐ Doctors ☐ Anaesthetist ☐ Physiotherapist ☐ Laboratory

Q8. Staff trained in cesarean section

Nil ☐ Nu ☐

Q9. Staff trained in VVF/RVF Obstetric fistulae repairs

☐ Nil ☐ number

Q10. Any educational materials on complicated pregnancy:

- Pamphlets
- Posters
- Audio Visual Aids
- Media campaign

INSTRUMENT 3

Guide for Community Focus group discussion

- Introduction of researcher, Interviewee
- *Explain purpose of interview*
- Allow for questions from community

Q1. Have there been any difficulty at delivery in your village or what are some of the things that can go wrong when a woman gives birth?

Q2. What about vesicle vaginal fistula

- probe into causes
- probe what they do with the girl with VVF/RVF
- probe into prevention of VVF
- probe into knowledge of repair of VVF
- do you know of any person/relative with obstetric fistula

Q3. Attitude of community to victim

- outcast
- marriage
- school

Q4. What should you do or we do to solve this problem.

Q5. Where and how can we get resources to improve obstetric care in your community?

Q6. Where would the community find transport for any obstetric complication? What happens if there is no transport? Who delivers your baby?

Q7. How do the health workers treat you when you go to the facility?

Q8. What prevents you from servicing attention (in labour) at health facilities.

INSTRUMENT 4 **QUESTIONNAIRE**

HEALTH WORKER

Q1. Title:-

Q2. Duration in the Job

Q3. How long have you been practicing midwifery?

Q5. What do you think is the community attitude towards antenatal care?

Q6. What are the consequences of obstructed labour?

death sepsis VVF/RVF ruptured uterus

Q7. How do you treat a woman with obstructed labour?

syntocinon vacuum Caesar + 7 days catheter IV fluids antibiotics Caesar catheter refer

Q8. How do you diagnose obstetric fistula?

history + leakage of urine EUA

Q9. How do you prevent obstetric fistula?

use of partogram timely Caesar prolonged catheterization trained attendant during labour

Q10. How do you manage a case of VVF/RVF

repair *referral* *send home* reassurance *prolonged catheterisation*

Q11. If you repair them what is your success rate

zero 50% > 50%

Q12. Have you been trained to repair VVF? Yes/No

Q13. If you repair VVF/RVF what suture material do you use

Silk Vicryl Catgut Nylon Anything available

Q14. What do you do with failed repairs

refer to UTH gynae refer to urology no recorded cases rehabilitation physiotherapy home

Q15. If you are not repairing VVF/RVF why?

no skills no facilities lack of consumables

Disappointing results Not profitable

FOR NURSES

Title:-

Duration of practice: ………………..Yrs

Q16. Have you nursed a VVF/RVF patient after repair

☐ Yes ☐ No

Q17. How did you manage the post operative care of a VVF patient? If yes.

☐ watch catheter blockage ☐ plenty oral fluids ☐ immobilize ☐ antibiotics

Q18. Do you feel you need training in VVF patient care Yes / No

Q19. What would you do if the catheter is blocked on VVF repaired patient

☐ Remove Catheter ☐ Call the Doctor ☐ Flash Catheter ☐ Supra pubic puncture

Q20. What do you think cause obstetric fistula?

____

Q21. What do you do with patients with obstructed labour?

____

APPENDIX 3

SUMMARY OF HOSPITAL'S MATERNAL SERVICES IN 2002 (N = 38)

Name of hospital	No. of Beds	Maternity admissions	Deliveries	BBA	Complicated deliveries	Caesarean sections	VVF/ RVF	Repair of VVF/RVF	Maternal deaths	Doctor in VVF
CENTRAL PROVINCE										
Kabwe General	399	2749	2749	00	00	365	00	Refer	40	
Mumbwa District	76	1887	1548	00	132	47	00	Refer	14	
Nangoma Mission	30	1094	943	00	28	0	0	Refer	0	0
Serenje district	64	586	430		0	0	4	Refer	0	
COPPERBELT PRONVINCE										
Kitwe Central	628	6144	5895	75	174	376	00	Refer	8	
Mpongwe Mission	90	864	704		72	25	3	Refer	4	
Ndola Central	851	4255	2324	111	57	395	00	Refer	5	
St. Theresa	140	3381	629		65	35	4	Refer	4	
EASTERN PROVINCE										
Chipata General	463	4672	4257	00	281	457	25	Refer	47	0
Minga Mission	136	511	391	7	69	10	2	Refer	7	0
Mwami Mission	210	1479	1132	39	38	156	11	Refer	5	0
Nyanje Mission	120	1719	1502	46	316	72	2	Refer	5	0
Nyimba District	72	984	787	5	20	0	0	Refer	2	0
Petauke District	121	1143	916	39	64	86	7	Refer	10	1
St. Francis - Katete	360	1928	1688	17	426	334	52		20	1
Name of hospital	**No. of**	**Maternity**	**Deliveries**	**BBA**	**Complicated**	**Caesarean**	**VVF/**	**Repair of**	**Maternal**	**Doctor**

	Beds	admissions			deliveries	sections	RVF	VVF/RVF	deaths	in VVF
LUAPULA PROVINCE										
Kawambwa District	38	519	353	00	63	18	00	4	4	
Lubwe Mission	116	897	360	00	74	65	00	Refer	6	
Mansa General	300	1815	1498	00	244	142	00	Refer	12	
LUSAKA PROVINCE										
Mpanshya St. Luke	53	163	117	00	15	1	0	Refer	1	0
UTH										
NORTHERN PROVINCE										
Chilonga	176	593	482		108	90	16	Refer	3	
Chilubula	75	324	208					Refer	0	
Kasama General	420	1946	1287	118	331	251	00	Refer	21	
Luwingu District	81	878	609	00	43	26	10	Refer	2	
NORTH WESTERN PROVINCE										
Meheba Refugee Camp	21	79	153	00	00	00	00	00	0	
Mukinge Mission	200	1730	1551	38	32	68	00	Refer		
Solwezi General	251	1921	1374	00	42	108	Many	Not referred		

-Name of hospital	No. of	Maternity	Deliveries	BBA	Complicated	Caesarean	VVF/	Repair of	Maternal	Doctor

	Beds	admissions			deliveries	sections	RVF	VVF/RVF	deaths	in VVF
SOUTHERN PROVINCE										
Chikankata Mission	200	817	690	60	45	53	1	Refer	7	
Choma General	206	2387	2041	00	291	155	11	Refer	9	
Livingstone General		1577	1380	8	109	111	15	Refer	15	
Mazabuka District	169	2913	2588	104	177	143	2	Refer	23	
Monze Mission	274	3478	3235	00	00	245	137		20	1
Zimba Mission	106	1453	1258	00	70	70	2	Refer	7	
WESTERN PROVINCE										
Kaoma District	80	1856	1627	00	00	13	5	Refer	4	0
Lewanika General	255	1924	1611	101	319	139	2	Refer	17	0
Luampa Mission	108	1158	994	00	00	19	1	Refer	1	0
Mangango Mission	70	642	449	31	38	11	0	Refer	1	0
Mwandi Mission	82	501	367	00	13	13	2	Refer	0	0
Yuka Mission	74	487	354	10	10	6	3	Refer	1	
Total	8006	67146	51275	771	3734	4037	302		325	4