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Africa Initiatives

Addressing Obstetric and Neonatal Complications in Africa from Community and Facility Perspectives

Descriptive Reports from Ghana, Malawi, and Uganda

MotherCare™

USAID

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INTRODUCTION

The World Health Organization (WHO) estimates that approximately 600,000 women die from obstetric complications each year (WHO/UNICEF, 1996) Between 10 and 29 percent of all deaths of women in their reproductive years in developing countries are due to obstetric complications or diseases aggravated by pregnancy In Latin America, one in ten women between the ages of 15 and 44 die from maternal causes, in Asia, where most of the reproductive women live, the rate is nearly one in four in this age group (excluding China), and in sub-Saharan Africa nearly one in every three women will die from childbearing (WHO, 1997)

At the Global Safe Motherhood Conference, Nairobi, 1987, WHO advocated the use of Essential Obstetric Care (EOC) to reduce these deaths Policy makers from 39 countries attending this conference rallied behind this recommendation in an attempt to reduce maternal mortalities and morbidities in their countries Over the last ten years, governments and policy makers in the developing world have put safe motherhood on their national agenda, investing country and donor resources to tackle the problems related to maternal and neonatal mortality and morbidity Now, 11 years later, we see little discernable difference in the incidence of maternal mortalities and morbidities

According to Dr Marjorie Koblinsky,[1] safe motherhood is a complex issue with no evidence that a single intervention can "solve" maternal mortality Rather, as shown in developed countries, the complexity demands a health-systems approach involving all levels—from the community to the district to the region Is this system too costly to implement? Not when considering the enormous benefit gained in saving and improving the lives of mothers and babies Preliminary results from a cost study of the public sector in Bolivia[2] show that the greatest expense is the cost of improving services for normal pregnancy and birthing Results also show that the time needed for training in EOC—a step which cannot be bypassed—is only a fraction of the cost needed for the provision of quality care for normal birthing

To further explore this debate, the Africa Bureau of USAID funded MotherCare to explore what was happening in select African counties where there has been a strong political will, articulated in national policies and translated into activities that include both the community and medical health care systems To that end, MotherCare asked health representatives from Ghana, Malawi and Uganda to (1) describe, within their political environment, the activities and interventions which have been self-generated by communities to overcome the barriers of access to quality maternity care, (2) assess the capacity of health centers and hospitals to provide quality Essential Obstetric Care for those who demand these services, and (3) describe linkages and partnerships between the community and providers

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[1] *Safe Motherhood Ten Years Later*, 1997

[2] MotherCare Bolivia, 1997

The country teams accepted this challenge with a spirit of pride and a determined will All three country teams (typically including an obstetrician, a midwife, a social service expert, a health economist or someone with relevant skills, and a member of an NGO/Women's group) conducted both community and facility assessments While no country can describe a "fully successful district model" which encompasses strong interventions in the community and the facility, they have each found interventions along the "Pathway to Maternal Survival" which appear to make a difference

The country assessment reports described in this document are descriptive and qualitative, the time was too short to do a quantitative study The teams have described interventions which appear to be promising but will need to be studied further Even so, these early descriptions are hopeful and helpful—and worthy of expansion to other areas and other countries

MotherCare and the Country Teams have also been collaborating with the Partnerships for Health Reform Project (PHR) in conducting EOC cost studies in each of the countries These reports are not included in this document but will be distributed under separate cover

ACKNOWLEDGEMENT

MotherCare/JSI and USAID/Africa Bureau commend the Ministries of Health in the governments of Ghana, Malawi and Uganda for their commitment to and investment in the promotion of safe motherhood and healthy mothers and babies We also wish to congratulate the Africa Initiative country teams from these three countries for their earnest efforts to assess the status of safe motherhood activities in their countries In a relatively short period of time (November 1997 to August 1998), these teams have completed facility-based assessments to describe the level of maternal and newborn services, particularly in providing essential obstetric care They have also conducted assessments in the community, looking for community-generated activities which have enabled women and their families to overcome barriers to the access of quality services From the community to the district levels, they have found interventions which appear to make a difference in increasing both the quality of and access to services As a team, we believe these activities and interventions can be expanded to other areas and replicated in other countries

We wish to recognize and extend particular appreciation to the Country Team Members

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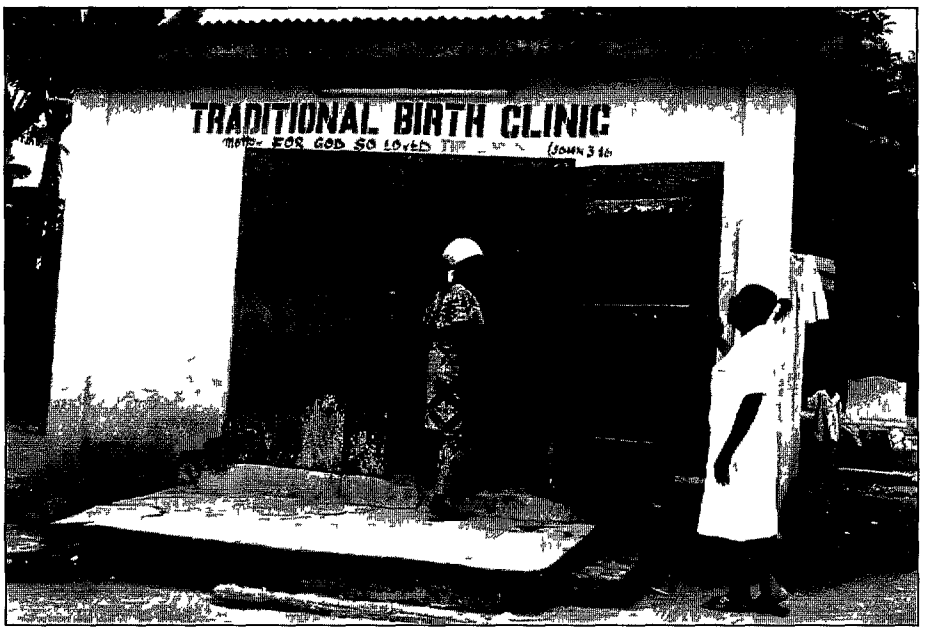
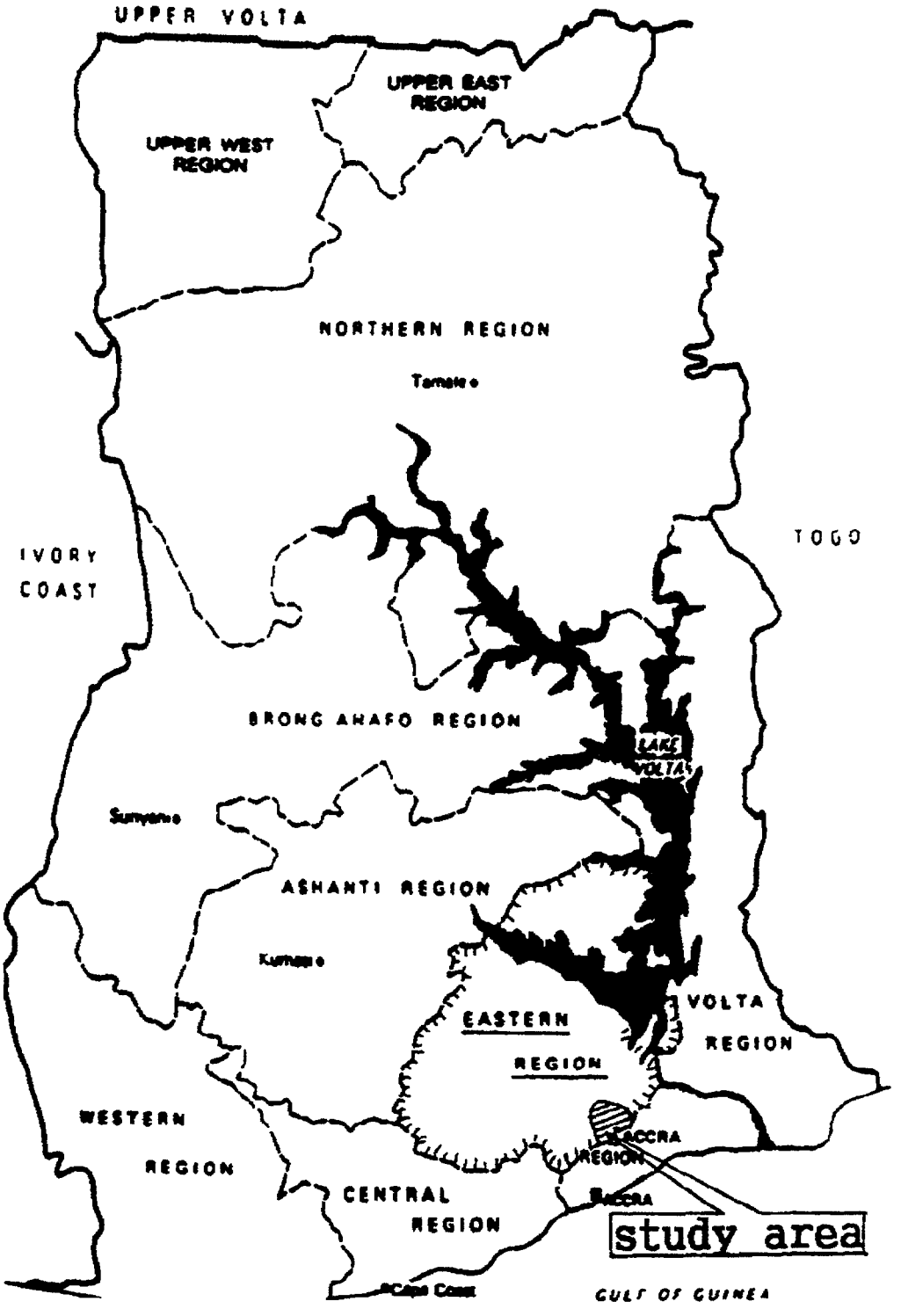
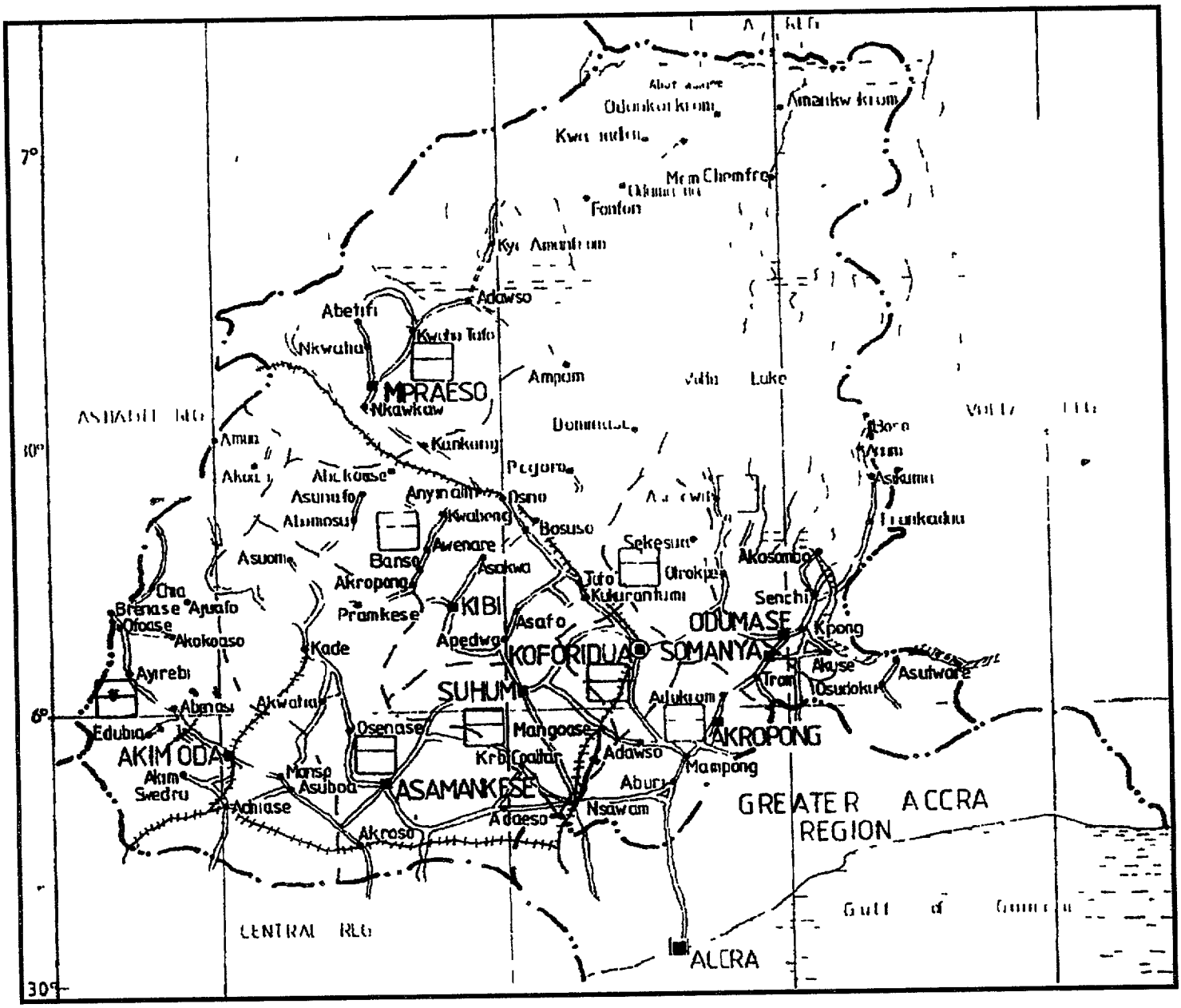
Report from Ghana



Map of Ghana Showing Location of the Eastern Region and the Study Area



Map of the Eastern Region



EXECUTIVE SUMMARY

Ghana is one of the countries that participated in the conference which witnessed the launching of Global Safe Motherhood Initiative, an initiative aimed at reducing—by significant margins—complications and death due to problems associated with pregnancy and childbirth Ten years after the launching of this global initiative, another conference, held in Columbo, Sri Lanka, reviewed progress The outcome of the Sri Lanka conference revealed that significant progress has been made in expanding and improving maternal health services at the global level

This assessment is a follow-up to the Colombo conference Efforts were made in the Eastern Region of Ghana to assess the impact of intensified activities aimed at improving maternal health through collaborative research work The study set out to assess and describe the Safe Motherhood Programme in Ghana in order to identify methods for providing essential obstetric care in health-care facilities within various communities

The key methods of data collection were (1) an extensive literature review of policy and research documents and service records, (2) interviews with service providers (doctors, midwives, nurses, TBAs), (3) focus group discussions with community groups, and (4) an inventory of health services and equipment

Data was gathered in selected hospitals, health centers and clinics and from individuals and community groups The study found that the country model for ensuring safe motherhood is largely incorporated in the Maternal and Child Health Programme, family planning services, and child survival strategies, via a three-tier system, that is, at the community, sub-district and district levels The regional and national levels provide technical resources and supervisory and monitoring support

Traditional Birth Attendants (TBAs) form the widest network of community-based health workers, with uniform training and supervision provided by the Ministry of Health The study shows that the TBAs play a useful role as important links between the community and the formal health system and serve as the first point of contact between the two

The result of the study also shows that midwives in public health centers and private maternity homes provide maternity care They exert a powerful and positive influence in the community They provide the first supervisory and monitoring support for TBAs, as well as the first referral point on maternity, immunization and family planning services

District hospitals are the focus of clinical care within the district These are staffed with general practitioners, nurses and other paramedical staff whose activities, preparations and training make them serve as the final referral point in the district and who also supervise maternity, child survival and family planning services in their respective catchment areas

Key findings from the study include the following

Maternal newborn and neonatal statistics indicate a steady increase in coverage over the past few years

Information, education and communication on safe motherhood activities have led to increased knowledge and positive attitudes that are conducive to improving maternal health

The involvement and active participation of communities in safe motherhood activities have led to successful cooperation and collaboration with the formal health system This has resulted in innovative community initiatives and community-owned projects The PMM project is a classic example

The decentralization of health system care takes place through the delegation of responsibilities (e g , training in safe motherhood clinical skills)

Results of the inventory carried out in selected health system facilities indicate that the essential equipment and supplies for emergency obstetric care do exist

1 The existence of clear policy documents serve as useful guides

2 Operations research and regular training of service providers are important elements of the initiatives

3 Clearly defined referral systems and the active involvement of client communities are pre-requisites of any successful safe motherhood program

Ten years after it was launched, the Safe Motherhood Initiative has made steady progress and significant gains, but it is not likely to achieve its glamorous objective of halving the 1987 maternal mortality ratio by the year 2000 The urgency in addressing the issues of accessability to maternal health services, improvement of quality of care, and the need to generate demand remain key strategies that should be pursued further

COUNTRY PROFILE

On the West Coast of Africa lies the Republic of Ghana, with a land area of 238,537 square kilometers The country is bounded on the west by Cote d'Ivoire, on the north by Burkina Faso, on the east by the Republic of Togo, and on the south by the Atlantic Ocean, which washes a 560-kilometer stretch of coastline Ghana can be roughly divided into three vegetation zones

(1) coastal savannah characterized by shrubs and mangrove swamps,

(2) a forest belt that gradually thins out as one moves northwards, and

(3) a dry savannah

Ghana has ten administrative regions, which are further divided into 110 districts, the basic units of political administration

Evidence from the third Ghana Living Standards Survey (GLSS-3) indicates that nearly two-thirds (64 percent) of the heads of household are Christians, the rest are Muslims, practitioners of traditional religion, or adherents of various smaller religious entities

Ghana's economy is mixed, consisting mainly of a small, capital-intensive, modern sector involving mining and a few manufacturing establishments, a growing informal sector of small businessmen, artisans and technicians, and a large, traditional agricultural sector made up mostly of small-scale peasant farmers The agricultural sector alone absorbs three-fifths of the country's labor force and accounts for more than half (51 percent) of the Gross Domestic Product (GDP)

The country's mid-year population for 1997 is estimated at over 17 million, with a population growth rate estimated to lie within the 2 8 to 3 0 percent range per annum Reflecting this high rate of growth is the population's age structure 48 percent is less than 15 years old, and only 3 5 percent 65 years old or older The total fertility rate has decreased from 6 4 in the mid-1980s to 5 5 in the 1990s

POPULATION POLICY

Ghana's population policy, enunciated in 1969 and revised in the mid-1990s, seeks to

- ▼ Ensure systematic integration of population and family planning issues in all aspects of development planning and programming
- ▼ Provide information and education on the value of small family size and responsible parenthood

▼ Provide accessibility to, and ensure affordability of, family planning services for all couples and individuals wanting to regulate their fertility

▼ Reduce further the high rates of morbidity and mortality and promote the health and welfare of mothers and children

▼ Improve demographic data collection, processing, analysis, dissemination and research on population and development on a regular basis

▼ Achieve a more balanced distribution of the population between rural and urban areas, as well as between regions

▼ Promote sound environmental management

▼ Address the needs of women, youth, the aged, and persons with disabilities

HEALTH POLICY AND PROGRAMS

The developmental goals of Ghana are geared towards improving the of quality of life of the populace However, the welfare of the population continues to be threatened by a number of factors Among them are the high fertility rate and high maternal and infant morbidity and mortality rates, which have made the attainment of these national development goals more difficult

To address this problem, National Policy Guidelines, Standards and Protocols for reproductive health service delivery have been formulated The policy guidelines and standards presented in the document reflect the current national goals and priorities as stipulated by the Ministry of Health within the framework of the national population policy The guidelines and standards also address the gaps and inconsistencies currently interfering with the provision of reproductive health services and training for service improvement They provide a set of basic expectations and minimum acceptable levels of service provision and training

Health services in Ghana are provided by the government, non-governmental organizations, and the private sector These services are organized at the community, sub-district, district, regional and national levels in such a way that services provided at the community, sub-district and district levels adequately meet the basic health needs of the majority of people, thus constituting the primary health care delivery system This arrangement ensures universal access to basic reproductive health care and makes health care more community- or consumer-oriented and less provider dependent

The government of Ghana is committed to the goal of providing health care for all its citizens by the year 2001 through this decentralized Primary Health Care (PHC) delivery system The strategy in attaining the goals of the PHC is to concentrate efforts in the following priority areas

- ❒ Maternal and Child Care
- ❒ Family Planning
- ❒ Nutrition
- ❒ Control of Diarrheal Diseases
- ❒ Malarial Control
- ❒ Immunization Programs
- ❒ Health Education
- ❒ Sexually Transmitted Diseases and HIV/AIDS

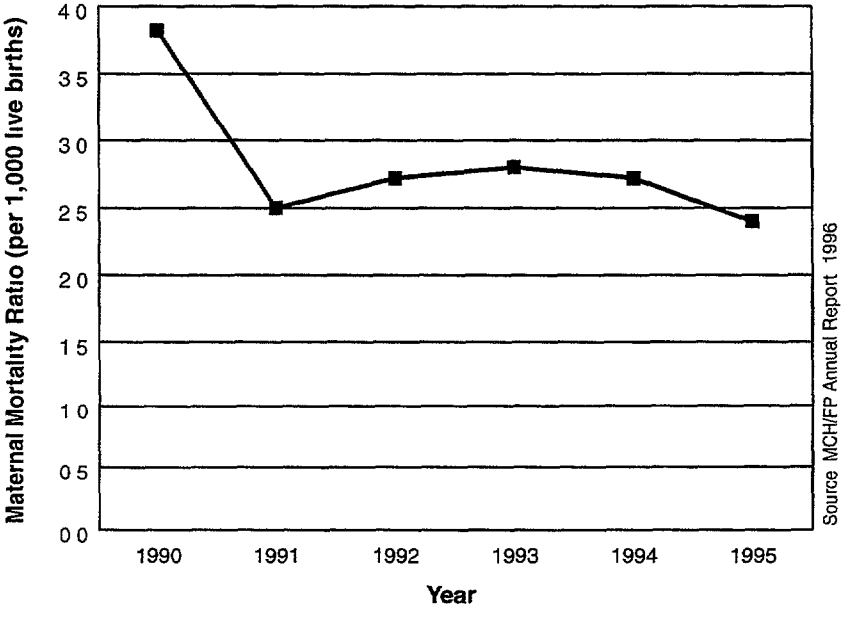
Some of the Ministry of Health's objectives relating directly to maternal and child health to be realized by the year 2001 include

- ▼ Increasing the prevalence of family planning methods by 25 percent
- ▼ Increasing coverage of antenatal care to 90 percent
- ▼ Intensifying the breastfeeding campaign

MATERNAL MORTALITY IN GHANA

The annual Ministry of Health reports indicate the maternal mortality ratio, based on institutional data, is 2 14 per 1000 live births in 1995 Information on maternal morbidity is not reliable

Figure 1 Maternal Mortality Trends, 1990-95, Ghana



Institutional-based data reported from the regions show regional variations The highest mortality ratio of 480 per 100,000 was recorded by Upper East Region and the lowest, 90 per 100,000, by the Greater Accra Region Since these ratios are still unacceptably high, all efforts are being made to lower them

The major causes of maternal deaths are hemorrhage, sepsis, obstructed labor, pregnancy-induced hypertension, and unsafe abortion Recent studies carried out in Ghana show that women die because delays in receiving emergency obstetric care occur at critical points

(1) at home, in delaying the decision to seek emergency treatment,

(2) in reaching an institution that can provide emergency obstetrical care, and/or

(3) in receiving effective emergency obstetrical care at the referral institution

THE SAFE MOTHERHOOD INITIATIVE

OVERVIEW

The Global Safe Motherhood Initiative was launched in 1987 in Nairobi, Kenya, and Ghana was one of the countries represented at the conference The once seriously neglected problem of deaths from complications of pregnancy and childbirth was discussed, and an action plan developed for implementation by all countries—with particular focus on the developing countries In 1997, an international review meeting held in Colombo, Sri Lanka, portrayed the significant progress made in expanding and improving maternal health services

The main target set by the Safe Motherhood Initiative was a reduction in maternal deaths by 50 percent by the year 2000 Three-quarters of maternal deaths result from the direct obstetrical complications of hemorrhage, sepsis, obstructed labor, hypertensive disorders of pregnancy, and induced abortion An ideal safe motherhood program aims first to prevent or reduce these five causes of mortality (see Box 1)

BOX 1 Elements of a Safe Motherhood Program

Information, Education and Communication strategy aimed at

❒ increasing appropriate and timely use of services for family planning prenatal delivery and postpartum care

❒ increasing awareness of danger signs during the maternal period

❒ enhancing the counseling skills of providers to address women's concerns and needs

❒ mobilizing communities for transport of women with obstetrical complications

❒ community-based family planning and obstetrics with trained staff (nurse/midwives) or outreach by such staff to provide family planning and management of unwanted pregnancies

❒ case detection of complications

❒ prenatal screening based on previous obstetric history and present medical problems

❒ normal delivery

❒ post-abortion care

❒ obstetric first aid (e g sedatives for early eclampsia, skills for manual removal of the placenta)

First referral-level facilities with 24 or more beds to provide

❒ surgical obstetrics

❒ anaesthesia

❒ medical treatment for sepsis shock eclampsia, etc

❒ blood replacement

❒ manual procedures and monitoring labor (e g vacuum aspiration) partograph

❒ management of women at high risk specifically those who have had previous operative delivery and those at risk of obstructed labor

❒ family planning support including surgical methods for men and women

❒ neonatal special care

Effective referral with

❒ a means of communicating between staff at the peripheral level

❒ a means of transporting complicated obstetrical cases to referral services

❒ a means of coordinating care among the levels of health provision

❒ a means of ensuring quality of care at all levels (e g a confidential inquiry of all maternal and prenatal deaths to determine avoidable problems identified from the community through to the referral facility level)

Interventions to reduce maternal mortality and morbidity fall into three main categories

1 Prevention of unwanted pregnancies
2 Avoidance of obstetric complications
3 Reduction in case-fatality once serious complications have arisen

These interventions are implicit in the so-called "five pillars" of safe motherhood (i e , antenatal care, supervised deliveries, postnatal care, family planning, and prevention and management of abortion complications), the foundations of which are primary health care and greater equity for women

REPRODUCTIVE HEALTH

Ghana's Reproductive Health Policy states that *reproductive health care is a constellation of preventive, curative and promotional services for the improvement of the health and well-being of the population and, especially, mothers, children and adolescents*

Box 2 Components of Reproductive Health Care Services

❒ Safe motherhood, including antenatal, safe delivery and postnatal care

❒ Family planning

❒ Prevention and management of unsafe abortion and post-abortion care

❒ Prevention and treatment of Reproductive Tract Infections (RTI), including sexually transmitted diseases (STDs), HIV/AIDS

❒ Prevention and treatment of infertility

❒ Management of cancers of the reproductive system, including breast, testicular and prostatic cancers

❒ Prevention and management of cervical cancers

❒ Responding to concerns about menopause

❒ Discouragement of harmful traditional practices that affect the reproductive health of men and women, such as female genital mutilation

❒ Information and counseling on human sexuality, responsible sexual behavior, responsible parenthood, pre-conceptional and sexual health

Within the context of primary health care, reproductive health services are being integrated and made accessible to all women and children in Ghana The national objectives of reproductive health care are to

(1) decrease the maternal mortality ratio by 50 percent from the present 214 per 100,000 live births by the year 2001,

(2) increase birth intervals to an average of 3 years by the year 2001,

(3) decrease infant mortality rates from 66 per 1,000 live births to 50 per 1,000 live births by the year 2001, and

(4) increase the modern contraceptive prevalence rate by 25 percent

The strategy for achieving these objectives is based on the principles of primary health care, including community-based activities with full community participation, health education, appropriate and affordable technology, inter- and intra-sectoral coordination, and outreach activities

THE SAFE MOTHERHOOD INITIATIVE

The Safe Motherhood Initiative Conference in Nairobi in 1987 resulted in a dramatic increase in attention to the problem of maternal mortality in Ghana For example, in 1987 a safe motherhood operations research project in 12 districts was started Also started that year was an operations research project on TBAs Since 1988, the Prevention of Maternal Mortality Network Programme (PMM) has been operating in Ghana, conducting research in two districts into hemorrhage and obstructed labor as causes of maternal death Numerous other initiatives by the public and private sectors were started all over the country in an attempt to address maternal mortality

Program of Action

Specific actions carried out at the country level include the following

➜ The Life-Saving Skills (LSS) Programme instituted in 1990 to equip midwives with the knowledge and skills to manage obstetric emergencies

➜ The formation of the National Safe Motherhood Task Force in 1993, charged with the responsibility of producing clinical and management protocols and health education guidelines

➜ The training of public health practitioners and opinion leaders in the use of the health education guidelines

➜ Two national consultative meetings on safe motherhood held in 1993 and 1995 to address the issue of maternal health

➜ The extension to other districts of the Prevention of Maternal Mortality Network Programme, which focuses on research into hemorrhage and obstructed labor as causes of maternal deaths

➜ On-going training and refresher training of TBAs at the community level in all ten regions of the country

➜ The decentralization of emergency obstetric care to districts and subdistricts

➜ On-going training of non-physicians in post-abortion care

➜ A Ministry of Health system to ensure that health facilities have the supplies and equipment they need

➜ The development by the Ministry of Health of standards, being disseminated nationwide, to improve and support health delivery

NOTE The Ministry's health policy also aims at ensuring that women receive the appropriate services they need, for example, all women are entitled to free antenatal care at government health facilities

COUNTRY MODEL FOR ENSURING SAFE MOTHERHOOD

The Government of Ghana defines its maternal and child health policy as follows

> *Maternal and Child Health represents the sum total of services required to promote and maintain the health of women and children in Ghana Maternal and Child Health Services therefore incorporate all Safe Motherhood, Child Survival and Family Planning Strategies*

Thus, safe motherhood is seen as an integral part of the national maternal and child health/family planning service, which is, in turn an integral part of the national health service Therefore, the country model adopted by Ghana for preventing maternal mortality and morbidity follows the three-tier system of Primary Health Care, with specific services provided at the community, sub-district and district levels, with regional and national supporting systems

Community Level

Historically, TBAs have provided services to a large percentage of women and children in Ghana and are valuable links between the communities and the health system The Ministry of Health has included them in the delivery of maternal and child health services

To provide a uniform training program, a National Traditional Birth Attendant (NTBA) program, based on the findings of an operations research project in twelve districts, was established in 1987 The program's purpose was to establish an effective training and supervision structure linking the health system and the TBAs To establish rapport and good working relations and to facilitate team work, midwives from the districts and sub-districts were involved in the selection of TBAs for training and in the training itself

A qualitative study of the program after implementation shows the usefulness of training TBAs However, supervision, community mobilization, and refresher training courses are needed if there is to be linkage with the health care delivery system

Sub-district Level

The key service provider in maternity care at the sub-district level or health center is the midwife She exerts a powerful and positive influence on the community, in order to create an environment which is supportive of women and to educate women to enhance their status As the first point of referral in some communities, she trains and supervises TBAs and provides essential obstetric and neonatal care Midwives educate the community on the prevention of unwanted pregnancies and of STDs (including HIV/AIDS), as well as on the dangers of unsafe abortion They advise on the need for immunization and appropriate nutrition to increase child survival rates Family planning counseling and services also form an integral part of the services midwives provide

District Level

The focus of clinical care at the district level is the district hospital It serves as the referral point for the health centers within the district The physician has a crucial role at the district hospital in providing essential obstetric care So that physicians can fulfill this role, pre-service training and rotation of young physicians are designed in such a way as to enable them to acquire the knowledge and skills relevant to their practice before being posted to the district hospital

Regional/National Level

Obstetricians are involved in advocacy, planning and implementation of national programs in order to improve women's health and well-being In regional and teaching hospitals, obstetrician-gynecologists provide specialist care, supervision, and support to the district hospitals They are involved in the in-service, pre-service and post-graduate training of midwives and physicians and in research in the field of reproductive health

ASSESSMENT METHODOLOGY

To assess the current situation in Ghana, two districts were selected from the Eastern Region These districts were selected because they were accessible, they included a good mix of governmental, non-governmental and private service providers, and some safe motherhood activities had been carried out in them (See Ghana Assessment Tool in Appendix I)

RATIONALE FOR THE ASSESSMENT

The year 1997 marked the tenth anniversary of the launching of the Safe Motherhood Initiative, so participating countries are now at a stage where they are assessing the situation and deciding the way forward Such an assessment contributes to the body of knowledge for the reduction of maternal mortality and morbidity and helps formulate strategies for the next decade of the Safe Motherhood Initiative, particularly with respect to models for providing essential obstetric care in health system facilities and within the community

Specific objectives of this assessment were to

- ❒ describe the current state of the Safe Motherhood Initiative in Ghana
- ❒ assess maternal services at the district, sub-district and community level
- ❒ identify safe motherhood strategies which have been effective
- ❒ share this body of knowledge with the international community

METHODOLOGY

The methods used to collect data for the assessment were (1) literature reviews, (2) interviews and (3) inventories

Reviews were made of

- policy documents on safe motherhood
- research findings on safe motherhood and related issues, e g , the Ghana Demographic and Health Survey
- records
- reports on maternal and child health and family planning at national, regional, district and facility levels
- other reports on facilities providing maternity services, e g , hospital and maternity home records

Interviews were conducted with

- supervisors
- trainers
- service providers (midwives, doctors, TBAs, community members)
- policy makers
- focus groups composed of community members

Inventories were taken of

- facilities
- services
- equipment

ASSESSMENT FINDINGS

PROFILES OF ASSESSMENT SITES

Kwahu South District

Kwahu South District covers an area of 1,544 square kilometers and shares boundaries with East Akim District to the south, the Volta Lake, the Kwahu North (Afram Plains) and Fanteakwa Districts to the east, the Asante Akim District to the north, and Birim North District to the west Topographically, the Kwahu South District is divided into two distinct parts the Kwahu Scarp rising up to 2,580 feet above sea level, and the low-lying portion

With a population of about 288,511 and a population growth rate of 2 9 percent, Kwahu South is the most populous district in the Eastern Region It has three hospitals (mission, private and government) and five public health centers, eight private maternity homes, and traditional birth attendants Kwahu South's maternal, newborn and neonatal statistics covering 1994 to 1997 are shown in Tables 1 and 2

Table 1 Maternal Health Statistics (1994 to 1997) - Percentages of Coverage, Kwahu South District (Source *Kwahu South District Annual Report, 1997*)

INDICATOR	COVERAGE 1997	COVERAGE 1996	COVERAGE 1995	COVERAGE 1994
Antenatal	84	86	81 3*	92 2
Supervised Deliveries	46	42 4	43 9	47 8
Postnatal	44	44	48 4	57 8
Family Planning	24 3	29 2	17 6	7 1
Maternal Mortality Ratio	340/100,000	220/100,000	104/100,000	196/100,000

NOTE Population figures are not reliable since they are estimates from the 1984 census

*The exclusion of double registration in calculation of antenatal coverage may account for the apparent decrease

Table 2 Newborn and Neonatal Statistics (1995-1997) - Kwahu South District

INDICATOR	1997	1996	1995
% still birth	3 3	4 2	1 8
% low birth weight	11 4	12 2	6 0

Akwapim South District

This district covers an area of 410 square kilometers and shares boundaries with the Akwapim North District in the north, West Akim and Suhum Kraboa Districts in the west, and Ga District (Greater Accra Region) in the south and east The district has a population of about 132,093 Relevant statistics for Akwapim South District are shown in Tables 3 and 4

Table 3 Levels of Safe Motherhood Indicators - Akwapim South District ***(Source Akwapim South District Annual Report, 1997)***

INDICATORS	COVERAGE 1997	COVERAGE 1996	COVERAGE 1995	COVERAGE 1994
Supervised Delivery	38 %	39 %	38%	36 %
Maternal Mortality Ratio (Institutional Based)	900/100,000	630/100,000	1000/100,000	1000/100,000
Family Planning Acceptors	1,394		5,238	2,524
Postnatal	22 %	28 %	26 %	38 %

Table 4 Newborn and Neonatal Statistics 1994 - 1997) - Akwapim, South District

INDICATORS	1997	1996	1995	1994
% still birth	3	3 6	4	5
% low birth rate	7	8 2	4 4	5 4

SAFE MOTHERHOOD ACTIVITIES

Kwahu South District

In 1992-93, a community-designed pilot project on family planning Information, Education, and Communication was carried out In 1994 the safe motherhood clinical management protocols and health education guidelines were field-tested In 1996, midwives and doctors participated in the MotherCare operations research project on post-abortion care with a community education component The impact of these programs will be discussed later in the report

Akwapim South District

The most significant safe motherhood activities in this district were carried out by the PMM network, an operational research program set up with financial and technical assistance from Carnegie Corporation of New York and Columbia University The purpose of PMM is to help reduce the unacceptably high rate of maternal mortality in three West African countries Ghana, Nigeria and Sierra Leone Two teams made up of gynecologists, social scientists, public health physicians, and nurse/midwives operated in Accra and Kumasi, the two major cities of Ghana

A pre- and post-intervention study carried out in this district revealed the following

➔In 1988, the PMM team and the Nsawam District Health Management Team (DHMT) introduced the idea of a health post to the chief and people of Pakro The following year, the PMM team, with permission from the chief of the town and assistance from the Ministry of Health, identified an abandoned cocoa warehouse, which then was renovated to accommodate the proposed health post

➔The entire rehabilitation was left in the hands of the community This strategy was adopted to ensure active community participation, a sense of community ownership, and sustainability

A seven-member village committee was set up for the rehabilitation, with the PMM team facilitating The committee's main task was to mobilize local resources (i e , cash, labor and materials) To support these community efforts, the PMM team and the DHMT solicited assistance from other sources, including UNICEF, Overseas Development Agency, UNFPA, Adventist Development Relief Agency, and Child Help Work

In January 1991, the health post was completed and started functioning as a maternal, child health and family planning clinic It also began to see cases and to promptly refer more serious ones to the district hospital For instance, between 1992 and 1995, the health post received 194 major and minor obstetric complications Out of this, it managed 174 and referred 20

Other interventions were as follows

▼ An alliance was forged between the health post staff, the TBAs, and the local transport union to facilitate the transfer of patients with obstetric complications

▼ The community set up its own committee to oversee the smooth running of the clinic

▼ A power generator and two additional laparotomy sets were given to the district hospital

▼ Training of relevant staff in record-keeping, coupled with a refresher course for the nursing staff in emergency obstetric care, was begun

▼ An additional female ward for maternity cases was created at the hospital

▼ The renovated maternity waiting home was set up However, for socio-cultural reasons, the maternity waiting home was a failure

TBA INTERVIEWS

Six TBAs (three each from the Akwapim South and Kwahu South Districts) were visited Each of them serve a catchment area of an average of six villages, the highest served 21 villages and the lowest, 1 village Each has practiced as a TBA for an average of 17 ½ years, with the highest period of practice at 31 years and the lowest at 8 years

Five attended TBA training six years ago and one nine years ago Three learned the trade from their mothers, one from his grandmother, one from her father and the other claims it was a gift from God On average, each sees 29 antenatal clients (old and new) and conducts an average of three deliveries in a month

The descriptions by the TBAs of cases they referred could, in medical terms, mean the following conditions

❒ retained placenta

❒ meconium-stained liquor

❒ primipara

❒ previous caesarian section

❒ previous caesarian section

- ❒ cord prolapse
- ❒ arm presentation
- ❒ hemorrhage
- ❒ placenta previa
- ❒ hypertonic uterus
- ❒ offensive liquor
- ❒ short mother
- ❒ breech and other malpresentations
- ❒ grandmultipara
- ❒ anaemia
- ❒ oedema
- ❒ prolonged labor

The TBAs all keep records of services rendered (a record book has been provided by Ministry of Health)

None of the TBAs had had any maternal death during the last six months, and only one had a still birth, which was an intrauterine death The TBA training has improved the services they offer They now feel more confident, as they are able to examine their clients to detect abnormalities and refer them when necessary The training has also improved their hygiene practices and, most of all, they now enjoy good relationships with the MCH staff (They are visited at least once every month by the MCH staff)

FOCUS GROUP DISCUSSIONS

Focus group discussions were held with the following four groups

- ❒ Women 15 - 34 years
- ❒ Women 35 and above
- ❒ Men 18-40 years)
- ❒ Men 45 and above

Focus Group Findings

The participants in these discussions seemed to be knowledgeable about key health changes that take place in women during pregnancy and delivery For instance, they knew an appreciable

amount about the health benefits of delaying a first pregnancy, but they often saw no link between staying healthy during pregnancy and attending an antenatal clinic

In all the sites, pregnancy was identified and recognized as a special period in a woman's life due to the physical and emotional changes that women go through Focus group participants also acknowledged that pregnant women respond to their environment emotionally because of pregnancy Despite this knowledge, men have not developed corresponding approaches for handling the emotional stress that pregnant women go through

There is a general misconception that antenatal clinic attendance begins after the first trimester

Most participants thought it important to discuss family planning with their spouses, but only a few had ever discussed the number of children they wish to have with their spouses Both men and women expressed skepticism about the reactions of their spouses to any discussion of family planning

There was a general sense of inhibition among participants about the use of family planning methods While most participants claimed to have heard about family planning, very few had knowledge of the various methods and devices It seemed, though, that most female participants were using various herbs and concoctions to prevent pregnancy

Deciding the Number of Children

Male focus group participants agreed that men have a greater say in deciding the number of children to have However, if such men are not financially supportive of their families, they may lose such rights to their wives' families

Delivery

Most participants delivered at home for financial reasons Almost all participants, however, agreed that it is safer to deliver at health facilities

Postnatal

Postnatal services were perceived to be for women who have problems during delivery and for those who fall sick during the early days after delivery *Once you are healthy there is no need to visit hospital or clinic*

Abortion

Abortion is said to occur in all the communities, and most participants agreed that when abortion runs into complications, the only good thing to do is to rush the victim to the hospital They identified the consequences of induced abortion as death, the inability to be pregnant at a future date, and the inability to carry pregnancy to term

While participants were sympathetic towards victims of spontaneous abortion, they were less inclined to be sympathetic towards those who induce abortion

INTERVIEWS WITH SERVICE PROVIDERS

In-depth interviews were held with district public health nurses According to these service providers, there is a high degree of Information, Education and Communication (IEC) activities taking place in their districts In Akwapim South District, these activities are concentrated in the Pakro area (a PMM intervention area), while in the Kwahu South District, activities are generalized and take place in all the subdistricts The target groups for both districts remain the same, namely, women of reproductive age and men

The IEC messages and strategies are based on local research findings In both districts, there are monitoring tools incorporated into the general district monitoring plan

Community mobilization/participation has taken place in both districts, though to different degrees Those involved in the community mobilization activities include health workers, school health coordinators, national mobilization staff, assembly members, midwives, church leaders, social welfare staff, and TBAs These personnel are involved in mobilization methods and activities that are the same in both districts Kwahu South, however, also organizes focus group discussions and carries out in-depth studies

In undertaking community activities, the first step is to contact opinion leaders and then fix a date and venue for programs The communities also participate in safe motherhood programs by paying a "token" for the services rendered for them This include "tokens" paid during antenatal clinics and postnatal clinics

Selected staff in both districts have received some sort of training Two community health workers from each of the six sub-districts of the Kwahu South District were trained in the use of the health education guidelines Training at the district level is more extensive doctors and nurses have been given training on safe motherhood clinical protocols, post-abortion care and long-term and permanent contraception, TBAs have been given refresher courses

Sub-district Level

The private maternity home model - Radiant Maternity Home is a service-provision point located in a town called Nkwatia, about 10 kilometers from the district hospital in Atibie The maternity home is run by one midwife, who has been trained in life-saving skills and post-abortion care The midwife provides the following services in her facility antenatal care, deliveries, postnatal care, family planning and post-abortion care In addition, she is also involved in community Information, Education and Communication campaigns

Special procedures carried out in her facility are vacuum extraction, manual removal of placenta, episiotomy and laceration repair, infant resuscitation, and evacuation of uterus using manual vacuum aspiration for incomplete abortion

An assessment carried out at the maternity home showed that the midwife uses the partograph effectively and observes infection-control measures (hand-washing decontamination, high-level

disinfection and waste disposal) Supervision is carried out by the regional representative of the Ghana Registered Midwives Association

District Level

The Hospital Model - The Nsawam Government Hospital is a typical referral center in Akwapim South District It has the personnel, equipment and physical structures for providing essential obstetric care for cases referred from peripheral facilities, health centers, private maternity homes, and TBAs

The hospital is manned by 4 doctors and 30 midwives and is supported by 27 community health nurses working in maternal and child health services in the communities One of the measures taken to improve obstetric care in the hospital is an in-service training program for doctors and midwives in the areas of management of obstetric emergencies, use of the partograph, infection control, blood transfusion, and record keeping The hospital has a stand-by electric generator provided by the PMM network and autoclaves donated by Overseas Development Administration (now DFID)

The hospital offers antenatal care, delivery, postnatal care, family planning, post-abortion care and community Information, Education and Communication activities Midwives perform manual removal of the placenta, vacuum extraction, episiotomy, and laceration repair, among other procedures Other procedures performed in the hospital are laparotomy for caesarean sections, ectopic pregnancy, evacuation of the uterus using manual vacuum aspiration, breech delivery, infant and adult resuscitation, and permanent and long-term contraception

Partographs and safe motherhood clinical protocols are available and being used Although the hospital does not have an ambulance, the Nsawam community is involved in the provision of safe motherhood services, particularly in mobilizing transport for referred cases and organizing people to donate blood

Public health nurses and community health nurses working in the hospital supervise TBAs who refer cases to the hospital

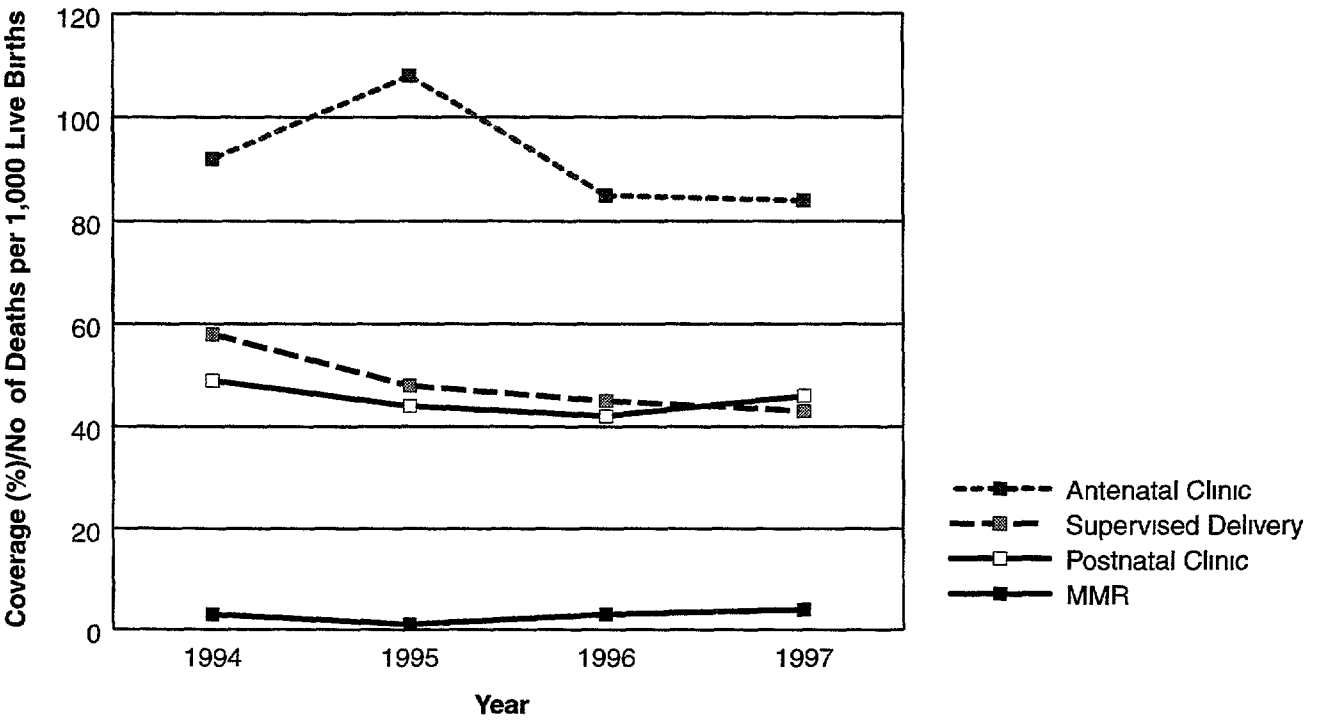
The Akwapim South District Health Management Team (DHMT) monitors safe motherhood activities using a monitoring checklist Maternal deaths, contraceptive prevalence rate, number of still births, antenatal and postnatal coverage, percentage of live births with low birth weight—all are the indicators used for monitoring (See Tables 3 and 4)

Regular monitoring of midwives and doctors is carried out by a regional safe motherhood resource team Health providers in the district have been involved in collaborative research with the PMM Network on safe motherhood These efforts include research into the causes of maternal mortality in the district and an intervention study to reduce maternal mortality

INVENTORY OF HEALTH FACILITIES

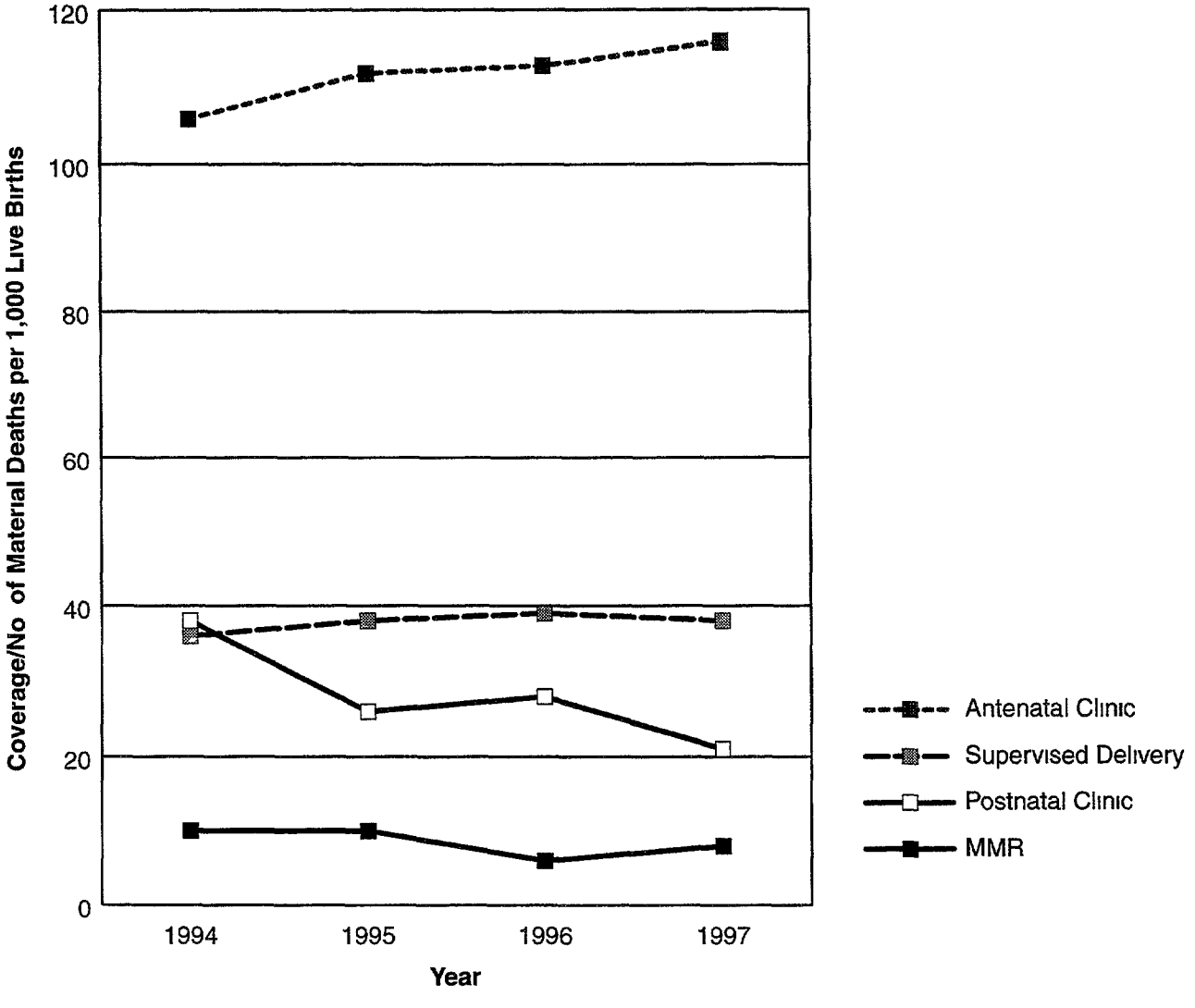
The results of an inventory in the two districts studied indicate that health facilities have essential equipment and supplies in stock for emergency obstetric care but that there is no oxygen in the centers and maternity homes, nor are there facilities for testing malaria parasites (Refer to Tables 5, 6, 7 and 8 in the Ghana Appendix)

Figure 2 Trend of Safe Motherhood Indicators, 1994-97, Kwahu South District



Source Kwahu South District Annual Report 1997

Figure 3 Trend of Safe Motherhood Indicators, 1994-97, Akwampim South District



Source Akwampim South District Annual Report 1997

RECOMMENDATIONS

In making motherhood safe, we have learned some useful lessons

1 Decentralization of services is facilitated by the existence of a national reproductive health policy, standards and protocols with clearly defined roles and responsibilities at each level

2 Operations research is a strategy that can be used to incorporate the perspective of policy makers, service providers and community members into new policies, protocols and programs Certain safe motherhood initiatives—namely, life-saving skills, TBA training, and post-abortion care—had operations research components, the findings of which were incorporated into the safe motherhood policy

3 Health service providers involved in the provision of maternity care should be trained in the detection and management of obstetric emergencies

4 There should be well-defined referral systems, with active participation of communities

5 Community members, especially women, should be empowered to become involved in making appropriate decisions that affect their lives and well-being Every effort should be made at improving the social, educational, and economic status of women and the family

Our assessment reveals that the Safe Motherhood Initiative, launched about ten years ago, has been transformed into concrete interventions in Ghana Health institutions have been equipped to provide emergency obstetric care, and health personnel at various levels have been trained in order to improve the quality of services in these institutions
Although the downward trend of the maternal mortality ratio nationally indicates that some success has been achieved through the Safe Motherhood Initiative, the goal of halving the 1987 maternal mortality ratio by the year 2000 is not yet in sight
To achieve this goal, the way forward in safe motherhood is to address the so-called three delays (see page 13), as has been demonstrated by the PMM programme In doing so, our efforts should be geared towards three key, interlinked issues

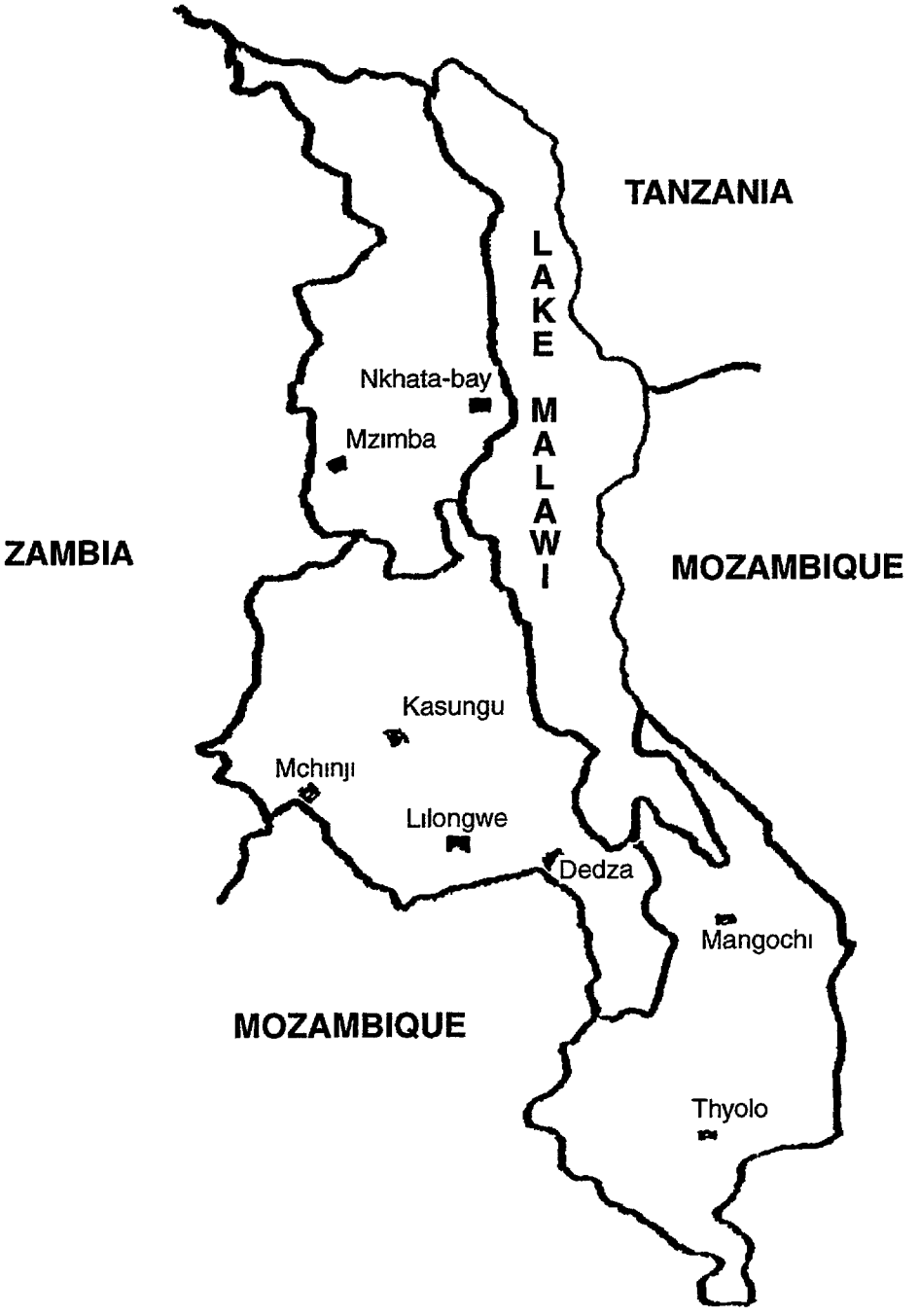
- ❒ accessibility of maternal health services
- ❒ improved quality of care
- ❒ demand generation

Access to services can be addressed through the decentralization of health services—particularly in rural areas, where most of the women reside Improved quality of care can be achieved

through infrastructural and human resource development To increase demand for the services of the health facilities, well-targeted community information and education campaigns should be used These information and education campaigns should be planned and implemented with the full participation of members of the target community The continuous monitoring and evaluation of service providers and refresher training for them are elements essential to the success of the program

Report from Malawi

Map of Malawi Indicating Study Sites



COUNTRY PROFILE

CLIMATE AND GEOGRAPHY

Malawi, located in the Great Rift Valley south of the Equator, has distinct wet and dry seasons In the southern half of the country, the wet season is from November to April, with the heaviest rainfall between December and March In the northern part of the country, the wet season begins about a month later, and in some places the rains continue until May

The topography of the country differs from region to region The Northern Region, consisting of high plateaus with an average temperature of 16 degrees centigrade, is the least densely populated area with 24 people per square mile The Central Region has an annual temperature ranging between 15 to 18 degrees centigrade and a population density of 60 per square mile The Southern Region is distinguished by a variety of climatic and topological areas, such as the extremely hot Shire Valley (annual average temperature about 27 degrees centigrade), the highest mountains in the country, and the cool, fertile Shire Highlands This region has a population density of 37 per square mile

Malawi is divided into three administrative regions Northern, Central and Southern The Northern Region has five administrative districts, while the Central and Southern Regions have nine and twelve districts, respectively

Malawi extends 900 kilometers from Tanzania in the north to Mozambique in the south Its width varies from 80 to 160 kilometers, from Mozambique in the east and Zambia on the west, covering a surface area of 118,484 square kilometers, of which 24,208 square kilometers (20 percent) consists of fresh water The fresh water is from Lake Malawi, the third largest lake in Africa Its size is estimated to be 365 kilometers long and 52 kilometers wide Another 23 percent of the country consists of forests and game reserves, leaving 57 percent for settlement and agriculture

DEMOGRAPHICS

Culturally, Malawi consists of nine major ethnic groups who have enough in common to allow comfortable and productive interaction In addition to the languages spoken by the different ethnic groups, English, as the official language, is used in all schools as the medium of instruction The main religions are Christianity (75 percent) and Islam (20 percent)

The mid-1994 population, estimated at 10 million people based on the 1987 population census, makes Malawi one of the most densely settled countries in the region—with an average of 166 people per square kilometer of arable land The population distribution varies in the three administrative regions, with the Northern Region the least densely settled (11 percent of the population) while the Southern Region is the most densely settled (almost half of the population) Selected demographic and health statistics are presented below

Population and Housing Data, 1992, DHS

Total population (estimates - millions)	11 0
Urban population	11 %
Annual natural increase	3 2 %
Population doubling time	21 7 years
Crude birth rate	41 2 per 1,000 population
Crude death rate	14 1 per 1,000 population
Life expectancy at birth - male	41 4 years
Life expectancy at birth - female	44 6 years
Population density	166 0 per square kilometer

Malawi Demographic and Health Survey 1992

Children 0-4 years (estimates - million)	1 7 (17 5 %)
Children 5-19 years (estimates - million)	3 7 (38 1 %)
Women of reproductive age (15-44 years)	21 %
Women 15-49 currently married	72 %
Median age at first marriage among women age 15-49	17 7 years
Median duration of breast feeding	21 2 months
Median duration of postpartum amenorrhoea	11 9 months
Total fertility rate	6 7
Deliveries conducted by a trained health person	57 %
Deliveries conducted by TBAs	18 %
Mean number of children ever born to women age 15-49	7 3
Mean ideal number of children among women 15-49	5 1
Infant mortality rate	134 per 1,000
Under-five mortality rate	234 per 1,000
Contraceptive prevalence rate (per 1,000)	7 0 %
Literacy rate	42 %
Maternal Mortality Ratio	620 per 100,000 live births
Doctor Population ratio	1 39,140
Registered Nurse Population ratio	1 15,940
Enrolled Nurse Population ratio	1 4,456
Medical Assistant Population ratio	1 9,876

SOCIO-ECONOMIC CONDITIONS

Malawi's climatic variability and generally fertile soil support a wide range of tropical and sub-tropical crops Agriculture accounts for 37 percent of gross domestic profit and over 8 percent of export earnings and total employment A striking feature of the economy is the intense pressure on land Most of the arable land is already under cultivation Maize is the staple crop, occupying nearly 80 percent of the cultivated area Export earnings mainly accrue from three other crops tobacco, tea and sugar Together, they account for 88 percent of total export earnings Agriculture is almost entirely rain-fed, with only a few irrigation schemes

Data on the employment situation indicates that 1 8 million women form part of the 3 5 million of Malawi's active labor force, however, most of the women are employed in small-holder agriculture sectors and are, therefore, very unlikely to be reached by health education messages

Since Malawi gained independence from the British Government in 1964, significant development has taken place Agriculture is the mainstay of the economy, and a significant part of that agriculture is in the small-holder farming sector However, economic growth has been greatly stunted by population growth and a high rate of illiteracy (58 percent) It has, therefore, not been possible for the economy to satisfy the demand for social services, such as education, housing and health care, nor to create enough jobs In addition, the effects of drought and the rapid increase of the inflation rate has added to the generally low economic status of Malawi

Selected economic indicators (Situation Analysis of Poverty in Malawi, 1994) are presented below

	GDP Growth	Per-Capita GDP Growth	Budget Deficit as % of GDP (FY)	Inflation Rate	Formal Sector Emp Growth	Change in Real Average Earnings
1982	2 8	-0 5	12 5	8 8	-0 3	8 0
1983	3 5	0 2	10 2	13 4	18 7	-19 2
1984	4 3	1 2	8 8	11 0	-1 7	-10 3
1985	4 5	1 2	8 7	14 9	7 8	-1 0
1986	1 1	-2 2	13 9	14 8	4 2	-5 4
1987	0 5	-2 8	8 7	26 8	-4 8	-8 3
1988	3 3	0 0	9 0	31 4	5 3	-23 2
1989	4 1	0 8	8 0	15 7	1 5	-1 4
1990	4 8	1 5	6 5	11 5	7 2	1 3
1991	7 8	4 5	6 8	11 9	4 5	2 2
1992	-7 9	-11 2	13 8	22 7	N/A	N/A
1993	N/A	N/A	N/A	N/A	N/A	N/A

The Government of Malawi has recognized the relationship between economic development, maternal and child health, and fertility rates, and thus has instituted a number of strategies to address the problems of poverty, maternal and child morbidity and mortality through reduction of fertility These strategies have included (1) establishing a Population and Human Resources Development Unit to create capacity for population planning, (2) formulating and adopting a population policy in 1994, and (3) strengthening family planning services in primary health care

MATERNAL MORTALITY AND MORBIDITY

The MDHS 1992 revealed that the maternal mortality ratio in Malawi—620 deaths per 100,000 live births—is much higher than previously thought The lifetime risk of a Malawian woman dying of pregnancy-related causes is 1 in 29 By comparison, the risk in Northern Europe in 1 in 9,850 (Maine 1991)

Although there are no local data on maternal morbidity, it is estimated that for every woman who dies, 15 survive with chronic problems such as anaemia, pelvic inflammatory disease, and vesico-vaginal vistulae, any of which reduces their quality of life and their capacity to care for their family Thus, about 93 out of every 1,000 women who deliver a live baby in Malawi—almost one in ten—are affected

The MDHS noted that 51 percent of all births in Malawi are conducted in modern health facilities, and that 50 percent of all deliveries were attended by a trained nurse-midwife (MDHS 1992) Only 18 percent of all births are attended by Traditional Birth Attendants (TBAs) In a community study in Thyolo, 55 percent of the maternal deaths in the previous five years had occurred in health facilities (Chiphangwi, et al, 1990)

According to this study, the main causes of maternal deaths in Thyolo were

- The complications of incomplete abortion (6-18%)
- Antepartum and postpartum hemorrhage (16-24%)
- Puerperal sepsis (12-24%)
- Obstructed labor/ruptured uterus (13-20%)

HEALTH SERVICES ORGANIZATION AND HEALTH POLICY

According to the Health Policy Framework of 1995, the goal of Malawi's health policy is to raise the level of health of all Malawians by reducing the incidence of illness and occurrence of death in the population To achieve this goal, the government of Malawi provides a comprehensive system utilizing the primary health care (PHC) approach, by which health care is delivered at four levels village, health center, district hospital, and central hospital

At the **first** level, the village level, village health committees, volunteers, TBAs, and traditional healers are entrusted with delivery of health care Village health committees, volunteers, and TBAs are taught skills to deal with specific problems, such as

- ❒ maintenance of hygiene and sanitation in the village,
- ❒ growth monitoring of under-five children,
- ❒ distribution of oral rehydration salts, contraceptives, and antimalarials,
- ❒ provision of health education, and
- ❒ non-complicated maternity care

Health centers, the **second** level of the health care delivery system, are meant to serve a population of 50,000 within a radius of ten kilometers Services provided at this level include diagnosis and treatment of non-complicated diseases on an outpatient basis, and a full range of maternal and child health and family planning services, including delivery services for all uncomplicated pregnancies Health centers also serve as referral centers for TBAs The personnel responsible for providing care at this level include medical assistants, enrolled nurse/midwives, enrolled community health nurses, health assistants, and health surveillance assistants In addition to providing services at the health center, these personnel conduct outreach clinics for underserved areas and supervise and monitor the work of the village health workers There are currently 700 health centers managed by the government, non-governmental organizations (NGOs), and the private sector A few of these centers have the capacity to admit patients in addition to pregnant mothers

The **third** level of the health care system, the district hospital, provides a full range of health services and serves as a referral center for health center cases Personnel at this level include medical doctors, clinical officers, registered nurse/midwives, public health nurses, enrolled nurse/midwives, medical assistants, public health inspectors, radiography and laboratory technicians, and pharmacy assistants District hospital personnel monitor and supervise the activities of the health center personnel There are 21 government district hospitals and another 20 hospitals belonging to missionaries

At the **fourth** and last level of the health care delivery system are the central hospitals, which provide tertiary care by specialized personnel and serve as teaching hospitals Currently, there are four such hospitals Supervision and monitoring of central hospitals is done by Health Headquarters, while that of district hospital personnel is done by regional health officers The district health personnel, in turn supervise health center and community-level workers

The country has now been divided into health delivery areas, which will eventually be administered by either the Ministry of Health or the Christian Hospital Association of Malawi

Maternal and Child Care and Family Planning Services

Maternal and child health services have been provided by the Government and NGOs for many years The maternal care services include antenatal care, supervised delivery services, perinatal and postnatal care, health education, nutrition education, immunization against tetanus, and emergency obstetric care Realizing the disastrous consequences of closely spaced pregnancies on the health of mothers and children, the Ministry of Health, with support from volunteer citizens, introduced family planning services in 1982

Child care services start with neonatal care soon after delivery and continue in under-five clinics The under-five clinics provide such services as health education of the mother on baby/child care, growth monitoring, immunization, and nutrition advice to the mother, including promotion and protecting of breast feeding

With donor support, the child health care component has become intensified, particularly through the Expanded Programme on Immunization (EPI) and Growth Monitoring The family planning services have also expanded as a result of donor support But the growth of these two services has, until recently, occurred at the expense of maternal health care services However, the Nairobi Safe Motherhood Conference of 1987 has increased interest in maternal health care services and the Safe Motherhood Intervention Program has gained a firm base in Malawi

TBAs have been recognized by the Government as an important link between the conventional health services and the communities Since 1978, some 2,000 TBAs have been trained, and in 1994, a new TBA training curriculum and trainers guide was developed to ensure that TBAs conduct safe and clean deliveries

Family planning services are provided in 326 of the 759 health facilities in Malawi In some health facilities, family planning services are provided daily and in others, on several days a week In 56 percent of health facilities, maternal and child health and family planning services are provided in an integrated manner Mobile outreach teams provide these services from 43 percent of the health facilities

Although nurse/midwives, medical assistants, clinical officers and medical students are trained during the pre-service courses in maternal and child health and in family planning, medical assistants and clinical officers continue to have very limited training in maternal health care services To make up for this inadequacy, clinical officers undergo specialized training to enable them to perform operative deliveries

Milestone of the MCH/FP Programme

1974 Launching of Maternal and Child Health Programme

1978 Introduction of the Traditional Birth Attendant Programme

1984 Introduction of the Child Spacing Programme as an integral part of MCH

1989 The Grand Alliance for the Children of Malawi under which EPI and, specifically, Child Survival Programmes were to be strengthened

1990 National Family Welfare Council of Malawi becomes operational

1992 Child Spacing Policy and Contraceptive Guidelines developed

1993 Child Spacing renamed Family Planning
Safe Motherhood Initiative started
Exclusive Breast-feeding Concept introduced

1994 Mothers Day dedicated to safe motherhood
New TBA and Family Planning curriculum developed
TBA trainers guide developed
National Family Planning strategy published by NFWCM published
National Population Policy adopted

1996 Official launching of the Malawi Safe Motherhood Initiative

1997 MCH/FP Unit of the Ministry of Health and Population renamed Reproductive Health Unit

Management of MCH/FP Programme

The Ministry of Health is divided into five technical sections

- ▼ Clinical Services
- ▼ Nursing Services
- ▼ Preventive Health Services, including Maternal and Child Health and Family Planning
- ▼ Health Technical Support Services
- ▼ Health Planning Services

Each is headed by a Controller, who reports directly to the Chief of Health Services

Although Maternal and Child Care/Family Planning (MCH/FP) services are the responsibility of Preventive Health Services, the majority of the coordinators and providers of these services are nurse/midwives from Nursing Services Consequently, the District Nursing Officer is responsible for supervising MCH/FP providers at the district and health-center level

In 1990, the Government of Malawi established the National Family Welfare Council of Malawi, a statutory body to advocate for, and coordinate delivery of, family planning services in the country The Council sets guidelines for training family planning providers and community-based distributing agencies To better reflect its mandate, the Council has now changed its name from Family Welfare Council to Family Planning Council As Malawi is signatory to a number of international conventions, the Ministry of Health and Population has renamed its MCH/FP Unit to Reproductive Health (RH) Unit to enable implementation of recommendations made at the 1994 International Conference on Population and Development Nevertheless, the Government has yet to develop a Reproductive Health Policy

ASSESSMENT METHODOLOGY

PURPOSE

As the Safe Motherhood Initiative launched in 1987 in Nairobi had a specified target to achieve by the year 2000, it is important for countries to assess the progress made in implementing the safe motherhood concept Such an assessment will also aid countries in designing remedial measures if target goals are not being achieved Therefore, the purpose of this study was two-fold

(1) to determine the extent to which the safe motherhood concept has been operationalized in Malawi and

(2) to determine if any levels of success have been achieved in the implementation of the Safe Motherhood Initiative

The study was a collaborative effort among the governments of Malawi, Ghana, Uganda and MotherCare/JSI, a USAID-funded Cooperating Agency (CA) The Malawi team was comprised of an obstetrician, two midwives, an economist, and a social scientist

DESIGN

The study used a simple descriptive cross-sectional design, whereby data were collected at one time from a sample comprised of national health policy makers, Safe Motherhood program coordinators, Maternal Health Service directors, community-based health workers, village health committees, TBAs, and recipients of Maternal and Child Health services Data were collected through interviews, observations, discussion, and review of existing policy documents and reports from the Ministry of Health and Population (See Malawi Assessment Instruments in Appendix)

INSTRUMENTS

Questionnaires

Questionnaires were designed to collect data from national, district or local Safe Motherhood Program directors, District Safe Motherhood trainers, village health workers, chairpersons of village health committees, and women The questionnaire for the program directors elicited information on

- Operationalization of the safe motherhood concept
- Strategies designed to implement the Safe Motherhood Initiative
- Availability of essential obstetric care and accessibility of these services

▼ Availability of clinical guidelines or protocols for management of obstetrical emergencies

▼ Population covered

▼ Partners or coalitions in the implementation of the safe motherhood interventions

▼ Involvement of political leaders and communities, including men, in the implementation of the safe motherhood strategies

▼ Integration of maternal and newborn services with family planning and STD/HIV/AIDS services

▼ Misconceptions or rumors that may affect implementation of safe motherhood strategies

▼ Positive outcomes observed as a result of the safe motherhood interventions

▼ Mechanisms for sustainability of those interventions that are donor funded

Other questionnaires were administered to groups of community-based health workers (e g , TBAs, chairpersons of village health committees, community-based Safe Motherhood advisors, community-based distributing agencies for contraceptives [CBDAs]) These questionnaires elicited information on specific roles played by the community in the implementation of the National Safe Motherhood program, as well as specific training, supportive supervision and incentives provided by the government to enable village health workers to play an effective role

Review of Existing Documents

To determine the extent to which the country had institutionalized the safe motherhood concepts the national health policy, district operational plans, and reports of the Ministry of Health and Population (including annual reports from regional and district health offices) were reviewed In addition to these documents, three reports of surveys on maternal health services conducted in 1994 and 1997 were also reviewed

Discussion with Chief of Health Services and MCH Officers in the Ministry of Health and Population (MOHP)

Supplementing information obtained through the review of the documents cited above were discussions held with the Chief of Health Services and officers working in the MCH/FP unit of the MOHP In this way, the study obtained in-depth information on the implementation of the Safe Motherhood Initiative, specific strategies identified by government to address the problem of maternal mortality, and indicators identified to monitor progress and success of implementation

Observations

Observations were made on the delivery of safe motherhood interventions by either formal health workers or village-based health workers

Focus Group Discussions

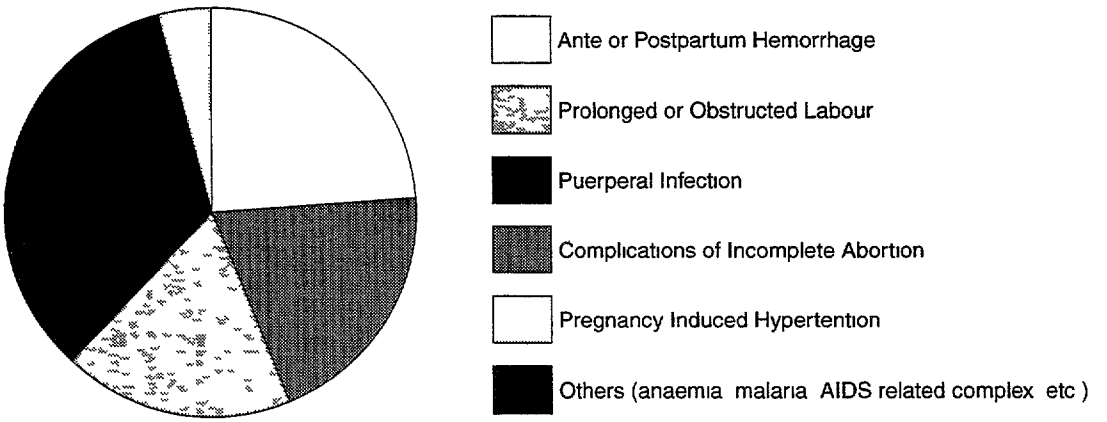
Discussions were held with a group of women who had attended one-day safe motherhood workshops conducted by district Safe Motherhood trainers and women who had been trained to serve as Community-based Safe Motherhood Advisors (CBSMAs)

ASSESSMENT FINDINGS

The results of the study are organized by the themes which emerged during the data collection, including institutionalization of the Safe Motherhood Initiative concept, operationalization of Safe Motherhood Initiative strategies, and involvement of communities in the implementation of the Safe Motherhood Initiative

INSTITUTIONALIZATION OF THE SAFE MOTHERHOOD CONCEPT

The review of policy documents and the interviews with health policy makers showed that Malawi adopted the recommendations made at the 1987 Nairobi Conference on Safe Motherhood However, development of a strategic plan to implement a comprehensive package of Safe Motherhood Intervention was not done until 1993 Prior to the development of the strategic plan, a number of studies had been done to identify the major causes of maternal mortality, both at the hospital and community level (Driessen, 1989, Chiphangwi et al, 1990, Phoya et al, 1990, Sangala, 1992, Wiebenga, 1993, Nyaphisi et al, 1993) The immediate causes of maternal mortality established through these studies are similar to those identified in other least-developed countries They include (1) hemorrhage, (2) puerperal infection, (3) prolonged or obstructed labor including rupture of the uterus, (4) complications of incomplete abortion, and (5) pregnancy-induced hypertension (see below)



The Demographic Health Survey of 1992, which placed Malawi's maternal mortality at 620 deaths per 100,000 live births, also identified major causes of death similar to those cited above Another study carried out by the Ministry of Health and Population in 1994 on the performance of maternal and child health services, including family planning, showed that most health facilities in the country were providing substandard care to meet the needs of women who develop complications during pregnancy, labor, delivery and puerperium The major factors contributing to the poor quality are listed in Box 1

BOX 1 SAFE MOTHERHOOD NEEDS ASSESSMENT STUDY (1994)

FACTORS CONTRIBUTING TO POOR QUALITY OF MATERNAL CARE

➔ Inadequate health personnel

➔ Low level of skills among midwifery personnel

➔ Poor health infrastructure

➔ Lack of transport and communication system for emergency referral

➔ Poor attitude of health personnel

➔ Inadequate essential drugs, equipment and supplies, including Information, Education and Communication materials and treatment guidelines

➔ Inadequate monitoring and supervision of midwifery and TBA services

In addition to the service-related factors, the study also determined that most women delay in seeking care for both antenatal care and delivery, and almost never use postnatal clinics

Realizing that reduction of maternal mortality requires input from all sectors of the economy, Malawi established a National Safe Motherhood Task Force in 1993 The Task Force was composed of a multidisciplinary team with members from the following organizations

- The Ministries of Health and Education
- Women Youth and Community Development
- Christian Hospital Association of Malawi
- Health Training Institutions
- Nurses and Midwives Council
- Medical Council of Malawi

- National AIDS Control Program
- Health-related NGOs and Donor Agencies

The Task Force was assigned the role of developing the National Safe Motherhood Strategic Plan and overseeing its implementation and did so using the results of the Safe Motherhood Needs Assessment Survey The purpose of the plan, which became operational in 1996, is to reduce Malawi's maternal mortality from 620 to 310 deaths per 100,000 live births by the year 2001

The review of the background document further showed that implementation of the strategic plan was started in 1995 by various stakeholders Due to financial constraints, the Proposed Safe Motherhood Initiative strategies were implemented as a whole package in selected districts that have received financial donor support, while other districts are implementing some of the strategies as part of their district health annual action plans financed through the recurrent government budget

OPERATIONALIZATION OF SAFE MOTHERHOOD STRATEGIES

The survey noted that the following activities have been carried out to implement the Safe Motherhood Initiative strategic plan

Creating general awareness among the general public of the problem of high maternal mortality and the needs of pregnant women

To ensure that the general public appreciates the problem of high maternal mortality and to generate support for pregnant women, the Ministry of Health and Population, Ministry of Women, Youth and Community Development, Ministry of Information, College of Medicine (Department of Obstetrics) and the National Family Planning Council conducted a number of sensitization meetings for traditional authorities, chiefs, and church leaders from all 25 districts of the country In addition to these meetings, advocacy meetings on the Safe Motherhood Initiative were also held in seven districts (two from the Southern Region, three from the Central Region, and two from the Northern Region) for district development committees and village health committees The specific objectives of the advocacy meetings were to

→ create an in-depth awareness and knowledge among political and community leaders about the maternal health status in Malawi,

→ sensitize leaders on the safe motherhood concept,

→ determine the roles of the community leaders in implementing of the Safe Motherhood Initiative at community level, and

→ solicit the support of the leaders and their commitment to the implementation of safe motherhood in their areas

To achieve these objectives, a number of issues (some of which are presented in Box 2) were discussed extensively

BOX 2 SOME ISSUES DISCUSSED DURING ADVOCACY MEETINGS (SOURCE. *REPORT ON SAFE MOTHERHOOD INITIATIVE ADVOCACY MEETINGS, 1997*)

- ✔ District data on the number of maternal and infant mortality and morbidity
- ✔ Common causes of maternal and infant mortality
- ✔ Antenatal care and family planning coverage rates
- ✔ Number of deliveries assisted by health workers and TBAs
- ✔ Number of unsupervised deliveries
- ✔ Organization of community emergency transport
- ✔ Role of maternity waiting homes
- ✔ Proposed interventions for reducing maternal mortality, e g , clean and safe delivery and emergency obstetric care in Safe Motherhood Initiative
- ✔ Importance of health facility delivery
- ✔ Role of community leaders in improving access to essential obstetric care
- ✔ Scope of practice for the TBAs

A total of 300 traditional authorities (chiefs), 100 District Development Committee members, and 135 Village Health committees participated in the advocacy meetings Recommendations made by these community leaders included

- ❒ mobilizing village transport systems for emergency referral from the community TBA birthing centers to the district hospital level,
- ❒ encouraging women to seek antenatal and delivery care from TBAs or health centers,

- instituting disciplinary measures (e g , paying chicken or goat to the chief) to the families of women that deliver at home without supervision, or penalizing untrained TBAs who conduct deliveries, and

- requesting district development funds for building bridges, roads or health centers where access is a problem

After these meetings, the leaders were asked to disseminate this information to other areas and implement the recommendations

To complement these sensitization activities, drama groups and groups of women were trained to disseminate safe motherhood messages at the village level Each district now has more than five drama groups, while two districts (Mangochi in the Southern Region and Lilongwe in the Central Region) have groups of women who have been trained to serve as Community-Based Safe Motherhood Advisors (CBSMAs) Currently, there are 80 CBSMAs who have disseminated Safe Motherhood Initiative messages to a total population of 22,000 men, women and youths from the two districts Both the drama groups and the CBSMAs disseminate these messages through songs and plays in a variety of settings, such as schools, church gatherings, funeral ceremonies, clinics, and village and agricultural club meetings During the survey, three drama groups and ten CBSMAs were observed, the common messages disseminated by both groups are shown in Box 3

BOX 3 SMI MESSAGES DISSEMINATED BY DRAMA GROUPS AND CBSMAs

MESSAGE	MODE OF DISSEMINATION	TARGET AUDIENCE
Dangers of abortion	Song and discussion	200 school youths
Who should not deliver at home	Play	80 women
Dangers of unsupervised deliveries	Play	30 men and 50 women
Dangers of teenage pregnancy	Song and discussion	150 school youths
Causes of maternal death	Play and song	20 men and 40 women
Prevention of maternal death	Song	50 women, 20 youth, 30 men
Prevention of STD/HIV/AIDS	Song and play	300 youths
Prevention and management of postpartum hemorrhage	Play	100 women and 5 TBAs
Prevention of neonatal tetanus	Role play	150 women and 2 TBAs
Benefits of family planning	Play	150 men and 200 women
Investing in girls' education	Play and discussion	150 men and 20 chiefs

As the drama groups and the CBSMAs disseminate safe motherhood messages in their own localities, the population at large receive the same messages from electronic and print media personnel, who also attended the advocacy meetings The national radio has a daily time slot for health issues each morning before the news bulletin, when aspects of the messages are aired to the nation There are also radio soap operas, which feature health issues such as the problems of too many pregnancies, the role of men in family planning issues, the dangers of child bearing in the adolescent years and the proper use of health facilities during pregnancy, labor and delivery

Additionally, two popular newspapers in the country (*Daily Times* and *The Nation*) have a health corner which mostly focuses on the health problems of the vulnerable groups, such as women and children For women's health issues, the articles that frequently appear address controversial issues, such as the merit of legalizing abortion as a means of reducing levels of unsafe abortion (which contribute to 18 percent of all maternal deaths in the country)

In late October 1997, a number of articles appeared covering the Safe Motherhood Initiative 10th Anniversary Consultative meeting In fact, these articles questioned health providers and policy makers about what Malawi is currently doing to address the issue of maternal mortality The advocacy meetings have, therefore, stimulated interest and awareness in the general public on the problems of maternal death, and government is being asked by the public to do something about this problem

Generating Political, Government and Donor Commitment for Financing Safe Motherhood Interventions

Although the Malawi 1985-1996 National Health Plan identified maternal and child health care as a priority area requiring more financial resources, the National Safe Motherhood Task Force noted that, with the exception of the family planning program, more funding was assigned to child health programs than to maternal health programs For this reason, the Safe Motherhood Initiative Strategic Plan recommended implementing advocacy meetings for political leaders, chief executives of public and private organizations, and representatives of donor agencies As a result, two-day advocacy meetings were held in 1996—one for parliamentarians and representatives of donor agencies, the other for the chief executives

The first meeting was attended by 143 members of parliament and 21 ministers responsible for government ministries and departments, as well as representatives of health-oriented donor agencies The meeting of the chief executives was attended by 57 participants 28 principal secretaries for government ministries, town clerks from the three cities of the country, and 24 executive directors from private organizations In addition to topics on population and sustainable development, the meeting provided information on trends in maternal mortality, the Safe Motherhood Initiative as a global strategy for reducing maternal mortality, proposed strategies for implementing the Safe Motherhood Initiative in Malawi, and the financial resources required to do so

The major achievement of these advocacy meetings was the development of a strong alliance between Government, NGOs and donors for the implementation of the Safe Motherhood Initiative As a result of this alliance, government on its part has established a specific budget line for safe motherhood interventions, and donors have pledged to provide funds specifically for the interventions The survey noted that four donor agencies—United Nations Fund for Population Activities (UNFPA), United Nation's Children's Fund (UNICEF), British Department for International Development (DFID) and the European Union (EU)—have provided funding for implementing Safe Motherhood Initiative activities in 18 districts of the country, and the Government of Malawi is financing interventions in the remaining eight districts

In addition to mobilizing resources, the advocacy meetings for the parliamentarians and chief executives made useful recommendations, which are contributing to the successful implementation of the Safe Motherhood Initiative in the country Some of these recommendations are presented in Box 4

BOX 4 RECOMMENDATIONS AFFECTING IMPLEMENTATION OF SAFE MOTHERHOOD INITIATIVE IN MALAWI

(SOURCE *POST CAIRO AND ADVOCACY TAKES OFF - REPORT OF A WORKSHOP FOR PARLIAMENTARIANS, PRINCIPAL SECRETARIES AND CHIEF EXECUTIVES ON POPULATION AND SUSTAINABLE DEVELOPMENT, 1996*)

- ✔ The Family Planning Unit of the Ministry of Health and Population should be retitled to Reproductive Health Unit in order to emphasize the expanded focus on reproductive health, including Safe Motherhood Intervention issues
- ✔ Government should strive to change the attitudes of service providers by improving their working environment in order that family planning services are provided to those who need them, irrespective of marital status
- ✔ Civil registration should be introduced, as it is important to monitor trends in population
- ✔ Participation of NGOs and the private sector in population, particularly in the provision of reproductive health services, should be coordinated and encouraged
- ✔ Parliamentarians should assist in the mobilization of resources, including manpower and finance for reproductive services
- ✔ All members of parliament should facilitate utilization of available health services, such as those of family planing, antenatal and nutrition education

Reducing Delay in Obtaining Emergency Obstetric Care

As the 1994 Safe Motherhood Needs Assessment identified delay in obtaining emergency obstetric care as one of the underlying factors contributing to high maternal mortality, the Safe Motherhood Strategic Plan recommended a number of activities to reduce this delay The activities address three types or levels of delays

1 delay at the family level in making the decision to seek care during pregnancy, labor and delivery

2 delay in reaching a health facility due to lack of transport

3 delay in receiving appropriate care due to health facility problems

Activities to reduce delay in decision making - Village headmen and village health committees have been trained and assigned responsibility to advise expecting families to report to health

facilities in a timely manner for care during the antepartum, intrapartum, and postpartum period Following this training, village health committees call regular monthly meetings to discuss health issues, including safe motherhood During the survey, ten chairpersons of village health committees were asked to verify their training in Safe Motherhood Initiative issues and what is expected of them The responses indicate that they had been taught by health center personnel on the need for proper utilization of health facilities, especially during pregnancy and delivery, and the need for organizing ox-carts or bicycles to transport women to health facilities or TBA birthing centers when necessary The chairpersons had a leaflet prepared by the National Safe Motherhood Program on the situation of maternal mortality in Malawi, the causes of maternal death, and the roles of individuals, families, chiefs and government in the prevention of maternal mortality The leaflet assists members of the health committee to disseminate information on safe motherhood issues to members of the villages

Since husbands and mother-in-laws are the major decision makers in the family, the village health committees target these people during their IEC activities As a result, there has been an increase in the number of women who report to health facilities for antenatal, labor and delivery and of women who easily accept referral from health centers to deliver at a district hospital

Activities to reduce delay due to transport - In most rural areas of Malawi, the road and telephone infrastructure is very poor—making referral of obstetric complications a nightmare The use of bicycle ambulances and radio communication and of maternity waiting homes were identified as solutions to this problem

Bicycle Ambulances - Four districts (Mangochi, Kasungu, Thyolo and Mzimba) were visited during the study to observe how the bicycle ambulances were functioning and if they had made any difference The bicycle ambulances in these districts were supplied by UNICEF and the World Health Organization and were either community property kept by a village headman or the property of the TBA The study found that it was effective to keep the bicycle ambulance with the TBA, as most referrals are from the TBA to the health center Since the TBA birthing centers are part of the village setting, women did not need transportation from their homes to the TBA

In the areas where the chief kept the bicycle, it took more time to get the bicycle from him to the TBA and from there to the health center However, it was easier for the community to maintain a bicycle kept by the chief than one kept by the TBA The TBAs were viewed as business people who could afford to maintain the bicycle without assistance from the communities The study also found that bicycles ambulances were not as useful during the rainy season and in sandy areas Other problems reported by some chiefs were associated with cultural beliefs For example, two chiefs said

People are afraid to be taken on the bicycle ambulance like a dead body and the feeling is that the situation is too serious and hopeless to warrant a trip to the hospital

Pregnant women do not want to be seen lying on the bicycle ambulance as this would announce that labor has started and may attract witches

Another problem cited when using bicycle ambulances was the poor supply of spare parts as most spare parts are not manufactured within the country When spare parts do become available, they are sold at a high price and are only available in cities or district headquarters—not in local grocery stores operating in rural areas

Radio Communication System - To supplement the bicycle ambulances, radio communication systems have been set up in selected health centers The survey showed that since the installation of a radio telephone system, there has been a reduction in the time between identification of a complication by health center personnel and admission to the district referral center (from six hours to three hours) **The district referral centers are now trying to reduce the current three-hour time to at least one and half hours by providing specific ambulances for obstetric emergencies** Although cultural beliefs threaten the use of the bicycle ambulance, the general feelings of the TBAs and chiefs were that the ambulances are helpful, as women do not have to wait for a whole day to find an ox cart or to make a stretcher

Maternity Waiting Homes - Data on the use of maternity waiting homes indicate that they are not very common, probably because they are supposed to be constructed through self-help projects The few that have been constructed have provided positive results For example, Ekwendeni Maternity Waiting Home keeps an average of 20 antenatal mothers per month, who come from a distance of 10 to 60 kilometers within and outside the catchment area of the hospital The hospital also indicated that since the introduction of the Home, admissions of complicated cases has been reduced from 100 per month in 1986 to 10 per month in 1997 The Home's success in reducing the number of complications is attributed to the value that the mothers themselves place on its benefits

Box 5 provides some of the benefits cited by 20 mothers interviewed during the survey at Ekwendeni Mission Hospital

BOX 5 PERCEPTION OF PREGNANT WOMEN ON THE BENEFITS OF A WAITING HOME

It helps us to be near the hospital for delivery

It may reduce the risk of dying if you develop complications during labor as you are near and you will be attended to quickly

You do not need money to hire a vehicle to rush to hospital when problems arise since you are already at the hospital

Blood is checked on arrival to find if you have enough blood or if you need to get a donor to give you blood in a good time

Reducing delay in receiving emergency obstetric care - As this type of delay can occur at the health-facility level even if the mother reported in good time, the Safe Motherhood Intervention program is addressing this delay by implementing measures aimed at improving the quality of care available in maternity units, as well as in other ambulatory maternal health services

Improving the Quality of Maternal Health Care, including Family Planning and Neonatal Care

Because the other strategies aim at creating demand for maternal health services, providing quality care is viewed as critical to achieving the Safe Motherhood Intervention goals in Malawi To ensure that the services meet the needs of women and their families, the Safe Motherhood Intervention strategic plan identified a number of activities to be implemented by both public and private maternity units

Provision of essential equipment, drugs and supplies - The 1994 Safe Motherhood Initiative Needs Assessment survey showed that most health facilities lacked proper equipment and supplies for essential obstetric care Therefore, a standard list of equipment, supplies and drugs was developed using the WHO Mother-Baby Package Interventions This list has now been adopted and is used to purchase equipment for district and health-center levels Health facilities situated in seven districts supported by UNFPA and UNICEF have now started to receive this equipment

Training of nurse-midwives in obstetric life-saving skills - Life-Saving Skills Training (LSS) is targeting midwives as they make up the majority of health workers providing maternal health care (i e , antenatal, labor/delivery, postpartum, family planning and neonatal care) The training has two components

(1) Training of Trainers for LSS conducted for senior registered nurse-midwives and
(2) LSS Providers Course for both registered and enrolled nurse midwives

The Training of Trainers course is aimed at providing each district or private hospital with one to three senior midwives who will be responsible for providing midwifery continuing education services for district hospital and health center personnel The training, therefore, focuses on teaching methodology and advanced midwifery skills The LSS Providers Course trains both registered and enrolled nurse midwives currently working in antenatal clinics, family planning clinics, labor and delivery units, and postnatal and neonatal care units It is interesting to note that LSS training was started in Malawi, using the WHO LSS curriculum, which focuses on prevention and management of postpartum hemorrhage, puerperal infection, obstructed labor, and pre-eclampsia Malawi has now developed its own two-week-long course (Box 6)

BOX 6 CONTENT FOR LIFE-SAVING SKILLS TRAINING IN MALAWI

- ✔ Introduction to Safe Motherhood Initiative
- ✔ Interpersonal Communication and Counseling
- ✔ Maternal and Perinatal Service Data and Record Keeping
- ✔ Care during Antenatal Period
- ✔ Prevention and Management of Anemia in Pregnancy
- ✔ Prevention and Management of Postpartum Hemorrhage
- ✔ Prevention and Management of Complications of Abortion
- ✔ Prevention and Management of Obstructed Labor
- ✔ Prevention and Management of Puerperal Infection
- ✔ Role of Partograph in the Management of Labor
- ✔ Care of Women during 1st, 2nd, and 3rd Stage of Labor
- ✔ Management of Breech and Vacuum Delivery
- ✔ Care of the Newborn, including Resuscitation
- ✔ Lactation Management and Exclusive Breast Feeding
- ✔ Care of a Woman during the Postpartum Period

Clinical competencies stressed during the training include

- counseling
- physical assessment
- monitoring of fetal and maternal condition
- plotting on the partograph
- pelvic assessment
- intravenous hydration
- blood transfusion
- bladder care

The survey found that since the inception of the course, 52 registered nurse midwives have been trained as District Safe Motherhood Trainers and 600 nurse midwives have participated in the LSS training Five trainers and 15 midwives who participated in the LSS training were interviewed during the survey, all of them indicated that the course is helpful because it has assisted them to better manage pregnant women who develop complications District health management teams also indicated that after the course, nurse midwives are providing comprehensive care (e g , nursing notes are more complete, care during labor and use of the partograph has improved, at-risk mothers are referred in a timely manner, and women express satisfaction with the care given) The district Safe Motherhood trainers interviewed during the study also indicated that in addition to teaching fellow midwives, they have extended their teaching activities to women groups, TBAs, and adolescents within reach of the district hospital catchment area This initiative has improved the relationship between the community and the hospital, as well as improved the proper use of the health facility for antenatal, labor and delivery During the survey, a few women (38) who had participated in this training were asked how the course had benefited them In response, the women indicated that the information was useful as it had assisted them to take care of themselves and also to provide constructive advice to others Some of their responses are shown in Box 7

BOX 7 USEFULNESS OF INFORMATION DISSEMINATED TO WOMEN WHO PARTICIPATED IN TRAINING BY DISTRICT SAFE MOTHERHOOD TRAINERS

I now know that maternal deaths are not caused by witchcraft but by frequent pregnancies, having too little blood, losing too much blood at delivery, induced abortion and prolonged labor (30 women)

After the trainer gave us the talk, I have started to use modern family planning methods, and I am not afraid anymore of contraceptive pills (20 women)

I am now trying to eat well to avoid malnutrition (38 women)

I'll never take herbal medicines anymore to hasten labor, and we have agreed with my friends to start antenatal early next time we are pregnant (35 women)

I shared the information with my friend and neighbors at a water pump (15 women)

My friend and I are now going for tubal ligation (5 women)

Utilization of Manual Vacuum Aspiration for the Management of Incomplete Abortion - Manual Vacuum Aspiration (MVA) was recommended by the Safe Motherhood Strategic Plan as a better and more cost-effective way of reducing morbidity and mortality related to post-abortal sepsis Use of the MVA started at one teaching hospital by the Department of Gynecology of the College of Medicine in 1994 but now has spread to eight district hospitals At first, only medical doctors were trained to carry out the procedure, but now it has been extended to registered nurse midwives As most women who seek care for incomplete abortion indicate that the pregnancy was unintended, MVA is now coupled with post-abortal family planning counseling Data from the teaching hospital where MVA was initiated shows that the number of abortion cases managed through MVA technology is steadily decreasing, probably due to the provision of family planning services as part of the abortion care

The most common methods of family planning used by the post-abortal clients include lofemenol, depoprovera and condoms Apart from motivating women to use family planning methods to prevent unwanted pregnancies, the introduction of the MVA has also managed to reduce the admission rate to the gynecological unit of the hospital as patients are managed on an out-patient basis and post-abortal sepsis has been reduced The district hospitals that are now using MVA have also observed a drastic change in the admission rate in the gynecological ward, as well as a reduction in the use of general anaesthetic agents and of the operating room

Provision of treatment guidelines/protocols for the management of obstetric emergencies - To ensure that women who develop complications receive appropriate care, the Safe Motherhood program has attempted to design treatment guidelines for the management of common obstetrical emergencies The guidelines are divided into two categories to depict management at the health center and district hospital levels The conditions being addressed in the treatment guidelines are reflected in Box 8

BOX 8 COMMON EMERGENCIES INCLUDED IN THE MALAWI OBSTETRICAL TREATMENT PROTOCOLS

1 Antepartum hemorrhage due to abruptio placenta

2 Antepartum hemorrhage due to placenta praevia

3 Obstructed labor

4 Ruptured uterus

5 Pregnancy-induced hypertension and eclampsia

6 Genital sepsis

7 Primary and secondary postpartum hemorrhage

8 Post-abortal hemorrhage

9 Anaemia in pregnancy

10 Malpresentation/malpositions

11 Intrauterine death

12 Induction of labor

13 Premature rupture of membranes

14 Previous uterine caesarean section

15 Twin delivery

Box 8 shows the guidelines have included conditions that may not be termed obstetrical emergencies to accommodate nurse-midwives who function in health centers where services of an obstetrician or a physician are not available However, recommendations are for the health center nurse-midwife to refer all complications to the district hospital and to only provide resuscitative care under certain conditions The Safe Motherhood program manager reported that information on the treatment flow charts will be made into a pocket book with detailed information to serve as a reference a health worker can easily carry in his or her pocket The treatment guidelines, for use in both private and public institutions, also serve as teaching materials during the life-saving skills training for midwives

Use of confidential maternal death audit - To assist district health management teams evaluate the quality of their own care, a confidential maternal death inquiry has been introduced in the country At the time of the study, four district hospitals committees (Mangochi, Mwanza, Kasungu and Mzimba) had been trained to conduct the audit Serving on each committee are a district health officer (a medical doctor), a district nursing officer, a district Safe Motherhood trainer, a clinical officer, and other two midwives from the Maternity Unit

Reports from these hospitals show that the maternal death inquiry is an important tool in addressing some of the preventable causes of maternal death For example, one maternal death inquiry conducted in Mangochi hospital resulted in both clinical and administrative staff taking active measures to address issues of infection, lack of blood for emergency transfusion, and an emergency transport system Box 9 provides information on the actual activities recommended during an audit of maternal deaths that resulted from puerperal sepsis and postpartum hemorrhage

BOX 9 RECOMMENDATIONS MADE FOLLOWING A MATERNAL DEATH AUDIT (SOURCE *MONKEYBAY SAFE MOTHERHOOD PROJECT PROGRESS REPORT*, FEBRUARY 1997

RECOMMENDATIONS	PERSON RESPONSIBLE
Organize fund-raising campaign among commercial farmers to buy a fridge for blood banking	District health officer and district commissioner
Train maternity and theater staff on infection-control measures	District Safe Motherhood trainer
Conduct regular microbial testing of labor ward beds and floor	Laboratory technician and district nursing officer
Autoclave all delivery packs and gloves	Labor ward sister and matron
Introduce emergency antibiotic therapy for mothers and prolonged labor or early rupture of membranes	District health officer and Safe Motherhood trainer
Ensure safety of ambulances that transfer patients from health centers at night	District health officers and district police commissioner

As some of maternal deaths occurred due to late utilization of health facilities as well as use of herbs for speeding the process of labor, implementation of these recommendations was accompanied by community meetings The hospital has now secured a fridge for its blood-banking system, episodes of puerperal infection have been reduced, and communities are responding positively to IEC messages on the timely use of health facilities and avoiding the use of local pitocin to speed the labor process The police have also heightened security at night to ensure that ambulances from peripheral units to the district hospital are not attacked

Reducing High-Risk Pregnancies

Malawi's total fertility rate (TFR) is estimated to be at 6 7 (MDHS, 1992) This high fertility rate places the life-time risk of maternal death for a Malawian woman at 1 in 29 The Safe Motherhood Initiative strategic plan, therefore, endorsed the intervention proposed in the Malawi Family Planning Policy and Guidelines, whose target is to reduce TFR to 5 and increase the current contraceptive prevalence rate (CPR) to 28 percent from 14 percent by the year 2000 Interventions being implemented to achieve these targets include

- ❒ provision of family planning services in all static and outreach clinics,
- ❒ liberalization of family planning services to all women of child-bearing age, including adolescents,
- ❒ operating work-based family planning clinics and man-to-man family planning clinics, and
- ❒ conducting family planning advocacy and IEC campaigns

The survey noted that hospital-based family planning services are integrated with antenatal, postnatal and under-five clinics At the health center level, service delivery is not integrated, and shortages of health personnel and space were cited as the main obstacles Permanent contraceptive methods, including Norplant, are being offered at the district hospital level as well, but are not as popular as injectables and oral contraceptives

PREVENTION OF STD/HIV/AIDS

Services for the management of sexually transmitted diseases (STDs), including prevention of STDs/HIV/AIDS, are not integrated with other reproductive health services Instead, they are offered on a daily basis in out-patient departments Pregnant women or family planning clients with STDs are therefore referred by midwives to the out-patient department to receive treatment However, the National AIDS Control Program is embarking on a training program for health workers on the syndromic approach to STD management, and midwives who have participated in this course are now allowed to keep STD medications at the antenatal or family planning clinics to ensure that clients are served at one point As part of HIV/AIDS-prevention efforts, all hospital facilities have the capacity to screen blood before transfusion, but the survey observed that reagents are not adequate—risking the danger of transfusing unscreened blood

INVOLVEMENT OF COMMUNITIES IN THE IMPLEMENTATION OF THE SAFE MOTHERHOOD INITIATIVE

A review of background information on the implementation of the Safe Motherhood Initiative in Malawi showed that communities are doing much more than just disseminating information on safe practices for maternal and neonatal care The review showed that TBAs have been involved in providing antenatal and delivery services since the early 1980s and that their contribution to providing clean and safe deliveries is estimated at 18 percent Another category of village-based health workers who are assisting in the provision of maternal health care are community-based distributing agencies (CBDAs) who motivate and distribute contraceptives at the village level To identify the exact roles played by the village-based maternal health workers, 30 TBAs (10 from each region) were purposely selected from three of the country's districts (Lilongwe in the Central Region, Mangochi the Southern Region and Nkhatabay in the Northern Region) to be interviewed on the nature of their work

Role of the TBA in the Safe Motherhood Initiative - The analysis showed that TBAs are very active and busy, as their delivery registers showed a monthly average of 20 deliveries The registers also showed few negative maternal and fetal outcomes of these deliveries For example, of 4,540 deliveries recorded in 1996 among the 30 TBAs, there were only two episodes of maternal deaths and four fresh still births Regarding preparation for their roles, all 30 TBAs indicated that they were formally trained by their respective district hospitals, and they had now been practicing for over six years In addition to this formal training, the TBAs indicated that they had also attended a one-week refresher course in late 1996 and are visited by district midwives (TBA coordinators) who provide them with advice on their performance and supplies To assess the level of knowledge and practice among the TBAs, the survey asked them about care of the cord and the complications of pregnancy that would cause them to refer a mother to a health center or hospital for delivery Boxes 10 and 11 show their responses

BOX 10 CARE OF THE CORD BY TBA (N=30)

METHOD OF TREATMENT FREQUENCY

METHOD OF TREATMENT	FREQUENCY
Nothing	19 (62%)
Ash	0 (0%)
Herbs/flower	0 (0%)
Dung	0 (0%)
Pestle dust	0 (0%)
Spirit	7 (24%)
Powder	1 (3%)
Soap and water	4 (5%)
Other	2 (6%)
	N = 30 (100%)

BOX 11 RECALL BY TBA OF PREGNANCY COMPLICATIONS NEEDING PROMPT REFERRAL (N=30)

COMPLICATIONS	FREQUENCY
Abdominal scars	20 (68%)
Persistent headache	13 (42%)
Swelling	15 (51%)
Anaemia (pallor)	7 (12%)
Cessation of fetal movement	13 (43%)
Abnormal lie	3 (10%)
Sepsis	14 (46%)
Heavy bleeding	14 (47%)
Obstructed labor	13 (43%)
Primigravidity	15 (48%)

The data in the two boxes indicate that TBAs are adopting the practices imparted to them during the formal training, as well as during the supervisory visit As most of the population in this country lives about 15 kilometers from a health facility, TBAs still have a vital role to play in the implementation of the Safe Motherhood Initiative Yet, there is still a need to regularly provide them with supplies, as the survey showed that some TBAs did not have all the necessary supplies, especially spirit Identification of risks also needs to be stressed during training, as anaemia, obstructed labor and hemorrhage were only cited by half of the sample as reasons for referring a mother to a health facility for further management

Role of the CBDA in the Safe Motherhood Initiative

To identify the role played by the village-based family planning providers and how they are prepared for such a role, the survey interviewed 12 CBDAs from Dedza District in the Central Region The study observed that introduction of the CBDA program has contributed to raising the contraceptive prevalence rate (CPR) from 7 in 1992 to 14 4 in 1996 The 12 CBDAs interviewed during the survey indicated that they distribute contraceptives by visiting homes of eligible clients, visiting public places like markets or trading centers, or attending to motivated clients who visit their homes for contraceptives Similar to the TBAs, CBDAs mentioned that before starting their voluntary work, they were selected by chiefs and were given two weeks'

training by the district hospital family planning personnel Supervision is provided by a health surveillance assistant (a salaried multipurpose community-based health worker) and sometimes the CBDAs report to the nearest health centers to receive in-service education and collect more supplies Since one of the major aims of the Safe Motherhood Intervention program is to reduce the high number of pregnancies, it is hoped that availability of contraceptives at the village level will assist families, as well as single persons, avoid unintended pregnancies

STRENGTHS, WEAKNESSES, RECOMMENDATIONS

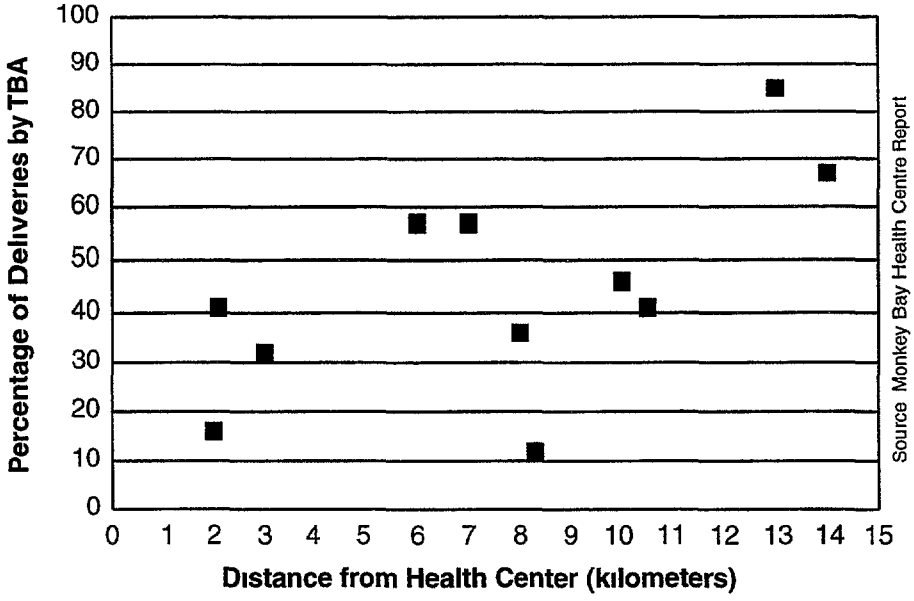
STRENGTHS

The results of the survey indicate that Malawi has made a commitment to improving the health status of women by providing essential obstetric and neonatal care An indicator of this commitment is the inclusion of safe motherhood as a priority program in the National Health Policy Framework (1995), as well as the identification of Safe Motherhood Initiative interventions in the proposed National Health Strategic Plan (1997) as part of the essential health package to be made available to all Malawians—especially women of child-bearing age Although the financial allocation made for Safe Motherhood Initiative interventions in the 1998-99 budget is inadequate, it indicates the general economic situation of the country rather than a lack of commitment by the law makers On its part, the Ministry of Health and Population has tried to popularize its Safe Motherhood Initiative program with potential donors, and the survey noted a positive response from donors such as UNICEF, UNFPA, and EU

As implementation of the Safe Motherhood Initiative is in its infancy, it is difficult to detect if any impact has been made on the incidences of maternal mortality Because hospital figures are not representative of deaths that take place in the community, no attempt has been made to determine if there is any reduction in maternal mortality from the 1992 level of 620 deaths per 100,000 live births On the other hand, process indicators seem to indicate that some progress is being made For example, data collected at two health facilities visited during the survey show an increase in health-facility utilization

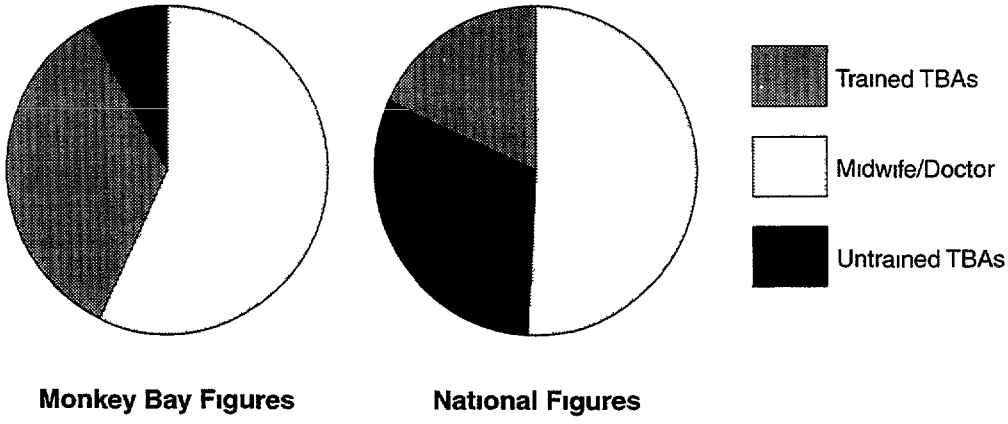
Although the table above shows that more women are now using health facilities during pregnancy and delivery, there is a discrepancy between the number of women who attend antenatal clinics and those who are delivered by the health personnel This may indicate either that women value antenatal care services more or that the health facilities are too far away for the women to walk to when in labor so that they opt to deliver at TBA birthing centers or to be assisted by a family member in their own homes The data supports the latter view, as Figure 1 shows that the proportion of TBA-supervised deliveries increases as the distance from the health center increases

Figure 1 Percent of Deliveries by TBAs as Proportion of HC Deliveries Based on Distance



It is worth noting that the women who opted to deliver outside the formal health sector chose to be delivered by trained TBAs, consequently, a number of districts have noticed a decrease in deliveries supervised by untrained TBAs Figure 2 shows that the number of deliveries by untrained TBAs are lower than the national figures from the 1992 Demographic Health Survey

Figure 2 Comparison of Place of Delivery Between Monkey-Bay and National Figures



This preference to be delivered by trained TBAs shows that the Safe Motherhood Program has reached a wider audience with its message on the importance of clean and safe delivery in the prevention of maternal mortality To ensure that trained TBAs provide services within their scope of practice, supportive supervision should be strengthened Construction of health centers for underserved rural areas, as well as training of more midwives, should also continue to ensure that TBAs have adequate referral facilities Training of more midwives will not only provide adequate referral for TBAs, but also the personnel required for integrating health services Currently, only district hospitals have integrated antenatal, postnatal, family planning and under-five care, while health centers provide these services on separate days, which inconveniences a lot of women

Another strength in the implementation of the Safe Motherhood Initiative is the wide scope of practice for midwives The study noted that the Nurses and Midwives Act of Malawi 1966, amended in 1995, allows the midwife to carry out a number of procedures, such as inserting an intrauterine device, conducting manual vacuum aspiration for abortion complications, and performing complicated deliveries, including twin deliveries The midwife can also prescribe a number of drugs, including antibiotics and anti-hypertensive for pre-eclampsia or eclamptic mothers Plans to train midwives in using the rapid plasma reagent (RPR) for testing as well as in testing for hemoglobin by using WHO Hemacules will certainly ensure that services are available to women even in remote health centers

As availability and accessibility of quality and comprehensive essential obstetric care is the ultimate strategy for reducing Malawi's maternal mortality, it is hoped that efforts will also be focused on interventions that will empower women to take charge of their own health Such interventions include investing in girls' education, sensitizing families on gender equity, and providing opportunities for women to take part in the country's socio-economic development activities

WEAKNESSES

The safe motherhood advocacy meetings and IEC campaigns have raised demand for health facility obstetric care or delivery by a trained TBA, but the health care system is not adequately equipped to meet this demand For example, there are communities that reside in rural, underserved areas where health facilities are more than 20 kilometers away, making it difficult for pregnant women to walk during labor if trained TBAs are not within reach to provide clean and safe delivery services

Other weaknesses include the inadequately trained midwifery personnel in maternity units Most health centers are manned by one midwife who works 24 hours without rest, and it is doubtful how this one person can function effectively under those conditions Therefore, it is possible that some women may not receive adequate care even in a hospital or health center setting It was also noted that the standard equipment list adopted from the mother-and-baby package of interventions is not available in some health facilities because district health management teams

do not receive adequate funding to purchase the recommended equipment, drugs and supplies As a result, quality of care is being compromised

Another weakness regarding the government's commitment is the lack of vital registration to enable easy collection of maternal death statistics It is hoped that recommendations made during the advocacy meetings for parliamentarians, chief and district development committees to introduce a vital registration law will be effected very soon

RECOMMENDATIONS

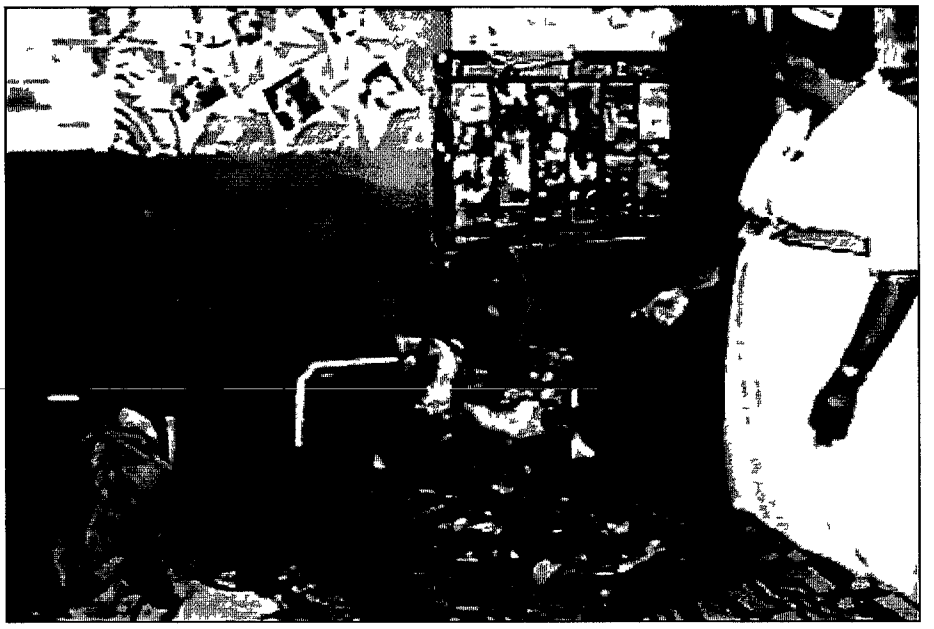
Government should try to increase the safe motherhood budget line to ensure that essential supplies, equipment, drugs and supplies are available at all times

Midwifery schools should train more midwives to improve the staffing situation in rural health centers

Improvement of staffing levels should be accompanied by the introduction of better working conditions for personnel that have sacrificed to work in the remote areas of the country

To improve accessibility of services, facility managers should be given technical advice on integration of services so that women can come and receive care on any day of their choice

Report from Uganda



COUNTRY PROFILE

Uganda, lying astride the equator and north of Lake Victoria, is divided into 45 administrative districts and over twenty language groups Its projected population at the end of 1997 was close to 19 million, 90 percent of whom are largely rural and peasant farmers

Although Uganda was granted independence from Britain in October 1962, the post-independence period has been marred by civil wars, military government rule from 1971 to 1979, and major socio-economic upheavals from 1971 to the late 1980s During those years, the health services seriously deteriorated at all levels Currently, up to 40 percent of health care services are provided by non-governmental organizations

MATERNAL MORTALITY AND MORBIDITY

Since modern medical practice was introduced in Uganda about 100 years ago, many advances have taken place For example, there have been substantial gains in alleviating childhood mortalities by nutritional intervention and immunization programs Although maternity services were among the first to be introduced into the country by church mission groups, the first study on maternal mortality was not done until the late 1950s by Rendle Short, C W

NOTE A detailed review of the literature on maternal mortality and morbidity in Uganda can be found in the Uganda Appendix

Maternal mortality was neglected largely because its importance was not appreciated, data was difficult to collect, and there were other diseases (such as malaria and tuberculosis) that were of more immediate concern to the colonial administrators and their local elite counterparts In that era, spending money to collect information on deaths of "native" women as a result of pregnancy complications and childbirth was not even considered

After the 1987 Safe Motherhood meeting in Nairobi, the Government of Uganda adopted the Safe Motherhood Initiative conceptual framework to address the plight of women during the reproductive period in their lives A women's non-governmental organization (NGO) initiated some of the early safe motherhood activities in the country as early as 1990 This NGO was active in over ten districts, mainly sensitizing the community to safe motherhood practices Community-based health workers, called Safe Motherhood Assistants, were recruited and trained to carry out community education and advocacy for reproductive health

At about the same time, the Nurse Midwives Council initiated a MotherCare project to provide continuing education to midwives in the country, with technical assistance from the American Nurse Midwives College American Life-Saving Skills modules were adapted to the local needs by a national team consisting of professionals from the Ministry of Health, the Makerere University Medical School, the Nurse Midwives Council, professional associations, and

important stakeholders Initially, training of midwives was carried out in two centers for four districts between 1991 and 1993 By the end of this training, over 200 midwives had been trained in ten districts

Despite these efforts and Uganda's embracement of the concept of safe motherhood, there has been little discernable improvement in maternal and neonatal health over the past decade While much effort and many resources have been applied towards the re-establishment and rehabilitation of the extensively war-ravaged national health infrastructure, the basic indicators of maternal and child health remain among the poorest in the region

Maternal mortality in Uganda still remains high, with a national average figure of 506 per 100,000 live births (1995 UDHS) Different studies done at the community level reveal figures ranging between 300 per 100,000 live births to 650 per 100,000 live births in some districts However, WHO/UNICEF estimates maternal mortality ratios in Uganda to be on the order of 1,200 per 100,000 live births Mulago Hospital figures for 1997 reveal a maternal mortality of 771 9 per 100,000 live births The prevailing high rates of fertility in an environment of restricted access to quality maternal and neonatal care have continued to expose Ugandan mothers and infants to the highest lifetime risks of dying from pregnancy and delivery-related causes

Uganda's goal, given its peculiar position and environmental factors, is to reduce the present levels of maternal mortality by 30 percent by the year 2000

The Ministry of Health has been addressing safe motherhood through

- ▼ Antenatal care
- ▼ Clean/safe delivery
- ▼ Essential obstetric care, including strengthening of the referral system
- ▼ Advocacy and community mobilization—from the grassroots to the highest political level—for safe motherhood
- ▼ A Safe Motherhood Steering Committee (already in place)
- ▼ Human resource development at various levels to build capacity for clinical and community skills
- ▼ External and internal resource mobilization
- ▼ Strengthening of family planning services

▼ Provision of obstetric/midwifery equipment

▼ Strengthening of health management information system for maternal and newborn care

▼ Increased access to maternal and newborn care, including trying innovative means of transport and communication and improving/upgrading health facilities

As with the rest of the region, firm data on neonatal mortality for Uganda is difficult to come by, but what information there is points towards a situation wherein most of the gains in infant mortality reduction achieved over the past five years are attributed to reductions in post-neonatal deaths Thus, while the infant mortality rate has declined from 122 per 1,000 in 1989 to 97 per 1,000 live births in 1995 (UDHS 1989 and 1995), a much greater level of reduction could have been achieved had there been a concomitant reduction in the neonatal deaths component

Judging by data from the National Referral Hospital Mulago, the neonatal death rate, estimated at 41 per 1,000 live births (1989 UDHS), has hardly improved since the early seventies Needless to say, there is not much statistical data in the area of perinatal health nationally Much remains to be done

In 1994 and 1995, Uganda undertook a national assessment of the burden of disease, but because of the inadequacy of morbidity data available, the study was limited to the more absolute parameter of deaths This national assessment found maternal and perinatal deaths as among the highest contributors to Uganda's burden-of-death profile

The magnitude of this national tragedy becomes even more vivid when one considers that for every mother who dies as a result of pregnancy or child birth, at least 30 others are left severely incapacitated by one or another of the sequelae, such as vesico-vaginal fistulae, urinary incontinence, utero-vaginal prolapse, chronic pelvic inflammatory disease, and infertility (WHO) Similarly, sub-lethal birth asphyxia is believed to result in significant numbers of severely brain-damaged children, as well as an even larger number of children left permanently intellectually compromised

The main causes of maternal and neonatal morbidity and mortality in Uganda are identical to these of countries in a similar state of development, namely (1) abortion, (2) hemorrhage, (3) obstructed labor, (4) sepsis (neonatal septicaemia, pneumonia and other ARIs, neonatal tetanus, meningitis, local skin infections), (5) eclampsia, and (6) anaemia

Factors Underlying High Morbidity and Mortality in Uganda

The main underlying factors are diverse and complex but related primarily to poverty and the generally disadvantaged status of Ugandan women Deep-rooted socio-cultural factors, discriminatory traditional practices and low levels of education among females condemn them

from a very early age, the vast majority of Ugandan women experience too frequent and uncontrolled childbearing

Although the contraceptive prevalence rate (CPR) has recently shown a significant increase—from 5 percent in 1988 to 15 percent in 1995—Uganda's total fertility rate (TFR) of 6 9 children per woman remains exceptionally high

Child-bearing begins early in Uganda Two in five teenage women (age 15-19) have begun childbearing, with 34 percent having had a child and 9 percent carrying their first child By the time they reach the age of 19, over 70 percent of Ugandan women have either given birth or are pregnant with their first child (UDHS 1995) Adolescent pregnancy is associated with a number of obstetric complications, increased operative delivery, and high maternal morbidity and mortality

HIV/AIDS and Maternal Health

It is becoming increasingly clear from research and observations in the hospitals that HIV/AIDS-related complications are contributing a great deal to morbidity and mortality HIV-positive pregnant mothers arrive at health units with some of the following complications

- ▼ Pneumonia and tuberculosis
- ▼ Meningitis, both pyogenic and cryptococcal
- ▼ Wasting
- ▼ Severe puerperal infection

It is estimated that one child in three born to an HIV-positive mother may become infected with the virus (26 percent at Mulago hospital) The risk of transmission varies in different situations and locations but can be significantly reduced in a number of ways Various interventions are under way to reduce vertical transmission For instance, the mother and baby can receive anti-retroviral drugs before, during and after delivery (Uganda is one of the countries in which anti-retroviral drugs are being used to reduce vertical transmission on trial basis) Unfortunately, this intervention is still expensive

Malaria

Studies and observations from Kenya (Kisumu) and Uganda show increased morbidity and mortality among pregnant women with malaria Reports from Mulago National Referral Hospital indicate that perinatal morbidity and mortality is increased in women presenting with malaria Similarly, it is now common that the high fevers and anaemia due to malaria cause considerable morbidity, especially in women who are HIV-positive

The following have been observed in HIV-positive mothers who present with malaria

- Increased severe attacks of malaria with reduced response to the standard dose of anti-malarials
- Increased perinatal wastage
- Increased incidence of low birth weight
- Reduced mean haemoglobin

Some causes of neonatal mortality are

- Birth asphyxia
- Sepsis
- Prematurity
- Birth injury
- Hypothermia
- Congenital abnormality

Blood Donation

Culturally, there are not many people willing to donate blood, the exception is young people attending school Therefore, Ugandan health units experience seasonal shortages of blood when students are on holiday This is unfortunate in an environment in which many women (about 17 percent) experience obstetric haemorrhages and die and where anaemia contributes to 9 3 percent of all maternal deaths Unfortunately, some blood donated by adults is found to be HIV-positive and therefore unsuitable for transfusion

HEALTH SERVICES

Where the fee-for-service concept has been introduced, health services tend to be unfriendly to rural women—a low-income group—thereby hindering their ability to access health services in some cases

Although civil service reforms have affected men and women, women have been disproportionately affected because of the added responsibilities that women have to undertake once they become the sole breadwinners in a family Not only do they have to ensure that the family eats and the children go to school, but also that the medical bills are covered This is not always possible

THE SAFE MOTHERHOOD INITIATIVE

As part of the national poverty eradication action plan, the Government of Uganda has recently, through the constitution and national policy statements, explicitly reaffirmed its total commitment to improving the health and welfare of all Ugandans, with special emphasis on the health of women and young children The National Safe Motherhood Programme constitutes the basic foundation of Uganda's strategy to achieve an accelerated and significant reduction in maternal and infant morbidity and mortality

This program is executed by the Mother and Child Health and Family Planning Division of the Ministry of Health, and its coordinator is supported by the World Health Organization Country Programme Since 1995, safe motherhood activities in Uganda have been initiated and coordinated through this office However, various stakeholders sponsor different activities, such as the renovation of health units, training of midwives and doctors in life-saving skills, and equipping of health facilities The goals of the program are to

- ▼ reduce maternal mortality by 30 percent of the 1995 levels by the year 2000 through the provision of a comprehensive range of high quality reproductive health services and

- ▼ contribute towards the reduction of the infant mortality rate (IMR) by 30 percent of the 1995 level by the year 2001, through an accelerated reduction in the neonatal component of the IMR

Strategies to achieve these goals are

- ❒ ensuring sustained political and community commitment to safe motherhood

- ❒ improving the quality and accessibility of maternal health and obstetric care

- ❒ developing human resources for safe motherhood

- ❒ ensuring access to family planning

- ❒ strengthening monitoring and evaluation research for safe motherhood

- ❒ strengthening IEC and advocacy for safe motherhood

- ❒ strengthening health management information systems

- ❒ redressing social inequities confronting the status of women

Major activities will focus on the following areas

▼ Advocacy/IEC to mobilize and sensitize the community for safe motherhood at the national, district, sub-county, and village levels

▼ Training of physicians, midwives, medical assistants, nursing aides, and TBAs

▼ Equipment, including MCH Kits A&B, Neonatal Resuscitation Kits, Caesarean Section Sets, MVA, Vacuum Extractors

▼ Transport and communication systems, such as 3-wheelers, bicycle ambulances, local stretchers at the community level, ambulances in the most appropriate form at the health center level, and traditional ambulances at the hospital level

▼ Appropriate research

Objectives of the interventions

* Promote family planning and reduce the incidence of mis-timed and unwanted pregnancies

* Reduce maternal deaths due to complications of abortion

* Provide basic maternal care to all pregnant women

* Promote, protect and support early and exclusive breast-feeding

* Reduce anaemia in pregnant women

* Reduce sexually transmitted diseases in pregnant women

* Reduce maternal deaths due to eclampsia

* Reduce maternal deaths due to haemorrhage

* Reduce maternal deaths due to prolonged/obstructed labor

* Reduce maternal deaths due to puerperal or post-abortion sepsis

* Eliminate neonatal tetanus

Requirements for Successful Implementation

Because they are expensive and time-consuming activities, advocacy and community mobilization need to be systematic, and those carrying them out need to be committed Training materials need to be standardized and adequate supplies available In addition, national training sites should be developed and regional teams formed to supervise the training Once this is done, the courses need to be institutionalized and follow-up training and/or supervision scheduled

Equipment should be systematically handled, including its maintenance and management Care should be taken that those handling the equipment have the skills necessary to do so Hospitals need to pay special attention to these issues

There needs to be community commitment and ownership of transport and communication Much needs to be done in the area of Information, Education and Communication

Finally, the Mama Kit needs to be developed to ensure clean, safe deliveries

Service Delivery Factors

Between June 1995 and February 1996, as part or the preparatory activities for the implementation of the Mother-Baby Package, the Ministry of Health—in collaboration with GTZ, UNFPA, UNICEF and WHO—conducted an extensive and in-depth Safe Motherhood Needs Assessment Survey in 14 of the 39 districts of Uganda The full details of the survey findings and recommendations are obtainable from the Ministry of Health in the document *The Safe Motherhood Needs Assessment Survey 1995/1996* Among the main findings were

Access to Care

- While national policy on maternal and newborn health had been comprehensively reviewed and updated, it was still not widely known to the majority of stakeholders

- Access to maternal and child services was found to be patchy and restricted, in that some 24 percent of health centers offered antenatal care and only 67 percent offered normal delivery services

- Only one third of health centers provided any form of care for complications of abortion and one third could not manage sexually transmitted diseases

Quality of Care

- Only 60 percent of the staff who normally conduct deliveries at health centers had midwifery qualifications

- Most staff at most health facilities had no idea about their respective target populations, service coverage rates, births or mortality rates

- Over half of the delivery records were found inadequate, and only 18 percent of health facilities used the partograph to monitor labor

- Adequate basic MCH/FP quality care indicators were found lacking in most health centers

- One third and two thirds of health personnel and traditional midwives (TBAs), respectively, received no supervision in the six months preceding the survey

- Less than 30 percent of midwives had received any form of in-service training during the five years prior to the survey

- Family planning supplies and basic equipment were available in only 51 percent of health centers and 77 percent of hospitals

- Only 57 percent of hospitals had equipment for general anaesthesia, and over 40 percent of hospitals did not have trained anaesthetic manpower

- Over 50 percent of health centers and 17 percent of hospitals had no ergometrine in stock at the time of the survey

- 75 percent of health centers had no mucus extractors and only 9 percent had a bag and mask for resuscitation

- Lack of transport and communication were universal problems in all the districts

Community Awareness of Risk Factors

- Other than for bleeding during the antenatal period, knowledge by mothers of the main danger signs during pregnancy and labor was very low, at between 16 percent and 18 percent for most of the common danger signs and symptoms

- Availability of relevant health education materials was very low—in quantity and quality—both at health centers and hospitals

UTILIZATION OF MCH/FP SERVICES

Antenatal Care

The 1995 Uganda Demographic and Health Survey showed continuing high levels of utilization of prenatal care services However, the median time at which mothers start antenatal visits is 5 9

months, and the median number of antenatal care visits was 4 1 Therefore, pregnancy monitoring and detection of complications is late and limited

Supervised Delivery by Trained Personnel

Institutional delivery and deliveries supervised by trained health personnel have remained stubbornly low, with only 48 percent of all deliveries being conducted by trained staff (including TBAs) in 1995 In comparison, the figure for 1989 was 45 percent (1989 UDHS)
Since 1987, there has been a global effort to focus on safe motherhood, basically through advocacy By 1994, WHO, UNFPA, UNICEF, World Bank and others realized that there had been no impact made in reducing maternal mortality and morbidity WHO recommended the Mother-Baby Package guidelines for implementing safe motherhood in developing countries This package, which is currently being implemented in Uganda, focuses on proven interventions at the community, health center and district hospital levels

The midwife is a key person for the smooth implementation of the Mother-Baby Package It has, therefore, been necessary to expand the skills of the midwife to include the following

- ▼ Community mobilization, sensitisation and counselling
- ▼ Scientific monitoring of labor using a partograph
- ▼ Ability/authority to set up IV drips
- ▼ Ability/authority to prescribe antibiotics
- ▼ Manual removal of placenta
- ▼ Repair of perineal tears and lacerations
- ▼ Initiation of treatment of hypertensive disease of pregnancy
- ▼ Management of abortion, with emphasis on the use of Manual Vacuum Aspiration

Hitherto, these responsibilities belonged only to the medical doctor But since doctors are few and are based mostly in hospitals, increasing access to services entails imparting these skills to midwives

Furthermore, there is a scarcity of anaesthetic officers in hospitals, whereas medical officers are available As a stop-gap measure, medical officers are being offered in-service training in basic emergency obstetric anaesthetic skills so that obstetric emergencies can be handled In the long term, it will be necessary to train and post anaesthetic officers in all facilities handling obstetric emergencies

Immunization Coverage

More than 50 percent of pregnant women receive two or more doses of Tetanus Toxoid Six percent receive one dose, while 20 percent of births do not benefit from any tetanus toxoid (UDHS 1995) Similarly, while uptake of the TB vaccine (BCG) and the first dose of the Oral Polio Vaccine (OPV), both given to infants at or soon after birth, has remained consistently high (83 6 percent), only 47 percent of infants are fully immunized, that is, they have received the full complement of doses of the six antigens at the appropriate time intervals

SAFE MOTHERHOOD INTERVENTIONS

To further safe motherhood, the Ministry of Health completed a needs assessment and identified gaps Following this assessment, it developed a strategic plan, with safe motherhood interventions taking place in four broad areas, namely

At the community level through mobilizing communities using information, education and communication Various categories of community reproductive health workers (traditional midwives, safe motherhood assistants, etc) have been empowered through training, provision of equipment, and support supervision to offer improved midwifery care and information as well as timely referrals

Communities are being sensitized to strengthen the various traditional means of transport for women with pregnancy-related complications Modes of transport includes the Ngozi group's "helicopter " Furthermore, communities are being mobilized to collect and pool funds so they can access modern means of transport and maternity care to enhance speedy referral Since maternal mortality affects the whole family and community, it is imperative to emphasize the role of men in reducing maternal mortality and morbidity

At the health center level, the first level of contact between the formal health services and the community The Mother-Baby Package recommends a midwife as a critical member of the health personnel at this level Many health centers in rural areas are being manned by nursing aides The challege to the district leadership is to recruit midwives in this important area, otherwise, there may be no reduction in maternal mortality and morbidity

Another need at this level is for a means of communication and transport to the higher level of health care Failure to provide this may mean condemning mothers to death since they cannot access emergency obstetric care The Ministry has a policy of upgrading at least one health center per county to offer emergency obstetric (and other emergency) care

At the district hospital level, which in most districts has been the only level where emergency obstetric care was available As a result, rural women have problems because they do not have timely access to emergency obstetric care The upgrading of at least one health center per county will ameliorate this problem

At the health sub-district level, whereby hospitals take charge of primary health care services and inteventions within their catchment area They conduct outreach programs and take services to the people in order to promote preventive services within any given community

Thus, the overall strategy of the safe motherhood interventions is to strengthen the health system from the community level to the district referral hospital level This is by no means an inexpensive undertaking It calls for some minimum interventions, including

- Training and retaining health workers to be able to offer appropriate care
- Equipping all levels of health care, including the community
- Providing means of transport and communication
- Undertaking advocacy, including information, education and communication at all levels of the community

Considering that maternal health is a multi-sectoral issue, there is a need for active collaboration with other ministries—e g, Gender, Education, Judiciary, Works, Transport and Communication, Finance—to strengthen the health system at all these levels In addition, other collaborative efforts—universal primary education, affirmative action for women, lifting of the debt burden for Uganda, poverty alleviation programs, community economic empowerment, and creation of awareness on women's rights—are also needed to enhance the status of women, thus contributing to safer motherhood in the long run

THE IGANGA DISTRICT EXPERIENCE
Improving Access to Quality Service by Strengthening Referrals and Access to Emergency Obstetric Care

Location	Eastern part of Uganda	
Size	13114 sq km, 6 counties, 43 sub counties and 288 parishes	
Population	1,094,000 (1991 census)	
	Children under 1 year	68,633 (4 7%)
	Children under 5 years	292,056 (19%)
	Pregnant women	83,236 (5 7%)
	Other women	252,629 (17 3%)
Maternal Mortality Ratio (1988/97 Survey)	800/1000	
	Survey	273 5 (1996/97)
	National	500/1000
	Infant mortality rate	120/1000
	National	101/1000
	Child mortality rate	208/1000

BACKGROUND

In 1988/89, the UNFPA started to help Uganda strengthen MCH/FP services Activities included

- Sensitization of district health teams and community leaders
- Training of midwives in life-saving skills, Safe Motherhood assistants, male counsellors, and TBAs (85)
- Training of trainers for communication health workers/community-based distributors agents for family planning

- Rehabilitation of health units for family planning delivery points and increase of family planning service delivery points

- Extension and integration of health services in the existing health units and services

- Provision of equipment

  Delivery beds
  Beds and bedding
  Examination coaches
  Family planning equipment
  Delivery kits
  Resuscitation therapy
  Oxygen and oxygen cylinder
  Mucus extractor
  Mask bag
  Sanction pump
  Intravenous fluid/sets

- Constant supply of contraceptives from center down to the beneficiaries

- Strengthening of referral system to

  Improve the health of mothers in reproductive health
  Reduce maternal mortality and morbidity
  Provide a very good network of communication in the district

THE RESCUER (Rural Extended Service Care for Ultimate Emergency Relief) PROJECT

The rescuer project was first piloted in 12 health units (10 of which were rural health units, including islands) and two referral hospitals The system consisted of transport and communication equipment The process is from the patient's home to the TBA's home then to the health unit and eventually to the hospital Until this project was implemented, the referral and transport of patients to the next level of care had been entirely the responsibility of relatives or of the patients themselves, either by using arm chairs or bicycles or travelling on foot

The objectives of the Rescuer Project was to

- ▼ strengthen referral systems,

- ▼ reduce maternal mortality and morbidity,

▼ improve the health of mothers and babies, and

▼ provide a very good network of communication and transport in the district

TRANSPORT AND COMMUNICATION

- Seven tricycles at the health units for collecting patient from the TBAs
- Two ambulances, one in each referral hospital, to collect patients from the health units to the hospitals
- 85 bicycles for TBAs for taking the walkie-talkies for charging and as a means of transport where communication fails
- Two radios at the referral hospitals
- Ten radios put at the sub centers at the rural health units
- 85 walkie-talkies placed in the community with the TBAs (2 in every sub-county parish level)
- Three radios placed in vehicles (two in the ambulances of the hospital) and one in the DMOs vehicle for monitoring
- 38 walkie talkies in health units providing MCH services but with fixed sub-centers of radio calls

Although there were ambulances in the district, other ways of referrals continued to be used because the two ambulances were inadequate to cover the whole district

EFFECTS OF THE REFERRAL SYSTEM

- Increased awareness and acceptance of the community toward the project
- Good communication network within the district
- Increased service-seeking behaviour
- Good working relationship between midwives and TBAs
- Increased recognition of the TBA in the community

- Good working environment in the health units, i e , equipment, improved health services, delivery
- Reduction of maternal mortality and morbidity
- Systematic way of reporting of referral cases, hence chance for intervention
- Capacity-building of health worker and improved accessibility of quality services

CONSTRAINTS

Since the system has not been adapted by the community and the district administration, there is inadequate allocation of funds for the tricycles and ambulances Other constraints include a lack of support supervision, inadequate blood supply to the referral hospital, untrained TBAs who still delay in referring mothers, and a shortage of trained personnel to work in the islands' rural health units

EFFECTS OF THE RESCUER PROJECT

TBA STATISTICS

YEAR	1995	1996	UP TO JUNE 1997
Antenatal care	1,331	3,465	1,221
Deliveries	3,314	5,494	1,009
Maternal death	-	2	-
Referral case	121	146	71

MCH STATISTICS FOR IGANGA DISTRICT (HEALTH FACILITY)

YEAR	1995	1996	JAN-MAR 1997
Deliveries (Normal)	5,410	6,094	1,356
Caesarian section	4,683	6,403	151
Birth Before Arrival (BBA)	2,038	182	40
Referred cases	342	1,028	335
Maternal death	48	33	13
Peri-natal death	28	10	19

RECOMMENDATIONS

- More training is needed, especially of nursing assistants, to solve the problem of personnel to work in the islands
- The untrained TBAs should be trained to reduce the delays in referrals This would also help in reducing the number of patients a trained TBA has to handle
- More midwives should be trained in life-saving skills to empower them to manage obstetric cases
- The number of walkie-talkies should be increased as the present ratio of one walkie-talkie to four TBAs is not adequate
- Community leaders need to be sensitized about the project at all levels
- Because the tricycle cannot move on bad terrain, roads should be improved
- Four-wheel ambulances should be provided to replace the three-wheeler
- Health workers need to be motivated to boost their morale
- Solar panels should be installed to replace electricity-charge batteries to reduce power failure
- A revolving funds among women should be provided to alleviate poverty—one of the reason for delay in reporting to health units
- The allocation of fund for support supervision and fuel for ambulances should be increased
- A study of knowledge, attitude and practice should be carried out on the subject of blood collection and use
- In the long run, health centers at the country level should be manned by doctors and be equipped with emergency obstetric care
- The district authorities need to devise ways to make the project sustainable

ASSESSMENT METHODOLOGY

The objectives of the assessment were to determine (1) the quality of services provided and the training of health providers at all levels, (2) the availablity of equipment and supplies, and (3) how contaminated equipment is managed and waste disposed (sepsis, control) To achieve these objectives, the following methodologies were used

- ❒ Literature review, including an analysis of past documents on safe motherhood
- ❒ Video documentation
- ❒ Interviews with health workers
- ❒ Questionnaires (See Appendix I)
- ❒ Observation
- ❒ Equipment checklist
- ❒ Focus group discussions with youth, women and local council leaders

Throughout the assessment, the focus was on the community's ability to distinguish common and uncommon cases and, therefore, the decision to seek care The field assessment covered the following areas

- ❒ Means of communication in the community
- ❒ Means of transport to and from the village to the nearest health centers and hospitals
- ❒ Community social/cultural practices related to schooling for boys and girls and marriage and how this could impact maternity health for women
- ❒ Community perceptions of health emergencies
- ❒ Information, education and communication on health, especially related to maternity care, available to the community
- ❒ Community pharmacy and other support services
- ❒ Community resources/income-generating activities in relation to maternity care

ASSESSMENT FINDINGS

Background Information (UDHS 1995)

	IGANGA	MASAKA	SOROTI
Total population	1,094,000	969,400	570,300
Rural population	95 3%	90 8%	89 2%
Population growth rate	3 50	2 71	-0 9
Total area km2/Land	12,792/4,803 (1/3rd land)	7,010/5,416 (3/4 land)	10,016/8,300 (4/5th land)
Females 15-49 yrs	44 89%	40 82%	46 39%
Literacy rate	47%	62 3%	47%
Female literacy rate (1991)	38 3%	59 2%	33 5%
Total fertility rate (1991)	7 02	7 51	6 35
IMR/1000 LB (1991)	125	107	116

COMMUNICATION AND TRANSPORT

The prevalent means for signaling the need for emergency obstetric care is by word of mouth and of receiving it by travelling on foot, bicycle, or another form of public transport In all three districts visited (Iganga, Masaka and Soroti), the availability of transport was said to greatly influence the decision to seek care for emergencies Two other important factors were the financial state of the family and the availability of TBAs

The Iganga District is better off than the other two districts because of its radio communication network and its tricycles Some trained TBAs serving wide areas possess radio sets and walkie-talkies, whose base is at the health center and the district hospital Each health center in Iganga has one or two tricycles to collect patients from the community—making referrals a bit easier This strategy could be tried in other districts in Uganda and elsewhere in other countries However, the tricycle ambulance technology needs to be improved to render it reliable in all

seasons These tricycle ambulances cannot be used for very long distances on rough roads Several have overturned under these conditions

In most cases, the delay in decision-making was found to depend on consultations with the household member who controls the finances, normally the male At the same time, these decision-makers were described in the focus group discussions as lacking interest and having no time to attend health meetings Therefore, they miss the information given on health issues This situation could be improved by focusing on improving IEC strategies to raise the level of awareness of the entire community about seeking timely care in obstetric emergencies Furthermore, women of reproductive age need to be empowered to make quick decisions concerning their health through acquisition of essential obstetric care (EOC) knowledge and other skills

The challenge is whether the above strategy can be adopted by other districts in Uganda and in Africa at large If so, how can the shortcomings cited above be overcome? One way is to elicit the full participation of the communities visited in making recommendations

SOCIAL AND CULTURAL PRACTICES

Several social and cultural practices impinge on the reproductive health status of women in the districts visited For example, early marriage was identified as one of the factors contributing to high-risk pregnancies

There is a need for concrete measures to reduce poverty in the communities, especially among the women One result of this poverty is the high number of those dropping out of high school in anticipation of receiving a dowry and then marrying early Records at the health units showed 13- to 14-year-old pregnant girls The community expressed awareness of both the dangers involved in this practice and of the legislation on the legal age for consent and sex in Uganda (18 years) Customary marriages may be arranged for much younger adolescents, especially girls Men may wait until after schooling or until they are settled in a job that can support a family (mid to late twenties) Girls, however, get married in their late teens to early twenties, clearly illustrating the gap between knowledge and practice

The community expressed knowledge of the dangers of teenage marriages and consequent pregnancies, but health care records showed a high level of the latter Data from an adolescent fertility study (1988-1989) showed that among 15 to 19 year olds, 75 percent of males and 68 percent of females were sexually active (Agyei and Epema, 1992) In the same age group, 25 percent had experienced at least one pregnancy, with more rural adolescents pregnant than those living in urban areas The main contributing factors cited in district discussions were lack of sex education, together with unprotected and uninformed sexual experimentation by adolescents, early marriage, and dropping out of school

COMMUNITY RESOURCES FOR SAFE MOTHERHOOD/INCOME-GENERATING ACTIVITIES

Can the community help itself? Yes The white paper on Health Policy notes that the local council structures have created a favourable environment in which to empower communities to participate in their own development, which is conducive to intensified implementation of PHC

There is high level of community mobilization in some districts Depending on the strength and initiative of the parties involved in a particular program, this mobilization varied from one locality to another and even within the same districts In Iganga District, the community was at a high level of empowerment, as demonstrated by their turning a community center in Waitambugwe into a health clinic to meet their needs Similarly, the people of the Butenga community in Masaka District met their health needs by constructing a clinic The assessment team observed a high sense of ownership of this clinic among the communities The women in Butenga have also engaged in several income-generating activities—such as goat rearing and zero grazing—to boost the family financial resources, especially for health care

By contrast, the government-constructed Kinoni Health Clinic in the same district had a very low level of mobilization Among other problems, there was poor management The challenge is how to raise the level of awareness at Kinoni to reach that of Butenga

The Otuboi and Gweri health clinics each had a facility but lacked the personnel to provide emergency obstetric care

INFORMATION, EDUCATION AND COMMUNICATION

The Government of Uganda has recognized radio as the most cost-effective medium for reaching the public, and therefore has given priority to rehabilitating regional radio transmitters Private newspapers and radio stations have become increasingly important in informing, educating and entertaining the public The Ministry of Health has also been working vigilantly through the mass media to help communities recognise when quick decisions to seek medical attention need to be made

The most common practice found was for women to get information from the clinics through talks, posters and personal advice from a midwife This information—mainly about antenatal care, immunization, HIV/AIDS, STDs, hygiene, and nutrition—is given by TBAs, health assistants, nurses, politicians, LCs and opinion leaders This fact implies that people who rarely visit these places—especially men—cannot access this information It was found that the males, who control the finances, never attend health education sessions In Masaka District, men were said to be too busy to attend and also to have a bias about health education Much has to be done to ensure that communities appreciate the need to support blood transfusion services and to know the limitations of traditional healers and TBAs

Another problem affecting district planners, program managers and implementers all over Uganda is the poor quality and meagre quantities of information While a wealth of information is routinely collected on visits to health units, there are many inadequacies in how that information is managed Much of the data collected is not analysed or does not provide reliable or sensitive indicators of program effects There is a tendency to concentrate on measures of input (for example, money spent on numbers of posters produced) rather than on indications of outcome or impact, such as behaviour change (World Bank, *Growing out of Poverty* 1993) Furthermore, data gathered at the district level is rarely used in district planning

COMMUNITY PHARMACIES

These exist in various forms, ranging from hawkers to shops dealing in various drugs The assessment showed a failure to differentiate between those who are qualified to dispense drugs and those who are not There is a danger of both under- and over-dosing (due to self-medication) and from using expired and vandalised drugs, all of which represents a challenge to the government, especially now that the public has been encouraged to carry out self-medication for malaria

In conclusion, on the path to safe motherhood, there needs to be a concerted effort to focus much attention on this first step—recognizing the problem and seeking care The health policy needs to provide a strong component of IEC strategy and messages that are based on research findings This calls for the involvement of the communities in designing of services (from planning to implementation)

SUMMARY OF FINDINGS FROM FOCUS GROUP DISCUSSIONS

Communication and Transport

Apart from Iganga, which has a radio communication network, other districts communicate by word of mouth or a person is sent physically (on foot) to the health center

Transport is still a problem in the districts Even Iganga, which seems better off with tricycles, still faces a problem of terrain and maintenance of this facility In general, the communities do not have community transport

Socio-cultural Practices

Although the legal age for consent and sex in Uganda is 18 years, many people say the youth who do not go to school should marry early since they have no other commitment in life Records in the health facilities confirmed that this perception is a reality

Community Perception of Medical Emergencies

Fever with changed mental behaviour, excessive bleeding, labor lasting more than a day and many other conditions were considered emergencies by community members Treatment is sought immediately but at times it depends on the spouse's opinion, availability of transport, and the financial state of the family

Information, Education and Communication

There is some degree of health education but it is rarely done in groups Mothers attending antenatal care are educated from the clinic talks and posters, while many people are informed through radio, newspapers, gossip and school concerts Some NGOs also educate communities on STDs, HIV/AIDS and nutrition More IEC is needed

Income-generating Activities

More than 90 percent of the people in these districts are peasant farmers Their income comes from the sale of cash crops Apart from cultivating food crops, women do petty trade to make money The men, too, do some work to earn some income The problem is that the men have control of all these monies and decide its usage or even spend it without the consent of their partners

Medical Services

The view commonly held about using the services of a midwife is that the midwives are far away and that visiting a midwife is "demanding a lot," like dressing well, which is the same case if one visited a TBA

Communities participate in management of the health facility and have accepted some degree of cost recovery, but this is not yet established behavior Although the men have control of the money, the women secretly save a little money to use in situations such as the onset of labor

Self-medication is a problem in many communities, as is inadequate inspection and regulation of drug sales Support for the blood bank is poor, with inadequate public education and mobilization for encouraging blood donations, and with many superstitions hindering the donation of blood Because some drugs are readily available, there is a problem of self-medication Also, there is a problem of drug inspection and regulation of drug sales

Programs and NGO Activities

Although the importance of local programs is recognized, there is limited community involvement, which makes sustainability of these programs very difficult

HEALTH FACILITIES AND PERSONNEL

Households and Health Facilities Characteristics

	IGANGA	MASAKA	SOROTI
% households with latrines	67 78	87 34	22 63
% households with safe water	16 48	10 40	27 83
Total beds	680	1179	507
Hospital beds	207	580	270
Total ANC events	80, 824	47, 159	2,112
Total deliveries (1994)	9, 651	5, 978	3, 619
% units offering family planning	31	53	12
% units offering ANC	34	79	32
% units offering delivery care	30	60	24
% units offering lab services (not hospital)	9	22	

Health Facilities and Personnel Distributions

	IGANGA	MASAKA	SOROTI
Hospitals Govt NGO	2 1	1 2	1 1
Health Centers G NGO	7 0	3 7	7 3
Doctors(MO)	11	12	6
Specialists DOC	2	7	2
Midwives Hosp HC	48 49	52 67	41 49
Nurses Hosp	147	165	113
Nurse Aides	341	209	182
Anaesthetic Assist	2	3	2
Blood bank	1	1	1
TBAs Total Trained	-? 255	525 292	-? -?

Staffing

There was a general understaffing compared to workload at all health units, and a severe shortage of staff (skilled and trained health service providers) in labor wards and at health centers

Training

Masaka and Soroti hospitals are the only sites in the country with schools offering a comprehensive nursing course aimed at training community public health nurses and midwives Life-saving skills training has been conducted for midwives in the training schools and respective hospitals, including private midwives at the community level

Seventy-six percent of the midwives had received some form of in-service training Two out of the three TBAs had received training

Masaka hospital is also a training site for reproductive health for midwives from Masaka and neighbouring districts Intern doctors undergo training as well, to enable them to provide quality services at the periphery

Quality of Services in Relation to Existing Personnel

It is encouraging that at least four hospitals—Iganga, Soroti, Masaka, and Kitovu—offer emergency obstetric care full time Lwala offers care only some of the time, while Buluba does not offer it at all

Management protocols for conditions such as pre-eclampsia, eclampsia, antepartum and postpartum hemorrhage exist in all hospitals

Intergration of Reproductive Health Services

There are varying degrees of intergration of health services The highest level was observed in Masaka hospital, where antenatal clinics take place daily for both first attendance and report visits In the same clinic, other services offered at the same time were

- ❒ Counselling and treatment
- ❒ HIV/AIDS counselling
- ❒ Family planning counselling
- ❒ Immunization of women and children

In Iganga, Soroti, and Kitovu hospitals, antenatal clinics rarely treat STDs, and no other services are intergrated Family planning and immunizations are conducted in the hospitals on separate days and occasions, increasing the chances of poor quality health services Intrapartum care is usually conducted as such, and postpartum care is very rudimentary

Immunizations of children are regulary carried out, this service was also observed in Mayuge Health Center but at Kinoni, the number of immunizations was very low Severe health center was trying to intergrate services, though it means that clients have to spend the whole day waiting

Role of Midwives at Health Units

Most of the subdispensaries visited had just been upgraded to conduct maternity care so there was a low client turn-out

The midwives in health centers were often more likely to be involved in community out-reach activities than were those in hospitals Only midwives at Kitovu and Lwala hospitals were

involved in such out-reach activities, including supervision and training of TBAs, health education, immunization and advice on nutrition and sanitation

At Buluba hospital (a TB and Leprosy hospital), routine maternity care is not offered because there are no doctors available to provide emergency obstretric care However, midwives at Iganga, Soroti, Lwala, Masaka and Kitovu hospitals are clearly the backbone of maternity services They provide basic maternity care and participate in the management of obsteric emergencies

Doctors and Emergency Obsteric Care

Only one hospital, Masaka, has an obstetrician and also trains intern doctors Emergency obstetric care is under the supervision of this obstetrician whereas in Iganga, Soroti and Kitovu, emergency obstetric care is provided by doctors (medical officers) who have done an obstetrics rotation during internship These doctors perform emergency and elective caeserian sections, laparatomy for ruptured uterus, vacuum extraction, and assisted vaginal deliveries They also manage other obstetrical emergencies (such as pre-eclampsia, antepartum and postpartum hemorrhage), perform evacuation of uterus in cases of incomplete abortion, and initiate blood transfusions

Since there are no anaesthesiologists, anaesthesia is provided by anaesthetic assistants (nurses or midwives or clinical officers trained in administering anaesthesia up to diploma level) and sometimes by the doctor operating The forms of anaesthesia used are either inhalation by mask (EMO), ketamine or spinal

Equipment and Supplies

All the hospitals (Masaka, Iganga, Kitovu, Lwala, Soroti and Buluba) had well-equiped operating theatres, although Buluba could not provide for surgical obstetrics At Lwala, doctors were not always available, but cases could be transferred to Soroti hospital

Anaesthesia and blood-replacement equipment was available in the hospitals Equipment for performing episiotomy and laceration repair was inadequate in hospitals and health centers Kitovu hospital was the only hospital which was equipped, and it had ten complete normal delivery packs and five sterile suturing packs The Otuboi and Gweri subdispensaries were well equipped but lacked space and a midwife, so the equipment was still not used by the community

Blood pressure apparatus and urine-testing equipment was also a problem in all the health units surveyed Only Kitovu hospital had enough blood pressure machines Equipment for resuscitation of newborns was incomplete in almost all the hospitals Mayuge Health Centre lacked oxygen and cylinders but had most of the equipment

All units had a good supply of oxytocic drugs, catguts, lignocaine and antibiotics But a major problem was observed in the supply of gloves (both sterile and clean) and syringes In most cases, patients had to supply these items themselves

A fetostethoscope and weighing scales were available in all the hospitals There was evidence of the use of partographs in Masaka, Iganga, Soroti, Lwala and Kitovu hospitals as a tool for labour monitoring—though midwives still lacked standard skills in their use

Mama Kit

The Mama Kit is a small package consisting of local materials essential for conducting a safe and clean delivery, whether at home or in an institution The kit can be used by anyone assisting a woman during delivery The Mama Kit contains

- ✓ Plastic polythene papers (at least a meter)
- ✓ A razor blade
- ✓ Four clean strings of threads of about 10 to 12 cms in length
- ✓ A small roll of cotton wool and two perineal swabs

The Soroti district was to pilot dissemination of the Mama Kit At the time of the assessment, all health units had Mama Kits, and women at those institutions had at least accepted the fact that it is important The Iganga and Masaka districts, however, were not as yet aware of the Mama Kit

Facility Set-up (Labor Wards)

Kitovu and Iganga are the only hospitals that have a clean and well-organized labor wards, though the place to resuscitate babies was unsatisfactory Masaka was disorganised, the room for 1st stage labor was very small, and the delivery room had only four beds with no privacy There was no place to resuscitate babies, so babies have to be rushed to the operating theater for resuscitation

Soroti hospital also had a very small labor ward with no 1st stage room and only two delivery beds with no privacy Like Masaka hospital, there was no place to resuscitate babies

Two health centers had poorly set delivery rooms with only two beds and no privacy and no place designed for resuscitation of babies Mayuge had a well-set delivery room with two good delivery beds separated by curtains

Otuboi and Gweri had space problems, so delivery rooms were congested with equipment which could not be used

At the time of the assessment, Butenga had a very poor setting

The private midwives had organized and arranged the delivery rooms well and had set up a place to monitor labor progress Only one TBA had a well-organized house, where she conducts deliveries, one was conducting deliveries at the clients' homes

Sepsis Control

Sterilization techniques, that is, autoclaving of equipment, were observed only in hospitals As far the other health units, the private midwives at maternity centers, and the TBAs were concerned, only high-level decontamination was used, either by boiling, using chemicals or a combination of the two Delivery rooms were being scrubbed with plenty of soap and water on a daily basis

Generally, decontamination methods were inappropriately done and were ineffective due to inadequate equipment

Other Observations

Today, trained LSS midwives are more competent than previously, that is, they are able to

- ➜ Conduct antenatal risk assessment and identify risk factors
- ➜ Communicate with and counsel high-risk clients on LAM as a family planning method
- ➜ Exercise infection control and prevention at all levels
- ➜ Manage pregnancy-related complications (e g , manual removal of placenta)
- ➜ Identify causes of post-partum hemorrhage and manage it
- ➜ Detect complications during labor, such as prolonged labor and obstructed labor, by use of a partograph

Nevertheless, staff are poorly motiviated and morale is low, at least partly because the frequent shortage of supplies and equipment hinders them from using their skills to provide basic maternity care

Audits, especially of maternal and perinatal mortality, are not regularly carried out in health units There is, as yet, no research on reproductive health in these districts

The intergration of reproductive health services is not yet up to date, especially in hospitals

RECOMMENDATIONS

GENERAL RECOMMENDATIONS

Build capacity at the district level for health management

Focus health education advocacy on emergency obstetric care

Equip health facilities adequately for management of obstetric care, maintain that equipment in good working condition

Train all health workers in life-saving skills

Inform, educate and communicate to sensitize and mobilize communities for health through media, seminars, workshops, drama groups, film/video, etc

Improve communication (radio calls, telephone) and transportation for emergency referrals

Help the communities to dialogue and debate gender issues, as these often hinder women's access to safe health care

Monitor and evaluate safe motherhood activities at community- and health-facility levels

Encourage and increase accountability of distance management and the health workers to communities

OTHER RECOMMENDATIONS

Train (via in-service and refresher courses) midwives and nurses, etc

Train TBAs

Upgrade all health facilities to provide basic maternity care

Provide obstetric care in all health facilities

Intergrate maternal health services into the existing services to increase access and minimize missed opportunities

Provide supplies and equipment to all health facilities providing maternal care services

Renovate existing health units

Improve maternal and child health audits at all levels

Encourage research on reproductive health services to provide quality care

Appendices

GHANA

Table 5 Equipment, essential drugs and structures for providing essential obstetric care found in health facilities in Kwahu South District

TYPE OF EQUIPMENT	NKWATIA HEALTH CENTRE	OBO HEALTH CENTRE	RADIANT MATERNITY HOME	NYAKOMA MATERNITY HOME	HOLY FAM ILY MISSION HOSPITAL	ATABIE GOVERN-MENT HOSP
Complete IUD kit	-	-	+	+	- -	+
Neonatal resuscitation kit						
■ mucus catheter	---	+	+	+	+	
■ oxygen set	---	---	---	---	----+	-
■ mouth suction device	+	---	+	+	+	+
Local anaethesis	+	+	+	+	+	+
General anaethesis	- -	-	---	---	+	+
Lab tests						
■ for malaria parasites						
■ hameo globin	- -	---	---	---	+	+
■ urine glucose	+	---- +	+	+	+	+
■ urine ketones	+	+	---	--	+	+
■ urine protein	--	---	-	-	+	+
	+	+	+	+	+	+
Complete mini laparotomy set	---	---	--	---	+	+
Maternity ward	+	+	+	+	+	+
Treatment room	+	+	+	+	+	+
Labor suite (1st stage)	--	---	-	---	+	+
Delivery suite (2nd stage)	+	+	+	+	+	+
Operating theater	--	--	--	---	- -	---

Table 6 List of essential drugs available in the health facilities for providing essential obstetric care in Kwahu South District

ESSENTIAL DRUG	NKWATIA HEALTH CENTRE	OBO HEALTH CENTRE	RADIANT MATERNITY HOME	NYAKOMA MATERNITY HOME	HOLY FAM ILY MISSION HOSPITAL	ATABIE GOVERN MENT HOSP
Analgesic	+	+	+	+	+	+
Anti-allergic	+	+	+	+	+	+
Anticoagulant	---	---	---	---	+	- -
Anti-diabetic	---	---	--	---	+	+
Anti-hypertensive	---	---	---	--	+	+
Antibiotics	+	+	+	+	+	+
Antimalarials	+	+	+	+	+	+
Volume expanders	---	---	---	+	+	+
Disinfectant & antiseptic	+	+	+	+	+	+
Diuretic	+	+	+	--	+	+
Intravenous fluid	+	+	+	+	+	+
Oxytocic	+	+	+	- -	+	+
Diazepam	+	+	+	-	+	+
Tetanus antitoxin	--	+	+	---	+	+
Tetanus toxoid	---	+	+	---	+	+
Contraceptives	+	+	+	---	+	+

Table 7 List of equipment, essential drugs and structures found in the health facilities for providing essential obstetric care in Akwapim South District

TYPE OF EQUIPMENT	PAKRO HEALTH CENTRE	FLORENCE MATERNITY HOME	EMILIA S MATERNITY HOME	NSAWAM HOSPITAL
Complete IUD kit	---	--	---	- -
Neonatal resuscitation kit				
■ mucus catheter	- -	+	+	+
■ oxygen set	- -	- -	---	+
■ mouth suction device	+	+	+	+
Local anaethesis	- -	+	+	+
General anaethesis	---	--	---	+
Lab tests				
■ for malaria parasites	-	- -	--	+
■ hameo globin	--	+	+	+
■ urine glucose	- -	---	-	+
■ urine ketones	---	-	- -	---
■ urine protein	--	-	--	---
	+	+	+	+
Complete mini-laparotomy set	---	-	- -	+
Maternity ward	+	+	+	+
Treatment room	+	+	+	+
Labor suite (1st stage)	---	-	--	+
Delivery suite (2nd stage)	+	+	+	+
Operating theater	- -	-	---	+

Table 8 List of essential drugs available in the health facilities for providing essential obstetric care in Akwapim South District

ESSENTIAL DRUG	PAKRO HEALTH CENTRE	FLORENCE MATERNITY HOME	EMELIA S MATERNITY HOME	NSAWAM HOSPITAL
Analgesic	+	+	+	+
Anti-allergic	+	+	+	+
Anticoagulant	--	--	--	---
Anti-diabetic	-	--	--	+
Anti-hypertensive	--	--	--	+
Antibiotics	+	+	+	+
Antimalarials	+	+	+	+
Volume expanders	---	--	- -	+
Disinfectant & antiseptic	+	+	+	+
Diuretic	+	+	---	+
Intravenous fluid	+	+	+	+
Oxytocic	+	+	+	+
Diazepam	+	-	+	+
Tetanus antitoxin	--	---	- -	--
Tetanus toxoid		+	---	+
Contraceptives	+	+	-	+

Key for Tables 5 to 8
+ = available
= not available

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UGANDA

MATERNAL MORTALITY IN UGANDA

A REVIEW OF THE LITERATURE

The number and availability of the sources of information on maternal mortality in Uganda is, in itself, revealing As mentioned earlier, the first study on maternal mortality was in the late 1950s by Rendle Short The 21 studies and reports on maternal mortality in Uganda published up to 1997 are listed below

AUTHOR(S)	YEAR OF PUBLICATION	REFERENCE NUMBER
Rendle Short, C W	1961	1
Grech, E S	1969	2
Zake, E Z	1982	3
Kampikaho, A	1990	4
Turyasingura, G	1985	5
Wasswa, G W	1991	6
Mukwaya, J	1991	7
Agel, Y A	1994	8
Orach, C	1994	9
Namagembe, I	1996	10
Makerere University	1968-69	11
Makarere University	1970-72	12
Ministry of Health	1992-94	13
Ministry of Health	1992-94	14
Nyaphisi, et al, Commonwealth Regional Health Community Secretariat	1991-92	15
Dept OB/GYN, Makarere University WHO Study on Abortions, Mirembe and Okong	1993	16
ODA-CARE and MOH, Erickson, et al	1995	17

UDHS, Ssekamatte-Ssebuliba, Jr , et al	1995	18
Nsambya Hosp , Okong, P	1996	19
Survey of UNFPA/SMI/CUAMM Collaboration	Final report to come	20
Child Health and Development Center, 1st review of maternal mortality		21

Out of 21 studies and reports on maternal mortality up to 1997, only 4 are published in searchable journals (1), (2), (3),and (4) The rest can only be accessed with difficulty by contacting the individual authors or institutions Seven of these studies were post-graduate dissertations [for Masters of Medicine in Obstetrics and Gynaecology (five), or Master of Public Health(two) (4), (5),(6), (7), (8),(9), and(10) Departmental reports ranged from Makerere University 1968-69 (11), 1970-72 (12) to Ministry of Health, Division of MCH/P 1992-94 (13,14), and Nsambya Hospital- Okong P 1996 (19) The others are reports of various studies (15), (16), (17) and (18)

Difficulties in obtaining these materials pose major hurdles for the study of this important issue and for guiding policy makers A major milestone in the dissemination of this information to researchers, policy makers, the public and other stake holders was organized on October 24, 1996 by Child Health and Development Centre, Makerere University in collaboration with the Ministry of Health and with the support of the Commonwealth Regional Health Community Secretariat for East Central and Southern Africa

Methodology

The majority of these studies (13) were descriptive and retrospective records analysis in one or more institutions (1,2,3,5,6,7,8,10,11,12, 13,14,19) The strength of these studies depends on the accuracy of records and consistency of record storage and availability These studies are institution based and useful in establishing obstetric and medical causes of maternal deaths However, there were only three institution reports where perhaps a maternal audit was carried out Postmortem examination is not routinely done on maternal deaths, except occasionally at the university teaching hospital

Remarkable developments in maternal mortality research in the last decade were the "risk approach to maternal mortality" and survey studies which added to the knowledge of maternal mortality in Uganda There were four case control studies designed to identify risk factors for maternal death (4,8,15,16) One of these was entirely devoted to abortions (16) By the time of this review, three surveys were completed, two using the sisterhood method (9,17) and one household survey (18) The preliminary report of the fourth survey (20) is now available Survey methods give a better estimate of maternal mortality at the community level However, they are expensive and do not necessarily accurately identify the causes of maternal deaths

Magnitude of the problem

Maternal mortality rate or ratio have been used interchangeably in these studies by error or by design The two terms obviously have different meanings, and the distinction between them is important for policy makers as well as for the implementation and evaluation of interventions Nearly all the studies reviewed estimated the magnitude of the problem by calculating the maternal mortality ratio but reported their findings as maternal mortality rates

Maternal mortality rate is the number of maternal deaths per 100,000 women of reproductive age (15-49 years) The rate measures both the likelihood of becoming pregnant and the risk of dying once pregnant Maternal mortality ratio is the number of maternal deaths per 100,000 live births and will therefore underestimate the gravity of the problem when the total fertility rate is high The ratio measures a woman's chances of dying from a given pregnancy and should theoretically relate to the number of maternal deaths (as the numerator) to the total number of pregnancies (as the denominator) Neither of these is easy to measure because some abortions are not recorded, are deliberately concealed, or are not even recognized Estimating the maternal mortality ratio in health institutions yields a high ratio because live births in the community (catchment area of the health facility) are not included in the denominator This problem aside, institution records are incomplete and in some instances 10 to 25 percent of maternal deaths are not recorded In this review, all maternal mortality reported with a denominator of live births or births or deliveries is referred to as a ratio

The institution maternal mortality ratio in Mulago hospital from 1952 to 1959 was 1,370 per 100,000 births (1) at a time when the community obstetric coverage was less than 30 percent Subsequent maternal mortality ratios in Mulago were

- ❒ 249 per 100,000 live births 1968-9 (11),
- ❒ 150 per 100,000 live births 1970-72 (12),
- ❒ 397 per 100,000 live births 1982-84 (5),
- ❒ 400 per 100,000 live births in 1985-90 (6),
- ❒ 529 per 100,000 live births 1991 (7), and
- ❒ 569 per 100,000 live births 1994 (8)

The trend initially showed a steady decline from the late 1950s, with the lowest recorded mortality ratio in 1970 to 1972, then a steady rise up to the 1990s In a regional referral hospital, the maternal mortality ratio for the period 1971 to 1980 was 377 per 100,000 births (3) A five-hospital study (1980-86) found a non-abortion maternal mortality ratio of 265 per 100,000 deliveries (463 deaths and 174,915 deliveries) and an abortion-related maternal mortality rate of 358 per 100,000 abortions (117 deaths and 32,728 abortions) (4)

An institutional-based survey of all health institutions in the country offering maternity services in 1966 found a maternal mortality ratio of 397 per 100,000 births (2) when these institutions accounted for only 32 percent of all births (twelve-month period 420 maternal deaths and

105,835 births) A similar institution survey (13) by the Ministry of Health in 1992 of 20 hospitals and 54 health units in 12 districts found the average maternal mortality ratio of 557 per 100,000 live births (418 maternal deaths and 75,007 live births) Estimates by the Health Information System (14) in 1992 of the maternal mortality ratio in 23 districts found a maternal mortality ratio of 600 per 1000,000 live births These three institution surveys show an increase in the maternal mortality ratio from the 1960s to the 1990s The maternal mortality ratio was much higher in hospitals 1,078/100,000 live births (13), 800 per 100,000 live births (14) than in health centers/maternity units, 149 per 100,000 live births (13)

In the last decade, a significant deviation in maternal mortality research was the estimation of maternal mortality rate/ratio in the community by household surveys or the sisterhood method (7,9,18,20) and risk assessment studies (4,8,15,16) Community surveys showed different levels of maternal mortality ratios, which were slightly lower than institution estimates Community maternal mortality ratios were

- ❒ 286 per 100,000 births in Eastern Uganda (17),
- ❒ 662 per 100,000 deliveries in Northern Uganda (1993-94),
- ❒ 506 per 100,000 live births as a National average by Uganda Demographic Health Survey 1995 (18), and
- ❒ UNFPA/Safe Motherhood Initiative/CUAMM collaboration in three districts surveyed, Arua 373 per 100,000 live births, Iganga 219 per 100,000 live births, and Tororo 315 per 100,000 live births (20)

Causes of Maternal Deaths

The clinical causes of maternal mortality in Uganda have remained largely preventable problems aggravated by socio-cultural issues, poverty and inaccessibility of appropriate care The leading causes are ruptured uterus, hemorrhage, sepsis, complications of abortions, anaemia, pre-eclampsia/eclampsia and medical diseases In 1952-59 and 1966-68 ruptured uterus was the leading cause followed by haemorrhage and sepsis (1,2), and between 1968-72, hemorrhage was the leading cause followed by ruptured uterus and sepsis (11,12) This order was reversed by 1971-80 when sepsis was the leading cause followed by hemorrhage and ruptured uterus (3) All through the 1980s and into the 1990s, sepsis maintained the first position, followed by either hemorrhage or abortion complications (4,5,6,8) However, HIV-related medical illnesses and the proportion of women dying antepartum from these complications have steadily increased in the last ten years (7,19)

Discussion

The majority of maternal mortality research was performed by clinicians or postgraduate students for clinical purposes (1,2,3,4,5,6,7,10,11,12,19) through health-facility records review The use of this information was limited to evaluation and change of clinical management protocols Whereas all these studies and reports were done by lone individuals one site at a time, multi-center and collaborative studies were introduced in the 1990s (15,16,17,18,20) It is only in the late 1980s and in the 1990s that there was a major effort to introduce other research

methodologies, namely, case control studies (8,15,16), the sisterhood method (9,17) and household surveys (18,20) These had many important implications for policy makers and health planners at the Ministry of Health From the 1960s through to 1990s, maternal mortality research results were known only to the individual institutions or peer reviewers Not until the 1990s was there a deliberate effort to disseminate maternal mortality research findings to scientists, policy makers and politicians, first regionally at the Commonwealth Ministers Meeting in Lilongwe, Malawi, in 1993, and later in Uganda on October 24, 1994

Nearly all the researchers were obstetricians and gynaecologists until in the 1990s, when public health doctors and statisticians also became involved (17,18,20) Midwives, who form the majority of health workers in maternity care, were not researchers except in one study (15) In a few other studies, midwives were involved as data collectors

Total fertility rates have remained high (7 3-6 9), and it will be a long time before their reduction will impact maternal mortality (18) The appearance of the HIV/AIDS epidemic in the 1980s is beginning to show an impact on maternal mortality (7,19) Although most of the studies are not published in searchable journals, these studies are important because they have either been locally peer-reviewed or accepted at various universities for postgraduate degree examinations or are important departmental reports or institution publications The first review of maternal mortality was by the Child Health and Development Centre (21)

Conclusion

Not only has maternal mortality been inadequately researched in Uganda, the results of the limited number of studies have been poorly disseminated A multidisciplinary team consisting of obstetricians, public health workers, social scientists, statisticians and midwives is essential for in-depth research of this very important health issue

OVERVIEW OF MATERNAL MORTALITY IN UGANDA

Okong, P * and Mirembe, F **

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** Professor of Obstetrics and Gynaecology, Makerere Medical School, P O Box 7062, Kampala, Uganda

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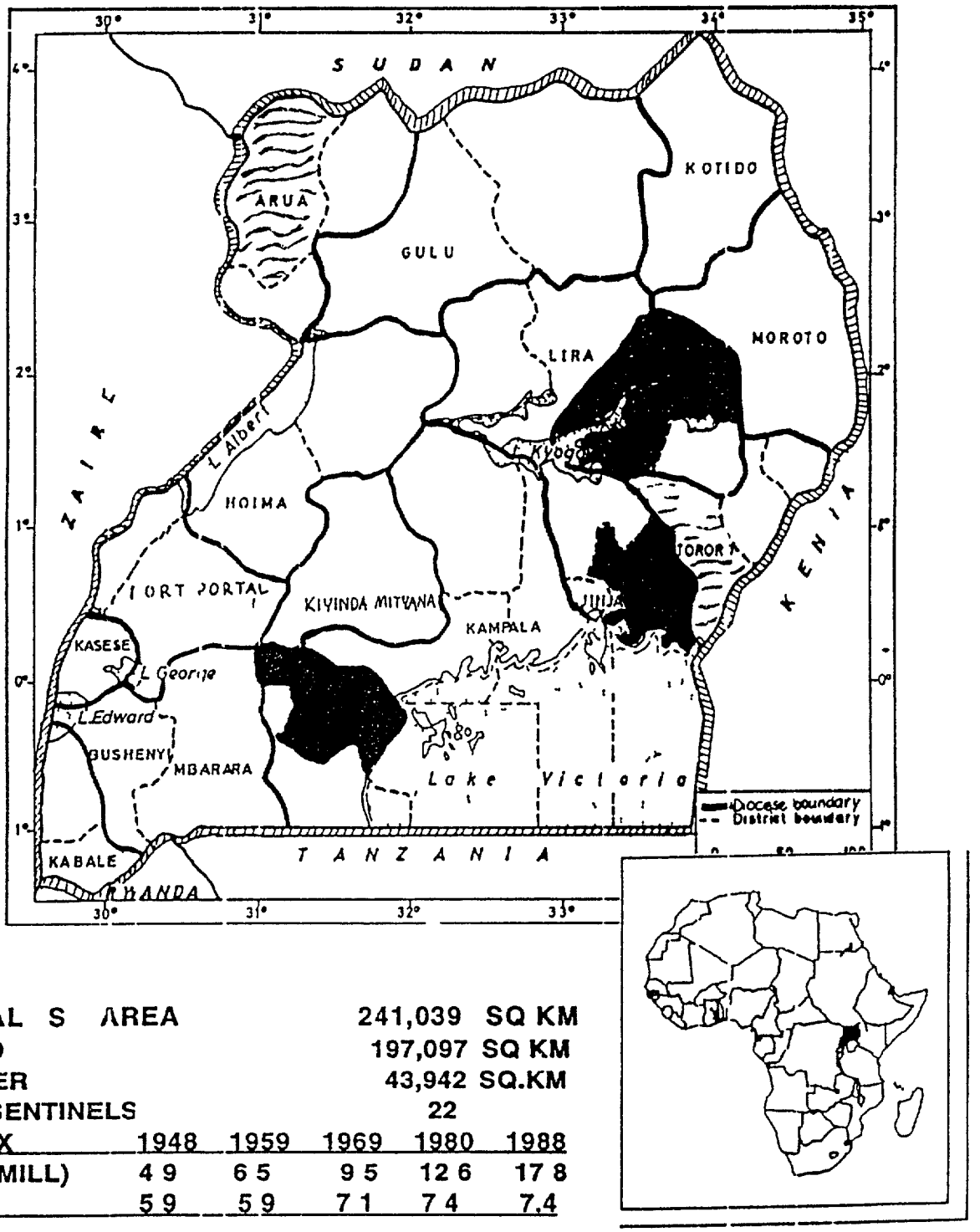

TOTAL S AREA			241,039 SQ KM		
LAND			197,097 SQ KM		
WATER			43,942 SQ.KM		
HIV SENTINELS			22		
INDEX	1948	1959	1969	1980	1988
POP(MILL)	4 9	6 5	9 5	12 6	17 8
TFR	5 9	5 9	7 1	7 4	7.4

Background

Many advances in modern medical practice have taken place in Uganda in the last 100 years since it was introduced in this country Some of these include substantial gains in childhood mortalities by nutritional intervention and immunisation programmes Although maternity services were among the first to be introduced into the country by church mission groups that first introduced western medicine in this country nearly 100 years ago the first study on maternal mortality was in the late 1950s by Rendle Short CW (1) Maternal mortality was neglected largely because its importance was not appreciated, data was difficult to collect and there were other diseases such as malaria and tuberculosis that were of immediate concerns to the colonial administrators and their local elite counterparts In this era, it was unimaginable to spend money to collect information on deaths of "native" women as a result of pregnancy complications and in the course of childbirth

Sources of information on maternal mortality

This is very revealing Out of 21 studies and reports on maternal mortality up to 1997 only four are published in searchable journals viz Rendle Short 1961(1) Grech ES 1969(2) Zake EZ 1982(3),and Kampikaho A 1990(4) The rest can only be sourced with a lot of difficulties through the individual authors or institutions and there are limited opportunities for publication Seven of these studies were post graduate dissertations [for Masters of Medicine in Obstetrics and Gynaecology(five) or Master of Public Health(two)] namely Kampikaho A(4) Turyasingura G 1986(5) Wasswa GW 1991(6) Mukwaya J 1991(7), Agel YA 1994(8), Orach C 1994(9), and Namagembe I 1996(10) Departmental reports ranged from Makerere University 1968-69(11), 1970-72(12) to Ministry of Health division of MCH/P 1992-94(13,14), and Nsambya Hospital- Okong P 1996(19) The others are reports of various studies viz Commonwealth Regional Health Community Secretariat, Nyaphisi et al 1991-92(15), Makerere university, Dept Obs/Gyn WHO Study on Abortions Mirembe and Okong 1993(16), ODA-CARE and MOH Eastern Uganda Baseline survey, Erickson et al 1995(17) and UDHS, Ssekamatte-Ssebuliba J et al 1995(18)

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Discussions

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Development Centre(21)

Conclusions

Maternal mortality has been inadequately researched in Uganda Results of the limited number of studies which have been done have been poorly disseminated A multidisciplinary team consisting of obstetricians public health workers social scientists statisticians and increased participation of midwives are essential in in-depth research of this very important health issue

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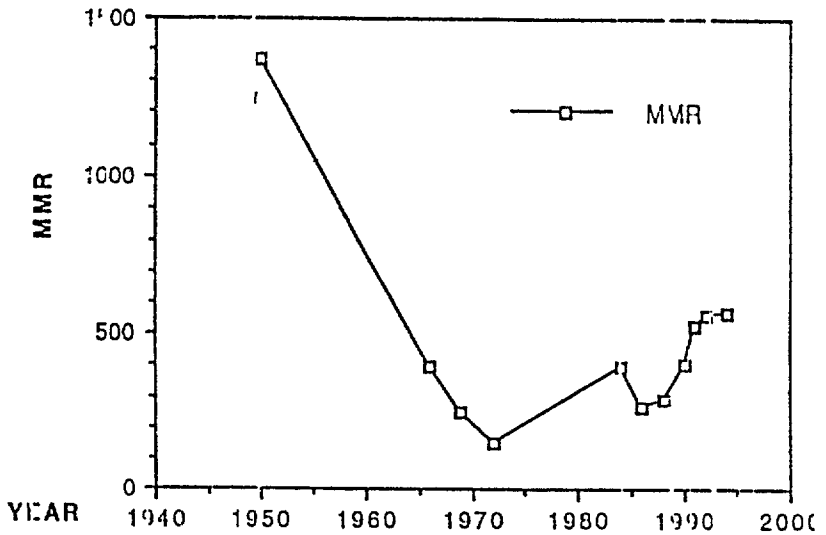
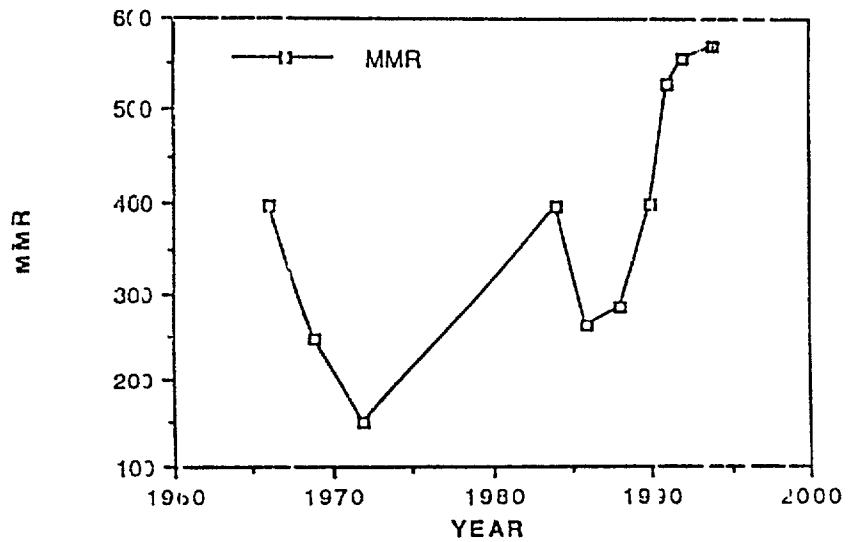
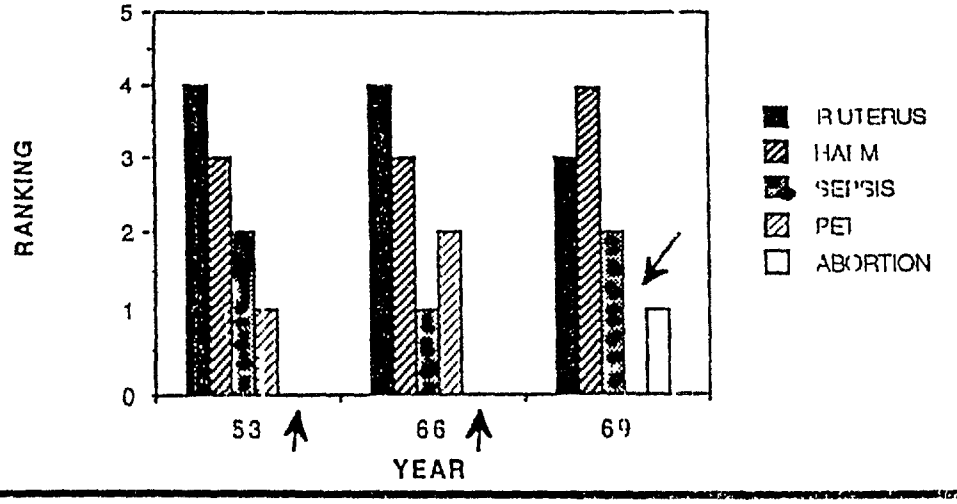
TRENDS OF MATERNAL MORTALITY RATES



MATERNAL MORTALITY RATES



CAUSES OF MMR RANKING



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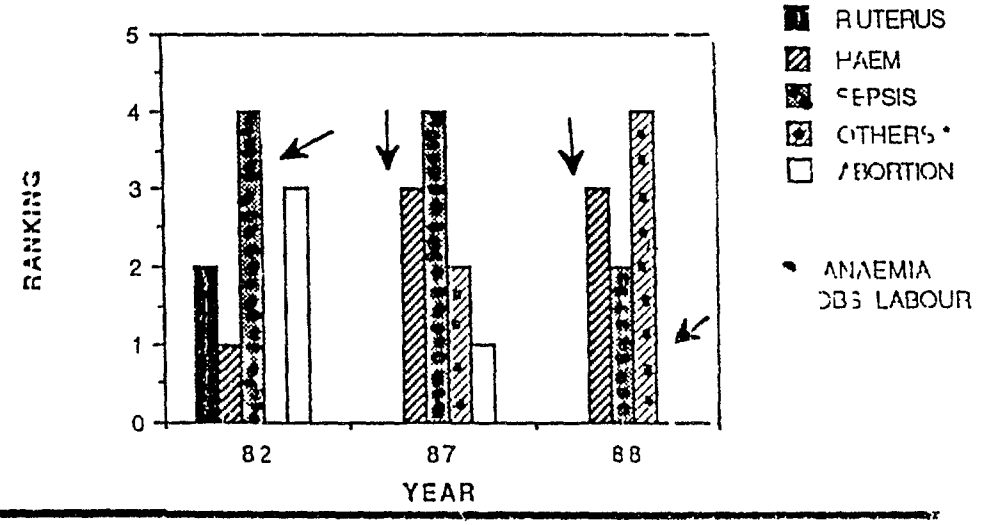

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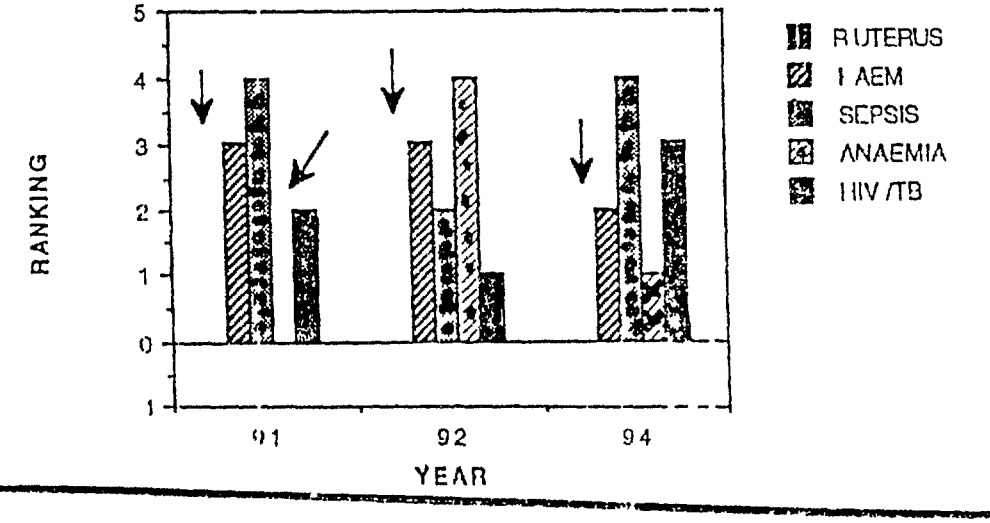
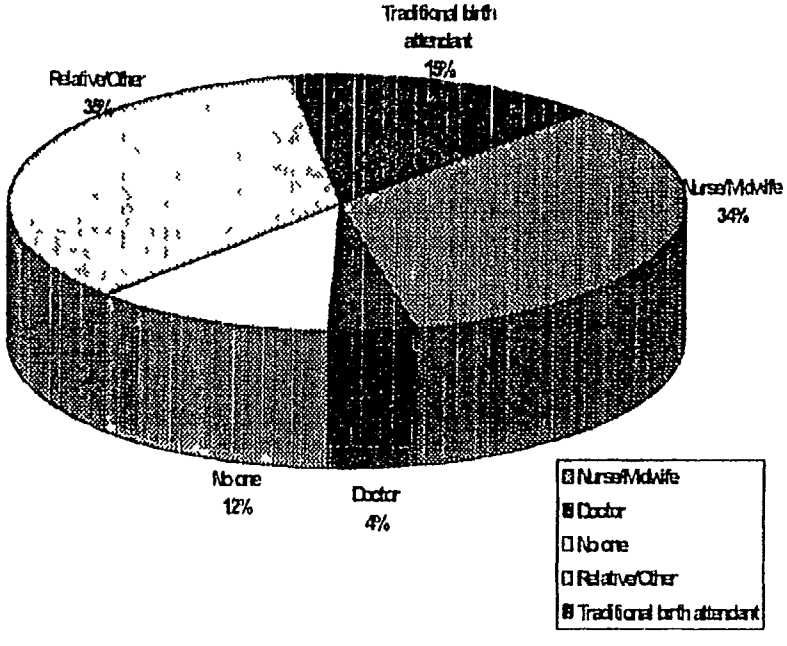


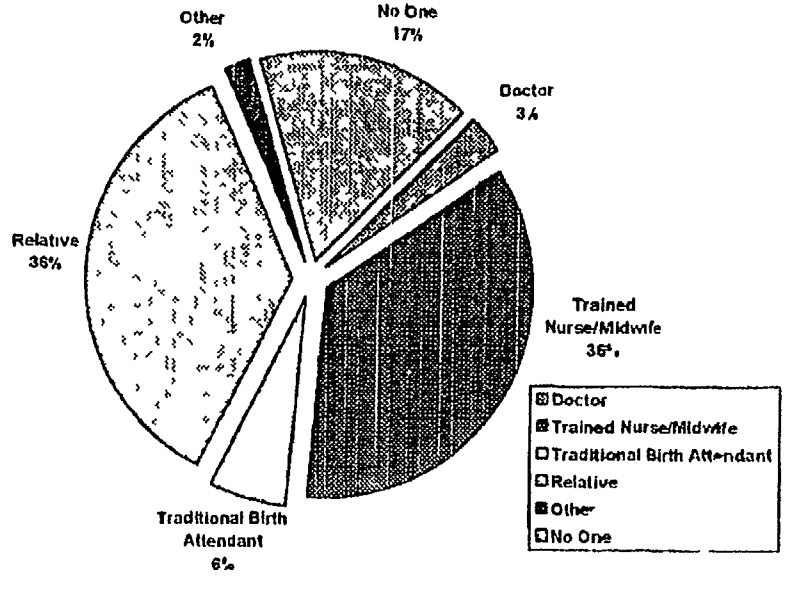
Pie Charts 1989 UDHS vs 1995 UDHS

Assistance during Child Birth



UDHS 1995

Assistance During Childbirth
(Births during the 5 Years before the Survey)



UDHS 1988'89

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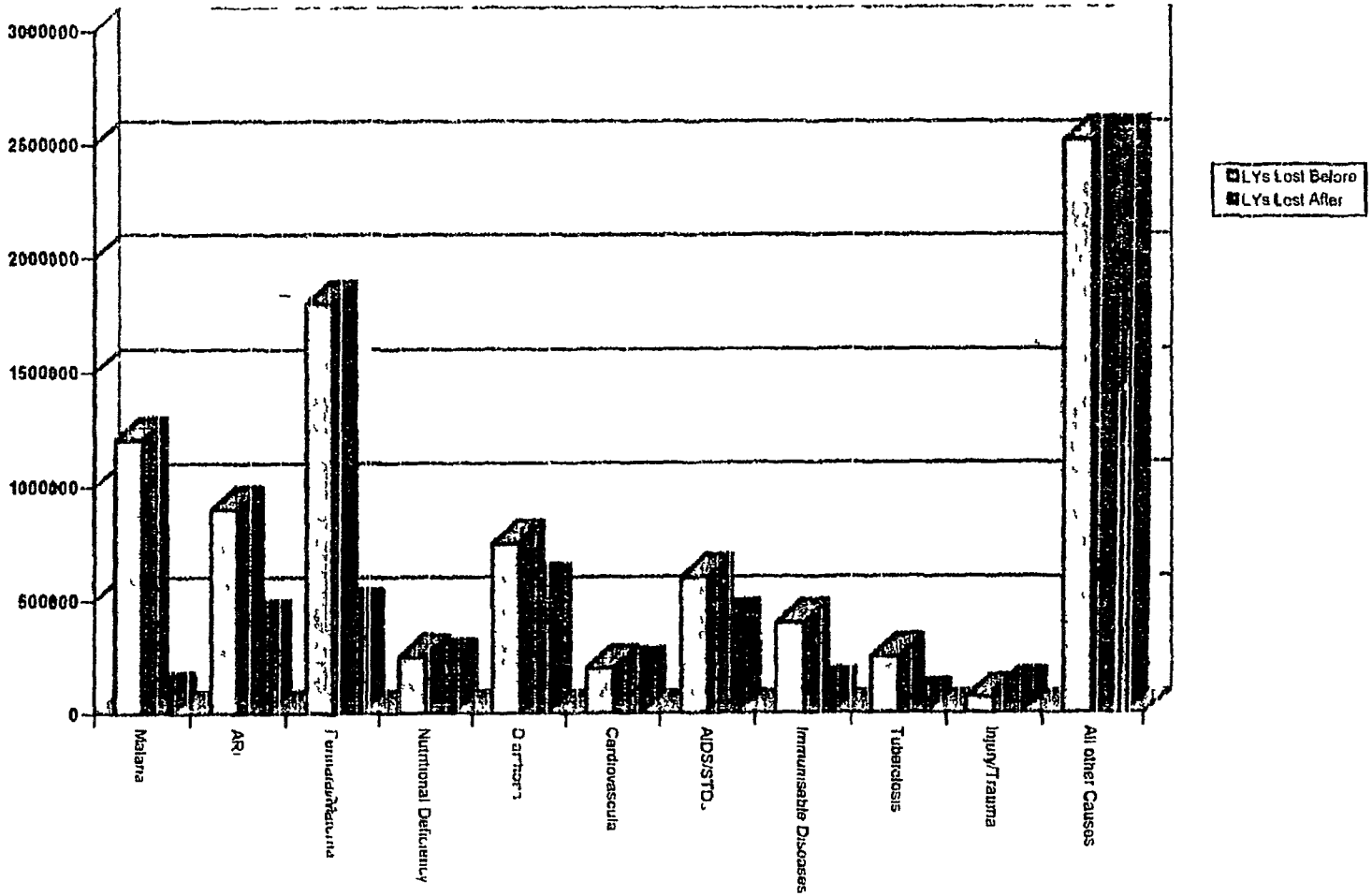
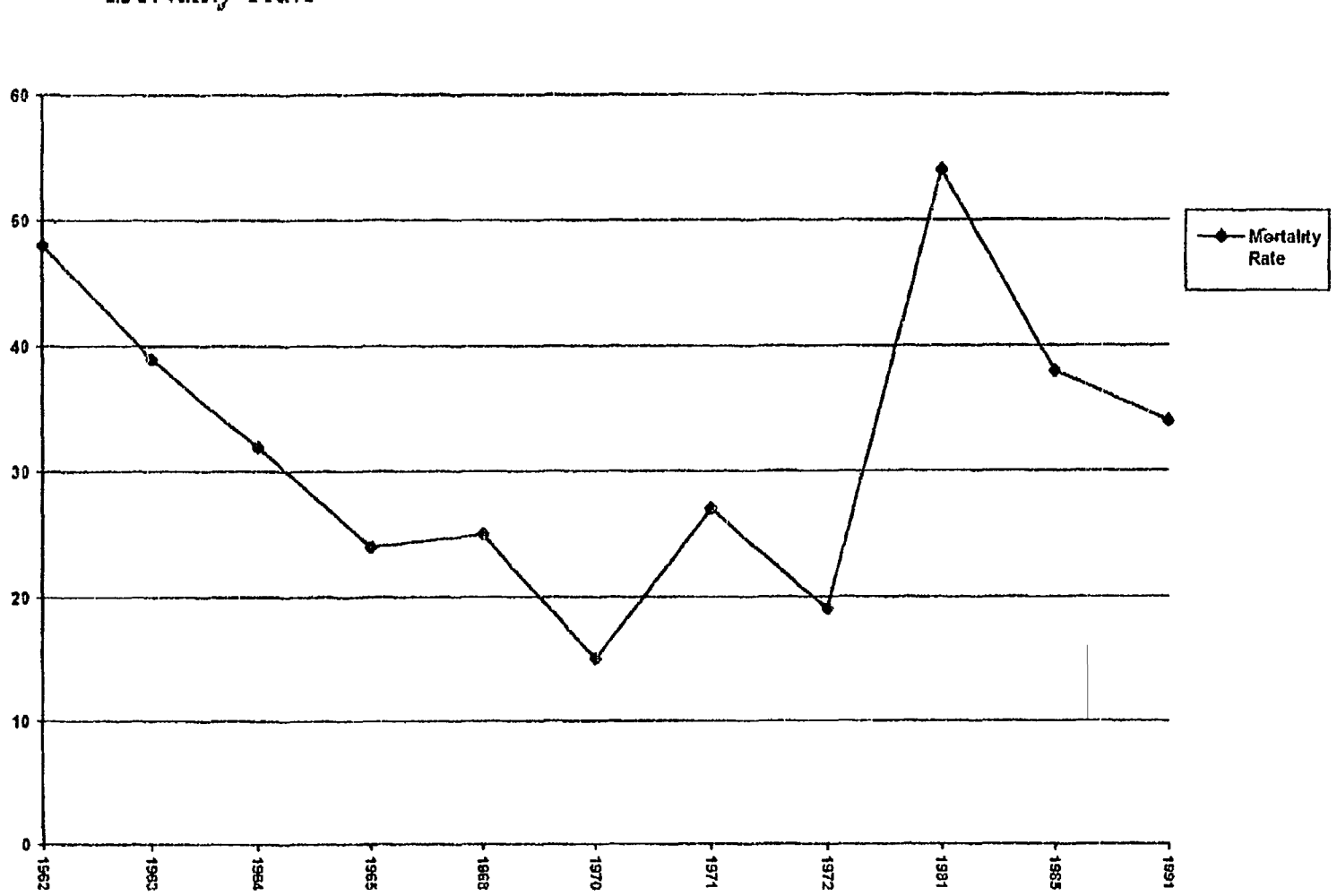
Burden of Death Chart
(Before and After)



Mulago Hospital Perinatal Mortality Trends



Causes of maternal mortality in Mulago Hospital - 1997

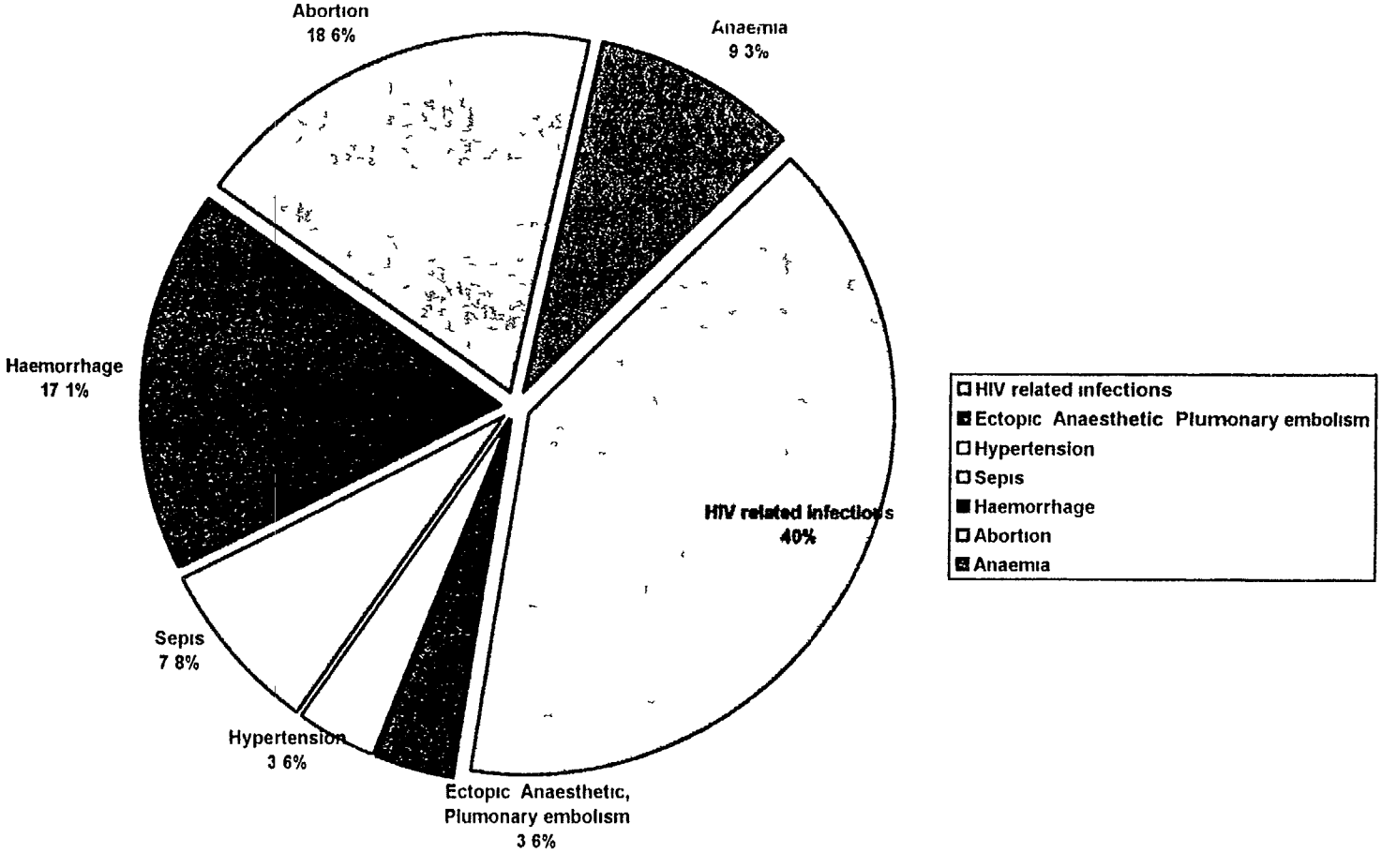


TABLE 1 SITUATION OF ESSENTIAL EQUIPMENT & SUPPLIES IN HEALTH FACILITIES (SOURCE *SMI NEEDS ASSESSMENT REPORT, 1995*)

FACILITIES WITH ADEQUATE ESSENTIAL SUPPLIES (N=75)

SUPPLIES	HEALTH CENTER NUMBER % (N=69)	HOSPITAL NUMBER % (N=6)	ALL FACILITIES NUMBER % (N=75)
Gloves (at least a pair)	47 (71%)	5 (100%)	52 = 71%
Disposable syringes and needles	58 (84%)	6 (100%)	64 = 85%
Intravenous sets	61 (88%)	6 (100%)	67 = 89%
Blank partographs	48 (69%)	3 (50%)	51 = 68%
Blank ANC cards	34 (49%)	1 (16%)	35 = 18%
Cord ligatures	34 (49%)	2 (33%)	7 = 8%
Blood-giving sets and blood	0%	6 (100%)	
Syphilis test kits	3 (4%)	6 (100%)	9 = 12%
Gauze	53 (77%)	5 (83%)	60 = 77%
Cotton wool	60 (87%)	5 (83%)	65 (88%)
Soap	53 (77%)	6 (100%)	61 = 78%
Javel or disinfectants	53 (77%)	5 (83%)	59 = 78%
DRUGS			
Iron/folic acid	58 (84%)	6 (100%)	62 (81%)
Diazepam injection	44 (64%)	6 (100%)	48 (64%)
Pethedine	5 (7%)	6 (100%)	13 (17%)
Panadol/Aspirin	58 (84%)	6 (100%)	64 (85%)
Ampicillin	11 (16%)	3 (50%)	14 (19%)
Benzylypenicillin injection	59 (85%)	6 (100%)	65 (87%)

Cefriazone injection	6 (9%)	0 (0%)	
Gentamycin injection	58 (84%)	6 (100%)	64 (85%)
Kanamycin injection	3 (4%)	6 (100%)	8 (19%)
Cotrimoxazole	59 (85%)	6 (100%)	65 (87%)
Tetracycline	57 (83%)	6 (100%)	63 (84%)
Eye ointment			
Fansidar	58 (84%)	6 (100%)	64 (85%)
Quinine injection	57 (83%)	6 (100%)	
Methyldopa	331 (45%)	6 (100%)	37 (54%)
Hydralazine injection	3 (4%)	6 (100%)	9 (12%)
Magnesium sulphate injection	38 (55%)	6 (100%)	
Ergometrine	59 (85%)	6 (100%)	16 (81%)
Tetanus toxoid	56 (81%)	6 (100%)	61 (81%)
BCG	56 (81%)	6 (100%)	61 (81%)
EQUIPMENT	**HEALTH CENTER NUMBER % (N=69)**	**HOSPITAL NUMBER % (N=6)**	**ALL FACILITIES NUMBER % (N=75)**
Sphygmomamometer	6 (8%)	58 (78%)	10 (14%)
Baby-weighing scale	4 (5%)	64 (88%)	1 (1%)
Fetal stethoscope	3 (4%)	69 (95%)	1 (7%)
Instrument sterilizer	14 (19%)	53 (72%)	7 (9%)
Spring forceps	26 (36%)	39 (54%)	7 (9%)
Kidney basin	3 (4%)	65 (89%)	5 (7%)
Sponge bowl	5 (7%)	62 (85%)	6 (8%)
Clinical oral thermometer	19 (26%)	55 (74%)	0 (0%)
Low-reading thermometer	58 (82%)	13 (18%)	0 (0%)

Surgeon's hand brush	44 (61%)	27 (38%)	1 (1%)
Heat source	28 (38%)	43 (59%)	(5%)
Syringe and needles	8 (12%)	61 (82%)	2 (3%)
Urinary catheter	35 (49%)	3 (46%)	4 (6%)
Adult ventilators	16 (92%)	(8%)	0(0%)
Mouth gag	61 (84%)	12 (16%)	0 (0%)
Surgical gloves	14 (19%)	58 (78%)	2 (3%)
Scissors	5 (7%)	57 (83%)	7 (10%)

TABLE 2 NUMBER OF ABORTION PATIENTS TREATED WITH MVA TECHNOLOGY AND FAMILY PLANNING COUNSELING (SOURCE *QUEEN ELIZABETH CENTRAL HOSPITAL ANNUAL REPORT*)

YEAR	NUMBER OF MVA CLIENTS	NUMBER OF MVA CLIENTS WHO ACCEPT FAMILY PLANNING
1995 (December)	27	18
1996	423	270
1997	357	220
1998 (January-February)	39	26
TOTAL	851	534

TABLE 3 UTILIZATION OF MATERNAL HEALTH SERVICES AND OUTCOMES OF CARE (SOURCE *CHIWAMBA HEALTH CENTER 1997 ANNUAL REPORT*)

CLIENT ATTENDANCE	1995	1996	1997
ANC	780	840	850
Deliveries	416	453	500
Live births	405	427	490
Fresh SB	5	3	2
Macerated SB	13	17	8
Referred cases	11	25	34
Family planning clients	216	356	371
Postnatal clients	1	4	1
Waiting mothers	9	15	24
Maternal death*	3	3	1
Neonatal death	1	2	1

* Causes of maternal deaths antepartum hemorrhage, eclampsia and obstructed labor, with delayed transport for referral as an underlying factor

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INSTRUMENTS

GHANA

AFRICAN INITIATIVE PROJECT

Ghana

RESEARCH INSTRUMENT 1:
Guidelines for Literature Review:

Activity:

1 Review of policy documents on Safe Motherhood

2 Review of research findings on Safe Motherhood and other related issues eg demography etc

QA

REPRODUCTIVE HEALTH POLICY AND PLANS

- Has data been pooled towards determining maternal, morbidity and mortality situation?
- Does the country have a strategy for improving maternal health?
- Is there a policy on maternal health?
- Is there a group/secretarial co-ordinating policies and implementation of Safe motherhood activities?
- Does the country have an action plan?
- Does the health budget contain funds for safe motherhood activities?
- What percentage of the health budget is for SM activities?
- What health laws, health sector policies and customs affect maternal mortality?
- Is abortion legal?

POPULATION AND FERTILITY

- Is there a Population Policy?
- Who is the population at risk?
- No of pregnant women (in 5-yea age-groups)
- Total population size
- Number of women of reproductive age
- Number of married women of reproductive age
- Crude birth rate
- The general fertility rate
- Age-specific fertility rates
- Size of adolescents
- Does the fertility pattern contribute to unsafe motherhood
- Total fertility rate (surveys, census or calculated from age-specific rates)
- What if anything, is being done to reduce fertility and prevent unwanted pregnancy
- Data on contraceptive prevalence rate
- The mix of methods used
- Demand for contraception-percentage of fecund women who wanted not more children but who or not contracepting, the percentage of women with unplanned pregnancies
- Are complications of unsafe induced abortion common

MATERNAL MORTALITY STATISTICS

- How high is maternal mortality?
- Maternal mortality ratio

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- What are the main causes of maternal death? Do these include indirect causes?
- (Look for studies and quote the figures)

MATERNAL MORBIDITY

- What are the major causes of maternal morbidity (levels of acute complications and chronic complications - from studies)
- What is the level of maternal undernutrition
- Prevalence of anemia and its causes, iodine deficiency, (indicates micronutrient deficiency)
- Weight gain, arm circumference
- Food taboos and preferences during pregnancy
- What are other possible indicators of maternal mortality and morbidity
- Prevalence of STD
- Prevalence and forms of female circumcision, violence against women
- Over medicalization - cesarian section rate,

BREASTFEEDING PRACTICES

- % initiating exclusive breastfeeding, duration, hospital practices, timing of supplementation

SOCIAL AND ECONOMIC STATUS

- What aspects of women's social and economic status adversely affect safe motherhood?
- Percentage of women who are literate
- Percentage of women who are enrolled in primary and secondary school
- Women's access to resources
- What are the social and economic consequences of a mother's illness or death
- Intestate law?
- State of women and children in Ghana (UNICEF)
- What happens to her children (case studies)

RESEARCH INSTRUMENT 3:

Format for interview with policy makers

Mother Care Africa Initiative Research Project Qualitative assessment of Essential Obstetric Care in Ghana - February, 1998

INTERVIEW WITH CHAIRMAN/MEMBERS OF SAFE MOTHERHOOD TASK FORCE

INSTRUCTIONS TO INTERVIEWER:

QUESTIONS:

QC

[illegible]

[illegible] the [illegible] basis of the safe motherh[illegible] meeting?
(national/regional) Yes /

* What strategies does the country have for improving maternal health? List them

* Is there a policy on maternal health? Yes / No

* Is there a group/secretarial co-ordinating policies and implementation of Safe Motherhood activities (eg a SM Task force/co-ordination committee) If yes, what is their role?

* What is being done in implementing the policies on SM

* What problems/barriers exist in the implementation of Policies

* Does the country have an action plan for Safe Motherhood Yes / No

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RESEARCH INSTRUMENT 4:

Mother Care Africa Initiative Research

Project

Qualitative Assessment of essential Obstetric Care in Ghana,
- February, 1998

Interview with SERVICE PROVIDERS and facility inventory at FIRST REFERRAL LEVEL - HOSPITAL

INSTRUCTIONS TO INTERVIEWER

Some of the questions could be answered by Interviewing providers (doctors, midwife, midwife supervisor) or through observation Interview the person who can offer the most acurate information

Country	Ghana
Name of Respondent	
Position of Respondent Grade of Respondent	
Questionnaire Number Hospital Name	
District	
Language of Interview	
Date of Interview	
Interviewer Name	

TIME INTERVIFW BEGINS - (Circle AM/PM)

Introduction Format.

My name is and I am working with the Ministry of health on a Safe Motherhood Programme, aimed at improving services for pregnant women I am speaking with many health personnel in the region and would like to ask you some questions about the services the hospital provides for pregnant women

I assure you that all of your responses will be kept in the strictest confidence

MIDWIVES:

QD	
1	Are there protocols on the management of obstetric complications at each level of health care deliver (Ask about SM clinical protocols) Yes / No
2	Are providers trained in the use of thes protocols? Yes / No
3	Is there co-ordination in the identification and management of complications among the levels of providers? Yes / No
4	What supervisory systems exist daily conferences, ward rounds
5	Are supervisors doing their job? Yes / No
6	What information/data exists on Safe Motherhood?
7	Checklist of supplies and equipment (REF 34)
8	Is there a site where women with obstetrical complications can be managed by trained medical personnel-maternity homes, health centres with staff trained in life saving skills, TBA, protocols, what system of communication is availabale
9	How are women transported to the facility?
10	What health laws, health sector policies, and customs affect maternal mortality?

MATERNAL & CHILD HEALTH

1 What services does the institution offer

2 Category of Staff·

- Antenatal care
- Supervised Deliveries
- Postnatal care
- Family Planning
- Post abortion care
- Community IE & C

Category of Staff	Number	Role/Function

Which category of health personnel provide the following services

Antenatal Care
Deliveries
Postnatal care
Neonatal care
Breech delivery
Manual removal of Placenta
MVA
Vacuum extraction

3 Are these services provided by Medical Officers?

a Laparotomy for C/S, Ectopic pregnancies
b EOU using MVA
c Vacuum
d Anaesthesis
e Infant Resuscitation
f Use of partograph
g Manual Removal of placenta
h Breach delivery
i Permanent and long contraception
j Normal deliveries

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k Episitomy and laceration Repair
l Others - Specify

4 How many midwives have benefitted from training in the use of Safe Motherhood Clinical protocols

5 Are Safe Motherhood manuals being used effectively? Yes / No

6 Are there any difficulties being faced in implementing aspects of the protocols by service providers? Yes / No

7 Is the partograph being used? Yes / No

8 How many people in the Labour ward can use the partograph effectively

9 Are infection control measures being practiced

- hand washing
- decontamination
- sterilization/HLD
- waste disposal

If Yes - how
If No - why

10 Is there any service the facility cannot offer as a result of lack of a particular equipment? Yes / No

11 Can basic Obst Emergencies be handled effectively? Yes / No

12 How far is your Health Centre?

13 How much does it cost to transport a client to the referral centre?

14 What problem do you encounter with referrals?

15 Is there any form of male participation in maternity care? Yes/No

16 Are there community based provider eg TBA private sector midwives Yes / No

17 Are the TBAs supervised by Midwives? Yes / No

18 Are inservice training programmes organised for staff on Safe Motherhood?

19 Is there any form of assistance from any organisation?

If Yes
20 In what way does the organization assist the facility?

3 2 What is the laid down referral system?

Any referral form available?

How is the referral system functioning

3 3 How are these service working

AP, IP, PP, PA

How close are these service to clients

3 4 Are males involved in the provision of maternal services

Are these services integrated in SM

- Family Planning
- STD/HIV
- Nutrition Services

3 5 Is the community involved in the provision of SM service

IMCs discuss SM issue Yes / No

Have F/P counsellors undergone any training in counselling? Yes / No

3 6 Do community based SM models exist? Yes / No

Describe the models

3 7 What training programme are planned in the District

3 8 Is there any supervisory activities on SM

- District
- Regional
- National

What logistics/supplies are available

4 0 MONITORING AND EVALUATION AT FACILITY/SERVICE LEVEL

Is this done

4 1 How is monitoring done What checklist/indicators are used?

* Local checklist
* Regional "
* National "

How is evaluation done What checklist/indicators are used?

* Maternal Mortality ratio
* Maternal Mortality rate
* C Y P
* F/P Acceptor Rate
* No of still births
* Antenatal coverage
* Postnatal coverage

4 2 Is there a system whereby maternal & perinatal deaths are audited?

4 3 How do you monitor & evaluate your services optums

4 4 Any Data available on services offered & on monitoring & evaluation

Yes / No

4 5 How is the data used at your local level

5 0 RESEARCH

5 1 Has any research/survey on SM been carried out? Yes / No

When what studies do you know about

What are the main findings

5 2 Have these finding had an impact on policy, if so give example(s)

5 3 Are midwives, involved in research at local level

What is the level of involvement?

- Collecting data
- Informed about findings or research
- Co-investigators
- Principal investigators

5 4 Has the research findings been disseminated?

RESEARCH INSTRUMENT 5:

Mother Care Africa Initiative Research Project:

Qualitative Assessment of Essential Obstetric Care:

Inventory List

CHECKLIST FOR EQUIPMENT

F IUD Kit Complete

Equipment	Quantity
Metal sterilization tray, with cover	[ ]
Bivalve speculum	
Small	[ ]
Medium	[ ]
Large	[ ]
Sponge forceps	[ ]
Vulsellum forceps	
Dressing forceps	
Metal bowl	
Vulva pads	

G Mini laparotomy kit Complete

Tissue forceps (Allis, 19 cm	[ ]
Towel clips (backhaus)	[ ]
Syringe, anaesthetic (control) 10 ml	[ ]
Hypodermic syringes, 10 ml	[ ]
20-gauge hypodermic needles, 4 cm	[ ]
Dressing forceps, 14 cm	[ ]
Tissue forceps, standard, 14 cm	[ ]
Straight triangular point suture needles, 5 5 cm	[ ]
Taper point needles (Mayo), size 6	[ ]
Urethral catheters (French gauge)	[ ]
size 14	[ ]
size 16	[ ]
size 18	[ ]
Tenaculum forceps	[ ]
Uterine elevator (Ramathibodi)	[ ]
Tubal hook (Ramathibodi)	[ ]
Proctoscope	[ ]

	Stainless steel sponge bowl	[ ]
	Retractors (Richardson-Eastman)	[ ]
	Abdominal retractor	[ ]
	Instrument tray, covered, 22 5 x 12 5 x 5 cm	[ ]
	Towel clips (Backhaus)	[ ]
	Forceps, haemostatic	
	straight, 14 cm	[ ]
	curved, 12 5 cm	[ ]
	Tissue forceps (Allis), 15 cm	[ ]
	Surgical knife handle, No 3	[ ]
	Surgical blades, size 10	[ ]
	Hypodermic needles, 22-gauge	[ ]
	Hypodermic needles (Luer), 25-gauge	[ ]
	Needles, suture, straight	[ ]
	Needles, suture, for catgut (Mayo) 1/2 circle	[ ]
	Scissors, suture, angled on flat, 14 cm	[ ]
	Syringes, anaesthetic (control) (Luer), 5 ml	[ ]
	Syringes, hypodermic, 5 ml	[ ]
	Sterilizer, instrument, 20 x 10 x 6 cm	[ ]
	Forceps (Cheatle), 26 5 cm	[ ]
I	**Equipment for neonatal resuscitation**	
	Mucus catheter (sterile), rubber, open-ended 15 French gauge	[ ]
	Nasal catheter (sterile), rubber, open-ended 8 French gauge	[ ]
	Endotracheal tubes, sterile	[ ]
	12 French gauge	[ ]
	Curved stylet, sterile (for stiffening endotracheal tube when intubation is difficult)	[ ]
	Suction catheters, sterile, 6 French gauge	[ ]
	Infant laryngoscope (Magill), with spare bulb and batteries	[ ]
	Ventilatory bag	[ ]
	Oxygen cylinder, either with 40-cm water manometer and flowmeter or with safety valve and rubber bag (simple resuscitator)	[ ]
	Infant face masks	[ ]
	Airways	[ ]
	Umbilical vein catheters, sterile	[ ]
	Heat source	[ ]
	Thermometer, low-reading	[ ]
	Mouth suction device (Delee)	[ ]

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J Equipment for Anaesthesia

Anaesthetic face masks	2 of each size (infant to large adults) total 14
Oropharyngeal airways	2 of each size 00 to 5, total 12
Laryngoscopes	2 handles + 3 pairs of blades, or 2 adult + 2 peadiatic plastic laryngoscopes
Endotracheal tubes	Sizes 2 5-10 mm (internal diameter) in 0.5 mm steps, Oxford or Magil or similar, with cuffs only on sizes over 6mm
Urethral bougies	for use as intubating styles
Intubating forceps (Magill)	In an emergency, ovum forceps can be used instead
Endortracheal tube connectors	15 mm plastic (can be connected directly to the breathing valve), 3 for each tube size
Catheter mounts (sometimes also called endotracheal tube connectors)	antistatic rubber, 4
Breathing hose and connectors	2 lengths of 1 metre antistatic tubing 4 lengths of 30 cm for connection of vaporizers T-piece for oxygen enrichment
Breathing valves	universal non-rebreathing valves (6 adults + 2 paediatric)>
Breathing systems (for continuous-flow anaesthesia)	T-piece system (Ayre) breathing system (Magill)
Self-inflating bellows or bag	1 for adults + 1 for children
Anaesthetic vaporizers (draw-over type)	for ether, halothance and trichloroethylene
Equipment for intravenous use	needles and cannulas,including paediatric sizes and an umbilical vein catheter infusion sets
Spinal needles	range of sizes, 18-gauge to 25-gauge
Suction apparatus	foot-operated or electrically operated

Materials for side-ward laboratory tests and blood transfusion

Laboratory Test	
a	Preparation and staining of thin blood films
b	Thick blood film for malaria parasites
c	Total and differential leukocyte count
d	Examination of haemoglobin
e	Erythrocyte volume fraction (haematocrit)
f	Detection of glucose in urine
g	Detection of ketones in urine
h	Detection of protein in urine
i	Detection of bile pigments in urine
j	Detection of urobilinogen in urine

Essential materials for the provision of donor blood for transfusion

Collection of blood

Cotton wool and ethanol
Sphygmomanometer cuff
Airway needle for collecting bottle
Blood collecting set containing 120 ml of acid-citrate-glucose solution
An object for donor to squeeze
Artery forceps
Scissors
Adhesive tapes
Pilot bottle containing 1 ml of acid-citrate-glucose solution
attached to the collecting bottle
A refrigerator (temperature 4-6^{0}C) is needed for storage of donor blood A domestic refrigerator operated on either gas or electricity can be used, but the refrigerator must not be opened too often A refrigerator that opens at the top is preferable to a cabinet refrigerator
Note a kerosene-operated refrigerator is not suitable for blood storage

ESSENTIAL DRUGS FOR OBSTETRIC SERVICES

Anaesthetics, oxygen, muscle relaxants and preoperative medication

a Atropine
b Diazepam
c Ether
d Lidocaine
e Nitrous oxide
f Oxygen
g Suxamethonium
Thiopental

Analgesic

a Acetylsalicylic acid
b Mortphine
c Paracetamol
d Pethidine

Antiallergics

a Epinephrine
b Hydrocortisone
c Promethazine

Antianaemia drugs

a Ferrous sulfate
b Folic acid
c Iron dextran

Anticoagulant and antidote

a Heparin
b Protamine sulfate (as antidote to heparin)

Antidiabetic agents

a Insulin
b Tolbutamide

Antihypertensive and other cardiovascular drugs

a Aldomet
b Hydralazine
c Digoxin
d Propranolol

Anti-infective drugs/antibiotics

a Amoxyl
b Benzylpenicillin
c Procaine benzylpenicillin
d Chloramphenicol
e Gentamicin
f Metronidazole
g Sulfamethxazole + trimethoprime
h Tetracycline

Antimalaria drugs

a Chloroquine
b Proguanil
c Pyrimethamine + sulfadoxine
d Quinine

Blood products

a Dried human plasma

Disinfectants and antiseptics

a Chlorine Sol
b Chlorhexidine
c Iodine
d Surgical spirit

Diuretics

a Furosemide

Intravenous solutions

a Water for injection
b Compound solution of sodium lactate
c Glucose 5%, 5%
d Glucose with sodium chloride
e Potassium chloride
f Sodium chloride
g Sodium bicarbonate

Contraceptive Methods

a Oral contraceptives
b Injectables
c IUD
d Bouner & Epermicides
e Norplant
f Sterilization

Oxytocics

a Ergometrine
b Oxytocin

Psychotherapeutic drugs

a Diazepam

Sera and immunoglobulins

a Anti-D immunoglobulin (human)
b Tetanus antitoxin (antitetanus immunoglobulin (human)
c Tetanus toxoid

SPACE REQUIREMENTS

Maternity Ward

Overbed tables (optional)
Wash-basins
Mobile screens
Air-conditioner or fans (optional)
Toilets

Beds should be standardized - a convenient size is 200 x 100 cm Spring beds, initially comfortable, sag in the middle later For this reason, the preference is for hoop iron mesh riveted to frames, such beds ventilate well and do not sag with age The mattress should be about 10 cm thick

Treatment Room

Cupboard unit and work top	[ ]
Wall cupboards	[ ]
Shelves, hooks	[ ]
Examination couch	[ ]
Stool	[ ]
Trolley	[ ]
Bins	[ ]
Paper-towel dispenser or equivalent	[ ]
Wash-basin with elbow-operated taps	[ ]
Autoclave or sterilizer (optional)	[ ]
Stands for intravenous fluid drips	[ ]
Sphygmomanometers + binaural stethoscopes	[ ]
Thermometers	
Suction machine	[ ]

BATHROOM

Shower room

Same as bathroom, except that shower replaces bath

Nurses' station

Nurses' bay

Room for cleaners and domestic staff

Cleaning sink, domestic sink, draining board, locker, storage for brushes and brooms, bins duster rack, cupboard for cleaning materials

Staff clockroom and toilets

Pantry or ward kitchen

Labour delivery suite

Nurses' bay

Labour/delivery room

Delivery beds with rods and stirrups for lithotomy position	[ ]
Surgeon's stool	[ ]
Wash-basins wit h elbow-operated raps	[ ]
Trolleys	[ ]

Cupboard for storage of sterile packs for various forms of vaginal delivery [ ]
Bins [ ]
Wall clock with seconds hand [ ]
Thermometers [ ]
Sphygmomanometers + binaural stethoscopes [ ]
Fetal stethoscopes [ ]
Mobile adjustable angled lamps [ ]
Neonatal resuscitation trolley or shelf [ ]
Oxygen cylinders [ ]
Cupboard for resuscitation equipment [ ]
Air-conditioner or fan (optional) [ ]
Suction machine (if not available in separate eclampsia room) [ ]

Eclampsia room (optional)

Sterilizing facility

Small autoclave or sterilizer (in labour room or other area) [ ]

Shower room, cleaners' room, sluice room

As described for maternity ward

Side-ward laboratory

Store for consumables

Shelves, racks, cupboards

Store for non-consumables

Shelves, racks, hooks

OPERATING SUITE

Main operating theatre

Operating table [ ]
Operating stools [ ]
Ceiling-mounted shadowless lamp, with 5 lamps or bulbs [ ]
Pedestal-mounted shadowless lamp, run off storage batteries in emergencies [ ]
Trolleys for instruments [ ]
Stand for intravenous fluid drips [ ]
Air-conditioner (optional) [ ]
Cupboards, shelves, drums for linen [ ]
Diathermy apparatus [ ]

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Swab rack	[ ]
Containers for used swabs and instruments	[ ]
Suction apparatus	[ ]
Sterilizer (35 x 38 cm, 139 litre), fuel-operated	[ ]
Sterilizer drum (20 x 10 x 6 cm)	[ ]
Kerosene stove	[ ]
Forceps (Cheatle) 26 5 cm	[ ]
Sterilizer forceps 20 cm	[ ]
Neonatal resuscitation trolley (optional)	[ ]

Sterilizing room and store

Small autoclaves, cupboards and shelves for sterile store, large tables for sorting and packaging, drums, and changing and toilet facilities

The instruments to be autoclaved should have first been cleaned in their respective wards The same applies to linen, which should be laundered before being sterilized On the whole, in a district hospital setting small-capacity autoclaves are preferable They take a shorter time to run than large-capacity autoclaves, and are therefore less damaging to soft items like linen and dressings For this reason, it is more efficient to use a small autoclave several times a day than to use a large machine once daily Proper maintenance of autoclaves is imperative

Staff Changing rooms

TROLLEY BAY

Scrub-up post

Sink units with elbow-operated taps	[ ]
Soap	[ ]
Bowls containing antiseptic solution	[ ]
Scrub-up hand brushes	[ ]

Anaesthetic room

Recovery room

Trolley(s)	
Sphygmomanometer	[ ]
Stethoscopes	[ ]

Office

Writing desk with cupboards underneath	[ ]
Chairs	[ ]
Low table	[ ]
Notice board	[ ]
Crockery and cutlery for light refreshment	[ ]
Small refrigerator	[ ]

RESEARCH INSTRUMENT 6:

Mother Care Africa Initiative (Copy as on Instrument 4)

INTERVIEW WITH PROVIDERS AND Facility Inventory for Health Centre/Maternity Homes

Country	Ghana
Name of Respondent	
Position of Respondent	
Grade of Respondent	
Questionnaire Number	
Hospital Name	
District	
Date of Interview	
Interviewer Name	

Time Interview Begins . .. . (am/pm)

Introduction format

My name is and I am working with the Ministry of Health on a Safe Motherhood programme aimed at improving services for pregnant women

I am speaking with many people in the region and would like to ask you some questions about the services the hospital provides for pregnant women

I assure you that all your responses will be kept in the strictest confidence

QF

* Is there any IE & C activity going on in the community? Yes/No
  If yes, who is the target audience?

* Is IEC/C strategy/messages based on research findings?

* Are there any monitoring and evaluation tools to measure effectiveness of the IEC/C strategy? Have evaluations been carried out? If so, have any changes in knowledge and changes in behavior trends occurred? If so describe (If no monitoring/evaluation in place, ask for anecdotal impressions

Community Mobilization/Participation

* Describe community mobilization methods and activities,(for example, are the communities involved in dialogues with health facility staff for design of services from planning to implementation?)
* Who are involved in the community mobilization activities?
* Are there cost-sharing mechanisms in place?
* If yes, have these mechanisms affected service utilization?

Training

* Has there been any training of community workers? If yes, describe

Monitoring and Evaluation

* Have key indicators been defined measuring increase in knowledge, changes in been?
* How are referrals made in the community
* Who supervises your facility
* When was the last time she/he came on supervisory visit
* How often does your supervisor visit you

RESEARCH INSTRUMENT 7:

Community Assessment

Q7 COMMUNITY PROFILE

- Location of Community
- Economic activities and job availability (gender balance in the economic activities).
- Income and expenditure patterns;
- Formal institutions and structures
- Traditional institutions;
- Education institutions
- Water sources and utilization;
- Communication infrastructure
- Sanitation

Q 8. SAFE MOTHERHOOD (and maternal health)

* Knowledge/understanding of safe motherhood issues
* Care taken during pregnancy and after delivery
* Traditional methods to cope with pregnancy
* Clinic/Hospital attendance during pregnancy and how long
* Where do you deliver and by who
* Cost of care during pregnancy and after delivery
* Birth spacing Is it important to women
* Problems/Diseases affecting children
* Main health problems/sicknesses common with women now
* What do they see as the most effective steps that can be taken by families, communities as well as individuals district assembly, government agencies and other institutions to address these problem
* Decision making in household in relation to child birth, spacing etc
* Perception/attitude towards female genital mutilation
* Attitude of service providers (set their comment by mentioning specific providers
* Utilization of TBA services (contrast with utilization of orthodox services) - which services do they use after
* Knowledge of STDs and HIV/AIDS

16 L

Q9. FAMILY PLANNING (FP)

* Knowledge of women in FP (including Lactational Amenorrhea Contraceptives)
* Knowledge in traditional methods of Family Planning
* Perceptions and attitudes of each group towards FP
* Knowledge of long term contraceptives and attitudes towards such methods
* Method of FP known by them (modern/traditional/natural)
* Current for using a particular method
* Reasons for using a particular method
* Reasons for not using a particular method again
* Institutions and people providing FP services in the community
* Type of services provided by these institutions and people
* What steps can be taken to promote use of FP services
* How are decisions in the family and household made in relation to childbirth, spacing and use of FP services i e when and if it must be used at all Who has the final say and authority
* Ideal family size, sex preferences (probe for views of men and women)
* Number of children per woman/man
* Whether the number of wives a man has is considered as a family planning method
* How affordable are the family planning services received
* Quality of care and services
* How do people get information about family planning
* Communication between couples on FP reproductive health issues
* What do you see as the most effective steps that can be taken by families, communities as well as individuals, district assemblies, government agencies and other institutions to address these problems

MALAWI

Malawi

ASSESSING SUCCESS OF SAFE MOTHERHOOD ACTIVITIES

1 ORGANIZATIONAL OR INSTITUTIONAL PROJECT DATA

2 NAME OF ORGANIZATION/INSTITUTION

3 CATCHMENT POPULATION ----------

4 TOTAL POPULATION SERVED ----------

5 WOMEN OF CHILD BEARING AGE ----------

6 CHILDREN UNDER FIVE ----------

7 MATERNAL DEATH FOR (1996) ----------

8 CAUSES OF MATERNAL DEATH

---

9 NEONATAL DEATHS FOR (1996)

10 CAUSES OF NEONATAL DEATHS

---

11 NUMBER OF ANC (1996) ----------

12 NUMBER OF LIVE BIRTHS (1996) ----------

13 NUMBER OF HOSPITAL DELIVEIES (1996) ----------

14 NUMBER OF TBA DELIVERIES (1996) ----------

PROJECT OR PROGRAM DATA

15 What is the specific name of your project----------

16 What are the goals or objectives of your program

---

17 What are the strategies for achieving these goals or objectives?---------

---

---

18 What is the budget and time span for your project or program

19 Who are your key partners in the implementation of this project?

---

17 What Roles to each of these partners play?

---

18 What maternal and newborn services does your program/project provide?

---

19 What Categories of health workers are involved in the provision of these services?

20 What is the exact role of each of these categories?

21 In your Opinion do you have adequate staff for implementation of these services?

22 Are these services integrated with FP, STD, and HIV/AIDS services?
Yes-------- No--------

23 If yes explain how the integration is being implemented

24 How accessible are these services to the rural communities of this area?

25 How are men involved in the services of this program?

26 Do you have protocols or guidelines for the health workers to use when providing these services?

27 If yes what is the content of these protocols?

28 Are there specific IEC activities in this project?

29 If yes what are the targets and content of the IEC messages?

30 Does your project use the media as part of your IEC channel
Yes---------- No----------

31 How long has your project been in operation? --------Yrs/Mons ---------

32 What is the current status of implementation for your project?

33 Are there any rumors or misconceptions at community level that are affecting successful implementation of your project?

Yes --------No -------

34 If Yes what are these rumors or misconceptions and what are you doing to dispel them?

---

35 In your opinion, do you think your project has made any positive impact? Yes-------- No----------

36 If Yes, what impact have you observed?

---

37 How was this impact measured?----------

---

38 Are there any specific strategies for mobilizing community participation in the project? Yes -------- NO----------

39 If yes, what are they and what has been the outcome?

---

40 What are the future plans of this project/program?

41 What mechanisms have you put in place to sustain activities of the project/program?

42 Are there any research activities built into the implementation of this project? Yes ------- No--------

43 If yes - What research has been/or will be done? And how would the results be utilized?

Any Other comments

QUESTIONAIRE USED TO INTERVIEW THE TBA

1 Have you ever been trained or gone for refresher course?

2 What did you learn at the course?

3 Were you involved in the planning of the Safe motherhood programme?

4 What kind of services do you give?

5 Do you give messages on Aids and STDs?

6 Can you read and write?

7 How many womens do you see per year /week?

8 Which child-spacing methods do you recommend to the women ?

9 What advantages of child-spacing do you tell the women?

10 Do Nurses visit and advise/supervise you ?

11 Do you have problems referring patients to Clinics /hospital? If so what problems?

12 Why do women deliver at home although most of them attend ante-natal ?

13 How do women come to your place ?

14 Who pays for transport and services/

15 Who makes the dicision in communities as to whether or not the women should go and deliver at the hospital or health centre or TBA?

SAFE MOTHERHOOD AFRICA INITIATIVE

Qestionnaire used to interview the Chairperson of the Community Health Committee

1 How is the community mobilised?

2 Who are involvrd in the community mobilisation activities?

3 Is there dialogue with health facilities staff regarding the planning and implementation of safe mother-hood?

4 Are there cost-sharing mechanism in place?

5 How are women transported to referral health facilities?

6 Who pays for transport?

7 Has there been training of community workers? If yes, describe

8 How can you tell that the project has had the impact (measure of success?)

9 Are there community maternal new-born services? Who provides these services?

10 What is the role of the community in the project and other efforts?

UGANDA

H-2
Uganda

ASSESSMENT OF SAFE MOTHERHOOD IN UGANDA

INTERVIEWS
MS OR I/C HEALTH CENTRE(NAMES) _____
OR
REPRESENTATIVE:_____ _____DISTRICT
HOSPITAL(HC) _____DATE _____

MATERNITY BEDS	DELIVERIES/YEAR
MATERNAL DEATHS	ANTENATAL CASES/YEAR
SOURCE OF DATA	ABORTIONS/YEAR
INSTITUTION MMR	MIDWIVES
OTHERS WORKERS	
SUPERVISORY VISITS BY	

EVER HEARD OF SAFE MOTHERHOOD?

MIDWIVES RESPONSIBILITIES IN HOSP/HEALTH CENTRE

MW RESPONSIBILITIES OUTSIDE HC OR HOSP

SPECIAL SAFE MOTHERHOOD ACTIVITIES IN HC OR HOSP
-TRAINING

-ADVOCAY

-SERVICES

-COMMUNITY

-CLINICAL PROTOCOLS EG TREATMENT OF PET?

-MEDICAL AUDIT AND BY WHOM

-HOW ARE WOMEN AND NEW BORNS REFFERED?

-DIFFICULTIES OF REFFERAL?

What is intergrated with what?

Antepartum	Family Planning
Intrapartum	STD/HIV
Postpartum	Nutrition
Post abortion	EPI

How is monitoring done and by who?
Indicators?

Local use of data?

What research and by whom?

OTHER COMENTS?

ASSESSMENT OF SAFE MOTHERHOOD IN UGANDA

INTERVIEWS
NURSING OFFICER OR I/C HEALTH CENTRE(NAMES)
DISTRICT
HOSPITAL(HC) DATE·
MATERNITY BEDS DELIVERIES/YEAR
MATERNAL DEATHS. ANTENATAL CASES/YEAR
SOURCE OF DATA: ABORTIONS/YEAR
INSTITUTION MMR MIDWIVES
OTHERS WORKERS
SUPERVISORY VISITS BY

EVER HEARD OF SAFE MOTHERHOOD?

MIDWIVES RESPONSIBILITIES IN HOSP/HEALTH CENTRE·

MW RESPONSIBILITIES OUTSIDE HC OR HOSP

SPECIAL SAFE MOTHERHOOD ACTIVITIES IN HC OR HOSP
-TRAINING.

-ADVOCAY:

-SERVICES·

-COMMUNITY·

-CLINICAL PROTOCOLS EG TREATMENT OF PET?

-MEDICAL AUDIT AND BY WHOM

-HOW ARE WOMEN AND NEW BORNS REFFERED?

-DIFFICULTIES OF REFFERAL?

What is intergrated with what?

Antepartum	Family Planning
Intrapartum	STD/HIV
Postpartum	Nutrition
Post abortion	EPI

How is monitoring done and by who?
Indicators?

Local use of data?

What research and by whom?

OTHER COMENTS?

ASSESSMENT OF SAFE MOTHERHOOD IN UGANDA

INTERVIEWS
DMO(NAMES):_____

O R
REPRESENTATIVE·_____
DISTRICT:_____DATE:_____
POPULATION: WOMEN REPRODUCTIVE AGE
MATERNAL DEATHS MATERNAL MORTALITY RATE:
SOURCE OF DATA
NUMBER OF HOSPITALS·(GOV) (NGO)
NUMBER OF DOCTORS IN DISTRICT: NO.WITH EOC:
NO.OF DOCTORS COMPETENT IN EMERGENCY OBS CARE EG. CS:
NO OF MIDWIVES MIDWIVES NOT IN HOSPITAL:
SPECIAL SAFE MOTHERHOOD ACTIVITIES IN DISTRICT:
-TRAINING:

-ADVOCAY:

-SERVICES

-COMMUNITY:

-CLINICAL PROTOCOLS EG TREATMENT OF PET?

-REFFERAL SYSTEM IN DISTRICT

-SERVICES IN DISTRICT

SERVICE TYPE	COMMUNITY	HC	HOSPITAL
Antepartum			
Intrapartum			
mama kit:			
vacuum ext:			
cs			
blood trans:			
Postpartum			
Post abortion			

What is intergrated with what?

Antepartum	Family Planning
Intrapartum	STD/HIV
Postpartum	Nutrition
Post abortion	EPI

Examples of community linkages with providers?
Community
Private Midwife
Health Centre
Hospital
Policies at district that promote Safe Motherhood?

Annex A-2

UGANDA SAFE MOTHERHOOD ASSESSMENT ~~APPENDIX J~~ CHECK LISTS IN HOSPITAL UNITS

OBSERVATIONS

NAME _____
DATE _____
FACILITY _____
DISTRICT _____

1 EQUIPMENT

ITEM		POSSESSION	ACCESS	CONDITION	SEPSIS CONTROL
1	BP machine				
2	Fetoscope				
3	Apron				
4	Gloves				
5	Artery Forceps				
6	Epis scissors				
7	Cord scissors				
8	Needle holder				
9	Dissecting Forceps				
10	Suture needles				
11	Sutures				
12	Syringes				
13	Bulb syringes				
14	Rectal Catheter with funnel				
15	Safe water/tea				
16	Ergometrine				
17	Acetic Acid				

ITEM		POSSESSION	ACCESS	CONDITION	SEPSIS CONTROL
1	BP machine				
2	Fetoscope				
3	Apron				
4	Gloves				
18	Lidocaine				
19	Burner				
20	Test Tubes/holder				
21	Partograph forms				
22	AP cards				
23	Midwifery Handbook				
24	LSS Manuals				
25	Gestation wheel				
2	FACILITY SET UP				
1	Apgar chart				
2	Time piece				
3	Place to resuscitate baby				
4	Water storage				
5	Light source				
6	Soap and water/towel				
7	Way to boil water				

ITEM		POSSESSION	ACCESS	CONDITION	SEPSIS CONTROL
1	BP machine				
2	Fetoscope				
3	Apron				
4	Gloves				

3 PRACTICE OBSERVATION

Uganda

COMMUNITY ASSESSMENT (UGANDA)

A VIDEO DOCUMENTATION

- Heath facilities of village (community level)
- Services provided at this level of health care
- equipment at community care facility
- interview with health care providers
- (midwives and traditional birth attendants)
- interviews with community leaders, women and mothers
- interview with community mobilisers

B FOCUS GROUP DISCUSSIONS

- community leaders and administrators
- women groups
- youth

1 What means of communication is available in the community for passing information and for transport or transfer of an ill person

2 What does the community consider to be a medical emergency (conditions needing urgent attention)

3 When do you decide to take action on emergency or look for assistance?

4 What is the legal age for men/women to get married? What age does the community consider to be right

5 I E C Does the community get any form of health education?

6 I E C What information does the community regularly get?

7 Who carries out this health education?

8 Where do members of the community usually go for health care

9 Who pays for medical treatment

10 What activities does the community or its members carry out to generate income?

11 Do local drug stores exist in the village and who runs them? What are the other sources of medications?

12 Are the drug shops licensed?

13 Have you ever donated blood?

14 Where did you donate blood?

15 When your relative or immediate family member needs blook, what do you do?

16 How would you know that your relative needs blood?