(2) (Y=Yes, N=No, N/A=Not applicable)

	Patient		D			E			F			Comments
VI-1	History	Personal	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-2		Cioeconomic	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-3		Sexual	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-4		Psychological (emotional)	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-5		Nutritional	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-6		Gynaecological	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-7		Contraceptive	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-8		Past obstetric	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-9		Present pregnancy	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-10	Food supplements		Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-11	Vitamin supplements		Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-12	Iron supplements		Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-13	Blood pressure check		Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-14	Abdominal examination		Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-15	Foetal heart beat		Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-16	Pelvic capacity assessment		Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-17	TT immunization		Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-18	Given anti-malarials		Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-19	Urine test for albumin		Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-20	Blood test for:	Haemoglobin	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-21		VDRL	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-22		Malarial Parasites	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-23		Sugar	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-24	Clinical estimation of haemoglobin		Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-25	Advice on:	Rest	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-26		Diet/nutrition	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-27		Exercise	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-28		Sexuality during pregnancy	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-29		Complications during pregnancy	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-30		Where to deliver	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-31	Discussed on Family Planning		Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-32	Information of	Physical examination	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-33	Findings on:	Maternal health	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-34		Foetal growth	Y	N	N/A	Y	N	N/A	Y	N	N/A	
VI-35		Foetal well-being	Y	N	N/A	Y	N	N/A	Y	N	N	

Comments: _____

Surveyors Observation:

Appendix 2. 8 Time Allocation of Health Workers: work load survey

Name of Health Facility: _____ District: _____ Name of Surveyor: _____

Date:

TIME ALLOCATION OF HEALTH WORKERS: WORK LOAD SURVEY

Please observe two health staff at maternity ward. Categories of workers to be observed are: Registered Nurse Midwife, Enrolled Nurse Midwife, and Patient Attendant. Please do not forget to explain these health staff that this is not to examine their work attitude or to evaluate their individual performance. This is to obtain information on detailed work schedule of health staff to determine future intervention needs. Therefore, the study will be carried out anonymously and the JICA PHC Study Team or District Health Management Team will have no way of knowing individual work load.

Person A: category: _____

	0700		0800		0900		1000		1100		1200		1300		1400		1500		1600	
1: Patient Care																				
2: Meeting																				
3: Administrative work																				
4: Non-nursing duties																				
5. Clinical teaching																				
6. Break and others																				

Appendix 2.9 Facilities with Electricity and Solar Power

District	Facility Name	Facility	Owner	Electricity Operational	Escom Mains	Solar Power	Solar Hot Water
Balaka	Balaka DHO	District Hospital	MOH	Yes	Yes	No	No
	Balaka OPD	Dispensary	MOH	Yes	Yes	No	No
	Mbela	Dispensary/Maternity	MOH	Yes	Yes	No	No
	Pilirani - closed		MOH	Yes	Yes	No	No
	Phimbi	Dispensary/Maternity	MOH	No	No	Yes	No
Blantyre	Chilimoni	Urban Health Centre	MOH	Yes	Yes	No	No
	Chimembe	Dispensary/Maternity	MOH	Yes	Yes	No	No
	College of Nursing	Dispensary	MOH	Yes	Yes	No	No
	Limbe	Urban Health Centre	MOH	Yes	Yes	No	No
	Mpemba	Dispensary/Maternity	MOH	Yes	Yes	No	No
	Ndirande	Urban Health Centre	MOH	Yes	Yes	No	No
	Queen Elizabeth	Central Hospital	MOH	Yes	Yes	No	No
	Zingwangwa	Dispensary/Maternity	MOH	Yes	Yes	No	No
Chikwawa	Chikwawa DHO	District Hospital	MOH	Yes	Yes	No	No
	Kasinthula	Dispensary	MOH	Yes	Yes	No	No
	Mkumaniza	Dispensary/Maternity	MOH	No	No	Yes	No
	Ngabu	Rural Hospital	MOH	Yes	Yes	No	No
Chiradzulu	Chiradzulu DHO	District Hospital	MOH	Yes	Yes	No	No
	Namadzi	Dispensary/Maternity	MOH	Yes	Yes	No	No
Chitipa	Chitipa DHO	District Hospital	MOH	Yes	Yes	No	Yes
Dedza	Chikuse	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Chimoto	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Chitowo	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Dedza DHO	District Hospital	MOH	Yes	Yes	No	Yes
Dowa	Dowa DHO	District Hospital	MOH	Yes	Yes	No	No
	Dzeleka Ref Camp	Dispensary	MOH	Yes	Yes	No	No
	Mponela	Rural Hospital	MOH	Yes	Yes	No	No
	Msakembewa	Dispensary/Maternity	MOH	Yes	Yes	No	No
Karonga	Karonga DHO	District Hospital	MOH	Yes	Yes	No	No
Kasungu	Chulu	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Kaluluma	Rural Hospital	MOH	Yes	No	Yes	No
	Kamboni	Dispensary/Maternity	MOH	No	No	Yes	No
	Kapelula	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Kasungu DHO	District Hospital	MOH	Yes	Yes	No	No
	Mkhota	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Mtunthama	Dispensary/Maternity	MOH	Yes	Yes	No	No
	Santhe	Dispensary/Maternity	MOH	Yes	No	Yes	No

	Area 25	Urban Health Centre	MOH	Yes	Yes	No	No
	Bottom Hospital	Hospital	MOH	Yes	Yes	No	No
	Chimbulanga	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Chitedze	Dispensary/Maternity	MOH	Yes	Yes	No	Yes
	Kawale	Urban Health Centre	MOH	Yes	Yes	No	No
	Lilongwe CH	Central Hospital	MOH	Yes	Yes	No	No
	Lumbadzi	Urban Health Centre	MOH	Yes	Yes	No	No
	Mitundu	Rural Hospital	MOH	Yes	Yes	No	No
	Nathenje	Dispensary/Maternity	MOH	Yes	Yes	No	No
Machinga	Chikweo	Dispensary/Maternity	MOH	No	No	Yes	No
	Machinga DHO	District Hospital	MOH	Yes	Yes	No	Yes
	Namanja	Dispensary/Maternity	MOH	No	No	Yes	No
	Nayuchi	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Ngokwe	Dispensary/Maternity	MOH	No	No	Yes	No
	Ntaja	Dispensary/Maternity	MOH	Yes	Yes	No	No
	Nyambi	Dispensary/Maternity	MOH	No	No	Yes	No
Mangochi	Lungwena	Dispensary/Maternity	MOH	Yes	Yes	No	No
	Makanjira	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Mangochi DHO	District Hospital	MOH	Yes	Yes	No	Yes
	Monkey Bay	Dispensary/Maternity	MOH	Yes	Yes	No	No
	Namwera	Dispensary/Maternity	MOH	Yes	Yes	No	No
Mchinji	Kochilira	Rural Hospital	MOH	Yes	Yes	No	No
	Mchinji DHO	District Hospital	MOH	Yes	Yes	No	Yes
Mulanje	Bondo	Dispensary/Maternity	MOH	No	No	Yes	No
	Chonde	Dispensary/Maternity	MOH	Yes	Yes	No	No
	Mulanje DHO	District Hospital	MOH	Yes	Yes	No	Yes
	Namphungo	Dispensary/Maternity	MOH	No	Yes	Yes	No
Mwanza	Chifunga	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Kunenekude	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Luwani	Dispensary/Maternity	MOH	No	No	Yes	No
	Magareta	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Neno	Rural Hospital	MOH	Yes	No	Yes	No
	Thambani	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Tulonkhondo	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Mwanza DHO	District Hospital	MOH	Yes	Yes	No	Yes
Mzimba	Emfeni	Dispensary/Maternity	MOH	No	No	Yes	No
	Luwelezi	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Mabiri	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Mzimba DHO	District Hospital	MOH	Yes	Yes	No	Yes
	Mzuzu	Urban Health Centre	MOH	Yes	Yes	No	No
	Njuyu	Dispensary/Maternity	MOH	No	No	Yes	No
Nkhata Bay	Chintheche	Rural Hospital	MOH	Yes	Yes	No	No
	Nkhata Bay DHO	District Hospital	MOH	Yes	Yes	No	Yes
	Usisya	Dispensary/Maternity	MOH	No	No	Yes	No

Nkhotakota	Nkhotakota	District Hospital	MOH	Yes	Yes	No	Yes
	Nkhunga	Dispensary/Maternity	MOH	Yes	Yes	No	No
Nsanje	Ndamera	Dispensary/Maternity	MOH	No	No	Yes	No
	Nsanje DHO	District Hospital	MOH	Yes	Yes	No	No
	Nyamithuthu Camp	Dispensary/Maternity	MOH	No	Yes	No	No
	Tengani	Dispensary/Maternity	MOH	No	Yes	No	No
Ntcheu	Biriwiri	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Chikande	Dispensary/Maternity	MOH	Yes	No	No	Yes
	Doviko	Dispensary	MOH	Yes	No	Yes	No
	Dzunje	Dispensary	MOH	Yes	No	Yes	No
	Kandue	Dispensary	MOH	Yes	No	Yes	No
	Katsekera	Dispensary/Maternity	MOH	Yes	No	Yes	No
	Mlangeni	Dispensary/Maternity	MOH	Yes	Yes	No	No
	Ntcheu DHO	District Hospital	MOH	Yes	Yes	No	Yes
Ntchisi	Ntchisi DHO	District Hospital	MOH	Yes	Yes	No	Yes
Rumphi	Enukweni	Dispensary/Maternity	MOH	Yes	Yes	No	No
	Rumphi DHO	District Hospital	MOH	Yes	Yes	No	No
Salima	Lifuwu	Dispensary	MOH	Yes	Yes	No	No
	Salima DHO	District Hospital	MOH	Yes	Yes	No	No
Thyolo	Bvumbwe Research	Dispensary/Maternity	MOH	Yes	Yes	No	No
	Khonjeni	Dispensary/Maternity	MOH	No	No	Yes	No
	Thyolo DHO	District Hospital	MOH	Yes	Yes	No	No
Zomba	Chingale	Dispensary/Maternity	MOH	Yes	Yes	No	No
	Domasi	Rural Hospital	MOH	Yes	Yes	No	No
	Makwapala	Dispensary/Maternity	MOH	Yes	Yes	No	No
	Thondwe	Dispensary	MOH	Yes	Yes	No	No
	Zomba Central	Central Hospital	MOH	Yes	Yes	No	No
	Zomba Mental	Mental Hospital	MOH	Yes	Yes	No	No
Blantyre	Chileka	Dispensary/Maternity	MOH/LG	Yes	Yes	No	No
Blantyre	South Lunzu	Dispensary/Maternity	MOH/LG	Yes	Yes	No	No
Kasungu	Wimbe	Dispensary/Maternity	MOH/LG	Yes	No	No	No
Mwanza	Lisungwi	Dispensary/Maternity	MOH/LG	Yes	No	No	No

Appendix 2.10

MATERNAL MORTALITY AND MORBIDITY IN MALAWI

A REVIEW BY:

PROFESSOR LABAN A.R. MTIMAVALYE
COLLEGE OF MEDICINE
UNIVERSITY OF MALAWI

LARM/March 1999

MATERNAL MORTALITY AND MORBIDITY IN MALAWI

A REVIEW

EXECUTIVE SUMMARY:

This review has shown that there is very little published information regarding maternal mortality and morbidity in Malawi as a whole. The little that is available is mainly from Central sone District Hospitals.

Magnitude of maternal mortality and morbidity

The maternal mortality ratio (MMR) in Malawi varies from as high as 1452/100 000 live births at one of the District Hospitals down to 456/100 000 live births at a Central Hospital. The Malawi National MMR is 620/100 000 live births. For comparison purposes the MMR in Western Europe and North America is around 8-10/100,000 live births. Consequently the morbidities are equally high. Mortalities and morbidities in Malawi are increasing with the presence of undesirable prevalence of HIV/AIDS among the sexually active age groups of Malawian females.

Immediate causes of maternal mortality

These are mainly genital tract sepsis, haemorrhage, complications of obstructed labour, eclampsia, anaemia, malaria and HIV/AIDS.

These causes go hand in hand with operational or associated factors. Important among these include delays, at families and within the health care system, shortages mainly of appropriately trained personnel, equipment and supplies.

The type of women who suffer maternal mortality and morbidity in Malawi: These are mainly youths (average age 25.2 years) low parity with average parity of 2. Those at high risk of suffering maternal mortality include the young, with no or low educational level, low socio-economic status, coming to health facilities late, critically ill and perhaps requiring surgical interventions. Those whose intrapartum care is not well monitored and those whose utilization of family planning is non or low. Those with HIV/AIDS are at even higher risk of mortality and morbidity than those without. Similarly the women who manifested symptoms highly associated with HIV/AIDS before index pregnancy were at higher risk of morbidity in index pregnancy than their negative counterparts.

Avoidability of maternal mortality and morbidity: Most of these maternal deaths are avoidable provided existing financial resources are utilized to improve on service provider personnel, equipment and supplies. Avoidability at family and community levels can be improved through sensitization of local leaders who in turn will mobilize the communities. On long term there is need to improve the level of education and socio-economic levels of the communities.

MATERNAL MORTALITY AND MORBIDITY IN MALAWI - A REVIEW

DEFINITION

MATERNAL MORTALITY is the death of a woman while pregnant or within 42 days after termination of a pregnancy irrespective of the duration or site of the pregnancy; from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Such maternal death may result from obstetric complication(s) of pregnancy, labour, puerperium and from any intervention or sequelae of the above - DIRECT MATERNAL DEATH. It may also be a result of aggravation of existing conditions/diseases by pregnancy or delivery - INDIRECT MATERNAL DEATH.

Maternal mortality is commonly expressed as a MATERNAL MORTALITY RATIO, which is the number of such women who die for every 100,000 live births, OR MATERNAL MORTALITY RATE, which is the number of women who die within the age group of women population of 15 to 49 years.

For audit and clinical purposes, the maternal mortality ratio is used in Malawi.

MAGNITUDE OF MATERNAL MORTALITY IN MALAWI

According to the Demographic and Health Survey (DHS) 1992 in Malawi, 21% of females aged 15-49 years die due to pregnancy and childbearing. The same survey found that the Malawi National maternal mortality ratio during 1986-92 was 620 per 100,000 live births.

Data expressing maternal mortality ratio (MMR) for total communities in Malawi is hard to come by. It is however possible to obtain some data on MMR at health facilities here and there within Malawi. Only a small amount of even such data is published. Thus the following table I indicates the trends of MMR over some years at various health facilities in Malawi.

TABLE 1

AUTHOR	YEAR	PLACE/FACILITY	MMR
C.H.W. Bullough	1977	Southern Malawi	260
Wiebenga et al	1989	QECH - Blantyre	476
	1991	QECH - Blantyre	555
DHS	1986-92	National - Malawi	620
L. Bandawe	1994	Mangochi District Hospital	1452
L.A.R. Mtimavalye	1992	QECH - Blantyre	476
-do-	1994	QECH - Blantyre	456
-do-	1998	QECH - Blantyre	786 (for Jan to June 1998)

NB: (i) The MMR for the developed countries of Western Europe and North America is around 8-10

(ii) During 1994 in QECH, there was 1 maternal death for every 230 deliveries!

These figures express an alarmingly high MMR for Malawi especially if compared to the developed world. Admittedly MMR for Sub-Sahara Africa are equally high as was demonstrated by a multi-centre study conducted in Eastern Central and Southern Africa which included Malawi in 1990/91. Caution also needs to be exercised in the interpretation of these figures for Malawi as the data collection at the different facilities was not standardized nor can completeness of the data collected be guaranteed.

CAUSES OF MATERNAL MORTALITY IN MALAWI

The best ways to make diagnosis regarding the causes of maternal deaths is by combining information from clinical observations, postmortem findings and may be histologically. In Malawi, like in most other developing countries, diagnosis by postmortem and histologically are practically non existent. The causes of maternal deaths in Malawi are thus made through the clinical information as observed when the deceased was sick until she died. In some Central Hospitals like QECH these clinical observations are discussed at maternal deaths audit meetings. A consensus on the immediate cause of death is reached. Through the initiatives of the National Task Force on Safe Motherhood the maternal deaths auditing is being introduced throughout the country by the establishment of committees at Central, District, CHAM Hospitals even at Health centre levels.

Based on the above approaches the various reports and publications have come up with (immediate) causes of maternal deaths as shown on the tables 2 and 3, Figures 1 and 2 that follow. These causes are discussed below alongside with operational factors.

ASSOCIATED CAUSES (OPERATIONAL FACTORS) FOR MATERNAL DEATHS

When a maternal death occurs, the maternal deaths audit committee comes up with immediate cause of death as outlined above. This however is the observation at the end of a "road" which the deceased went through. All the other events which befell the deceased as she "travelled along the road to death" are not normally talked about or given the prominence they deserve. These events along the road to maternal death are the operational factors. If these factors did not exist the death would most probably have not occurred. In the Malawi context these operational factors are listed below on table 4. No death occurs from any cause without these operational factors having a major contributory role to play. Thus no efforts to reduce maternal deaths can fully succeed without addressing to these operational factors. Efforts to reduce maternal deaths therefore must look at immediate causes together with operational factors a one complete package to be addressed. These operational factors apply at:-

1. Family/Community level
2. Formal health care level
3. National level

It can be seen therefore from the immediate causes of death and the operational factors, that in Malawi there are issues that come out as outstanding. Thus for the immediate causes.

1. Genital tract sepsis both puerperal and postabortal are important

2. Haemorrhage mainly postpartum and postabortal

3. Complications of prolonged obstructed labour such as ruptured uterus.

4. Eclampsia as a complication of hypertensive disorder in pregnancy

5. Anaemia and malaria

6. In recent years complications related to HIV/AIDS. This in the case of QECH appears to have climbed the ladder to the top. This trend concerning HIV/AIDS may apply to the whole of Malawi.

   All these immediate causes of maternal deaths are to be found at all levels of health care as illustrated by tables 2,3 and figures 1 and 2.

Regarding OPERATIONAL FACTORS it can be seen that DELAY and LACK OF BLOOD are important contributors to maternal deaths. DELAY can be of three types:-

1. Delay to seek medical care

2. Delay to reach a health facility

3. Delay to receive health care
   (See flow chart for delay)

Delay to seek medical care is a health seeking behaviour and is related to the discussions that take place in the home by all concerned members of the sick pregnant woman. The direction of the discussion is commonly influenced by traditional and customary concepts and beliefs. Sometimes absence of critical family member(s) can protract the whole process. While this is happening labour or the disease process does not take a break. In most of such discussions the concerned pregnant woman does not have a say. She awaits instructions. These instructions may be: stay here at home or go to a traditional birth attendant (TBA) or go to a formal health facility.

Delay to reach a health facility: Reaching the health facility may take a long route via the TBA or traditional healer. This causes further delay. More importantly in Malawi, the delay is due to non functioning or absence of communication system (telephones); or delay, unavailability or absent transport for the patient. Occasionally there is delay by the attendant in deciding to refer the patient.

Delay to receive health care can be caused by shortage of personnel, shortage or lack of supplies or equipment for providing the required service. At Central Hospitals like QECH it is also common to find obstetric emergencies queuing for theatre space for operation, either because there are not enough operating rooms or because of inadequate personnel and/or supplies to spread over to more than one operating room.

To effectively reduce maternal deaths all the above DELAYS have to be addressed.

All these are very crucial in Malawi. As a living example at QECH in 1992 after surveying through the main immediate causes of maternal deaths a decision was made that two major immediate causes of maternal deaths be intervened in order to reduce these deaths. These two immediate causes were Haemorrhage and sepsis, as they together contributed 51% of all causes of maternal deaths. All efforts were made to mobilize the necessary resources and supplies. Intervention was conducted during 1993 and 1994. Analysis of immediate causes and operational factors for maternal deaths was repeated at the end of 1994 as had been done in 1992. The results as are shown in figure 1 which compares 1992 with 1994. It is clear that some intended achievements had been made but far short of what had been hoped.

The major reason for this limited success was that the intervention addressed issues only at the formal health care level - QECH. The intervention was unable to address events at the family/community level neither was it even able to address events at the Health Centre level. Between 1992 and 1994 for example, women who died because of abortion complications came to QECH late. All those who came early survived. This lesson did confirm the need to address immediate causes and operational factors at the different levels as one package.

Additionally concerning operational factors, almost every report in Malawi has mentioned the problems related to:-

1. Communication (telephones) and transport

2. SHORTAGES of human resources, equipment and supplies. Most critical is shortages of nurse/midwives. Without adequate numbers of these trained individuals failures to adequately reduce maternal deaths will persist. Supplies and essential equipment are equally important. These include facilities to sterilize instruments, availability of essential and functional instruments and functional operating spaces/facilities, regular availability of sterile gloves, linen, drugs and blood.

At the National level in Malawi, concerted efforts have been made to address the above problems of communication and shortages. These are overwhelming problems which require added assistance (on top of the National efforts) from elsewhere. Meantime more efforts and projected planning for the future continue to be made.

The information available for Malawi regarding maternal deaths relate mainly at District and Central Hospital levels. Information at Community and even Health Centre levels is either lacking or very limited indeed. It is however a well known experience in Malawi. as elsewhere in Sub-Sahara Africa, that once women enter the Health care system at the Health Centres, problem cases are referred to District and/or Central Hospitals as soon as possible. There are therefore extremely few (insignificant) number of women who die at the Health Centres except in situations where there is protracted delay.

At the community level, Malawi participated in a multicentre study funded by the Commonwealth Regional Health Secretariat for Eastern Central and Southern Africa (based in Arusha - Tanzania). The study looked at RISK FACTORS for maternal deaths from family/community level through to Tertiary or Central Hospitals of formal health care system. The findings on these risk factors in the Region (which includes Malawi) are summarized on the next page. These are important and useful findings for intervention purposes.

A MULTICENTRE STUDY ON MATERNAL MORTALITY IN
Malawi; Lesotho; Uganda; Zambia
SHOWED:

HIGH RISK FOR MATERNAL DEATHS EXISTS IN:

1. AGE: Teenagers (≤ 17 years) and elderly (≥ 35 years).

2. SOCIO-ECONOMIC STATUS: Low socio-economic status, single

3. EDUCATION: No or low education level

4. ABORTION: Previous abortion; age 25-29 years; Parity 1-2. All die mainly from genital tract sepsis

5. MEDICAL COMPLICATIONS: Anaemia increased risk 3X
   HIV/AIDS increased risk 25X
   Chest infections including PTB
   FEVERS including MALARIA

6. UTILISATION OF HEALTH FACILITIES:
   Low level of attending health personnel and facilities e.g. VHW; TBA at Dispensary, Health Centre.

7. CONDITION ON ADMISSION: Critically ill + requiring surgery

8. OBSTRUCTED LABOUR: --> Death especially among teenagers

9. INTRAPARTUM CARE: Poorly monitored labour
   Intrapartum complications

10. FAMILY PLANNING: Low usage
    Short birth intervals

Out of all the above factors, EDUCATION is a key factor in the woman's life with respect to her reproductive health.

THE TYPE OF WOMEN WHO DIED

It is important for intervention purposes to know the type of women who commonly suffer maternal death in terms of their socio-demographic characteristics. Here again there is little published information on this issue. The Demographic Health Survey in Malawi (1992) refers to age-specific maternal deaths both by indirect and direct means of estimation. See attached tables 11.4 and 11.5. The multicentre study on risk factors for maternal deaths referred to before (which included Malawi) deals with this issue at great length.

At QECH some information is available in this respect for maternal deaths during 1994. During that year there were 26390 institutional deliveries in Blantyre district. There were 75 maternal deaths, out of which 66 occurred at QECH. There was one maternal death for every 352 deliveries and 230 deliveries in Blantyre district and QECH respectively.

Of the 66 deaths at QECH 53.1% were youths (those aged 15-24 years) of these 16.7% were teenagers. Only 7.6% were aged 35 years and above. The mean age for all the deaths was 25.2 years.

Out of 59 deaths in whom marital status was recorded 93.2% were married, only 5.1% were single. 64 deaths had the parity recorded. 65.6% were of parity 1 to 3, with 29.7% being para 1. The mean parity for all these deaths was 2.0. Over 27.0% of all the deaths were associated with abortions of the index pregnancies. 48.1% of these maternal deaths left children from the index pregnancies alive. More than 10% of the deaths occurred within 2 hours of admission at QECH, whereas 35.4% died within 48 hours after admission. One arrived dead already.

It is therefore clear from above that the women who died were mostly married, young (youths); of low parity. They thus left behind young husbands, nearly half of whom were then left with live newborn babies. The country lost young women who probably would be future leaders, but also it was left with babies who would have single parents. Abortion claimed more than one quarter of all deaths. This is very high! A study conducted at QECH in 1994 to determine if index pregnancies (aborted or delivered - full term) had been intended and planned; showed that 33.9% were unintended. Some of the abortions among them may have been induced. This underlines contraceptive needs in the Blantyre population. Probably the more than one third deaths which occurred within 48 hours of admission implies DELAY to arrive at the facility.

MATERNAL MORBIDITY IN MALAWI

It is believed that for every single maternal death there are 10 to 15 women who suffer morbidity. Use this approximation to calculate the magnitude of morbidity from the maternal mortality ratios in table 1 one gets table 5. This shows that a lot of women suffer morbidity. If these occur yearly, and they occur in young women in their mid-20s then the country is accumulating these disabled individuals whose socio-economic contribution to society is either minimal or they become dependents themselves.

Maternal morbidity statistics in Malawi are almost non existent. However looking at institutional audit statistics for indications for admissions among pregnant women, where these exist, one may get some approximate ideas about the magnitude and nature of maternal morbidity. Along these lines table 6 shows the nature and magnitude of these morbidity conditions.

This table 6 shows the importance of abortion as a morbidity problem. It is estimated that 40-60% of these abortions may be induced on unwanted/unplanned pregnancies. If incomplete "clean" abortions are not treated effectively promptly they develop more bleeding and sepsis. These complications are well known causes of mortality. This table also shows some of the important causes of maternal mortality - (Figures 1 and 2) being responsible for morbidity as well. These include malaria in pregnancy, anaemia in pregnancy, hypertensive disorder in pregnancy, puerperal sepsis and respiratory tract infections. Other distressful morbidity conditions which clinically are known to occur do not appear in this table because they have low prevalence. However, the distress they cause is so great that they can not be disregarded. These include urogenital fistulae which lead to urinary or faecal incontinence; young women living without the uterus thus without hope of reproducing etc.

Of some current interest concerning maternal morbidity a study was conducted at QECH to determine the influence of HIV/AIDS infection on maternal morbidity. The study was of a case-control design. Tables 7,8,9 show the results of this study during antenatal and intrapartum periods as well as morbidity status before the index pregnancy respectively.

It can be seen that antenatally the morbidity problems that were noted in table 6 also appear in table 7 and that they are significally more among women who are HIV positive. (ODDS RATIO>2). Interestingly during intrapartum and postpartum periods genital sepsis, primary postpartum haemorrhage and retained products of conception appear to be significantly more in women who were HIV+ve than the others.

Malawi like most other Sub-Sahara African countries are rampaged with HIV/AIDS. Pregnant women will continue to suffer these morbidities. Perhaps it may be wise for women to check their HIV status before they embark on pregnancies. Such an approach would certainly reduce morbidity and even mortality. Figures 1 and 2 in this document show clearly how HIV/AIDS is influencing maternal mortality, increasingly being associated with more deaths.

ARE MATERNAL DEATHS IN MALAWI AVOIDABLE?

One only needs to look at the immediate causes and operational factors to say, "yes indeed they are very much avoidable".
The avoidability is at (i) Patient/family level + Community level.
(ii) Formal health care level
(iii) National level.

Table 10 shows the magnitude of avoidability at the family level as well as at the formal health service care level. Over one third of avoidability is at the health service care level. What needs to be done there?

(a) Increase the numbers of appropriately trained and motivated personnel, especially nurses.

(b) Provide health care providers with the essential supplies and equipment which they need to provide needed service efficiently. Provide adequate places where services need to be given.

(c) Make available functioning and reliable communication and transport systems.

All these can be achieved within the current economic status of Malawi provided strict steps are taken to address to the priorities needed to achieve (a) (b) (c) above. In the priorities special attention needs to be given to emergency obstetric services at all levels of health care.

Providers of health care need to have their skills and knowledge updated regularly. Provision to allow for this to happen should be addressed.

The National level needs to seriously address the problems as noted by service providers. At the National level there are both politicians and professionals. They all need to be sensitized by the service providers concerning the identified problems. Such sensitization helps these leaders to have the energy and convincing information when they argue for budgetary adjustments in parliament. It is a matter of how to share the "little cake" which the country can afford to provide.

Looking at the Family and Community level it becomes obvious concerning the difficulties. It is a matter of what influences the health seeking behaviour of communities. At that level the major problem is delay to seek health care. Who in the community suffers this problem more often? Are their confounding factors? In the Malawi context one could entertain possible reasons as being poverty, low socio-economic status, no or low educational levels. However all these are long term issues. For immediate needs the community leaders can be sensitized about issues that concern maternal deaths. The sensitization is best done by political leaders with back up by professionals. Such sensitization hopefully would be followed by concerted efforts to mobilize communities to address their problems of maternal deaths.

Table 2

MATERNAL MORTALITY IN MALAWI: Ref.WHO/MCH/MSM/91.3

STUDY	IMMEDIATE CAUSES		OPERATIONAL FACTORS	
C.BULLOUGH (1986) COMMUNITY BASED	Haemorrhage	24.0%	Delay at home	34%
	Ruptured Uterus	16.0%	Use of herbs	14%
	Obstructed labour	11.0%	Shortage of blood	39%
	Sepsis	9.0%	Medical Staff	28%
	Abortion	3.0%	Nursing staff	24%
			Communication	26%
J.D. CHIPHANGWI 1985 - 86 COMMUNITY BASED	Haemmorrhage	25.0%		
	Obstr/Ruptured ut.	20.0%		
	Abortion	18.0%		
	Sepsis	13.0%		
	Complication of C/Section	8.0%		
	Hypertension	4.0%		
DRIESSEN 1989 TWELVE HOSPITALS	Abortion	18.0%	Deficient Hosp.care	29%
	Sepsis	12.0%	Patients' delay	19%
	Haemorrhage	16.0%	Preg. Contraindicated	5%
	Ruptured uterus	8.0%	Deficient care at H.C.	3%
	Obstructed labour	5.0%	Transfer problems	2%
	Hypertension	3.0%	NO. AVOIDABLE FACTOR	20%
M.E. KELLER(1987) TERTIARY HOSPITAL (Kamuzu Central-Lilongwe)	Anaemia	38.0%	Patient's delay	48%
	Sepsis	27.0%	Medical staff	23%
	Ruptured uterus	23.0%	Lack of blood/donors	34%
	Assoc. with c/section	17.0%	Peripheral unit delay	12%
	Abortion	13.0%	Anaesthesia	5%
	Hypertension	8.0%	Transport problems	3%
			Med. Officer absent	3%

Fig. 1

MATERNAL DEATHS AT Q.E.C.H.

MAIN CAUSES OF MATERNAL DEATHS

1992 = 84.7% of all causes

1994 = 89.3% of all causes

Table 3

MANGOCHI DISTRICT HOSPITAL - 1994

DIRECT CAUSES OF MATERNAL DEATH

CAUSE	NUMBER	PERCENTAGE
* RUPTURED UTERUS	12	31.58
* SEPSIS		
a] PUERPERAL	11	28.9]
b] POSTNATAL	1	2.6] 31.6
* HAEMORRHAGE		
a] ANTEPARTUM	2	5.2]
b] POSTPARTUM	4	10.5] 15.7
* ECLAMPSIA	3	7.9
* ECTOPIC PREGNANCY	2	5.2
* ANAEMIA	1	2.6
SUB TOTAL	36	

INDIRECT CAUSES OF MATERNAL DEATH

* RHEUMATIC HEART DISEASE	1	2.6
* UNEXPLAINED	1	2.6
TOTAL	38	100 %

By Dr. L. Barbane

Table 4

MATERNAL MORTALITY IN MALAWI - *Ref. who/mch/msm/91.3

OPERATIONAL FACTORS

I *AUTHOR: C. BULLOUGH - 1986

OPNL FACTORS:

SHORTAGE OF BLOOD	-	39%
DELAY AT HOME	-	34%
MEDICAL STAFF	-	28%
COMMUNICATION	-	26%
NURSING STAFF	-	24%
USE OF HERBS	-	14%

II *AUTHOR: M E KELLER - 1987 (KCN)

OPNL FACTORS:

PATIENT'S DELAY	-	48%
LACK OF BLOOD	-	34%
MEDICAL STAFF	-	23%
PERIPHERAL UNIT DELAY	-	12%
ANAESTHETIC PROBLEMS	-	5%
TRANSPORT PROBLEMS	-	3%
MED. OFFICER ABSENT	-	3%

III *AUTHOR: DRIESSEN'S (1989)

OPNL FACTORS:

DEFICIENT HOSP. CARE	-	29%
NO AVOIDABLE FACTOR	-	20%
PATIENTS' DELAY	-	19%
PREGNANCY CONTRAINDICATED	-	5%
DEFICIENT CARE AT H.C.	-	3%
TRANSPORT PROBLEMS	-	2%

IV AUTHOR: L A R MTIMAVALYE - 1994 (QECH)

OPNL FACTORS:

DELAY IN STARTING TREATMENT	-	18.7%
PATIENT'S DELAY	-	17.9%
DEALY IN REFERRAL	-	12.2%
DELAY TO ARRIVE AT QECH	-	12.2%
LACK/INADEQUATE BLOOD	-	12.2%
HIV RELATED	-	8.1%
WRONG TREATMENT	-	4.9%
MISCELLANEOUS	-	18.7%

LEVELS OF AVOIDABILITY

NB

1.	AT FAMILY/COMMUNITY LEVEL	- 52.2%
2.	AT REFERRING CENTRE LEVEL	- 13.3%
3.	AT CENTRAL HOSPITAL LEVEL (QECH)	- 34.4%

Fig. 2:

IMMEDIATE CAUSES OF MATERNAL DEATHS: JAN TO JUNE - 1998)

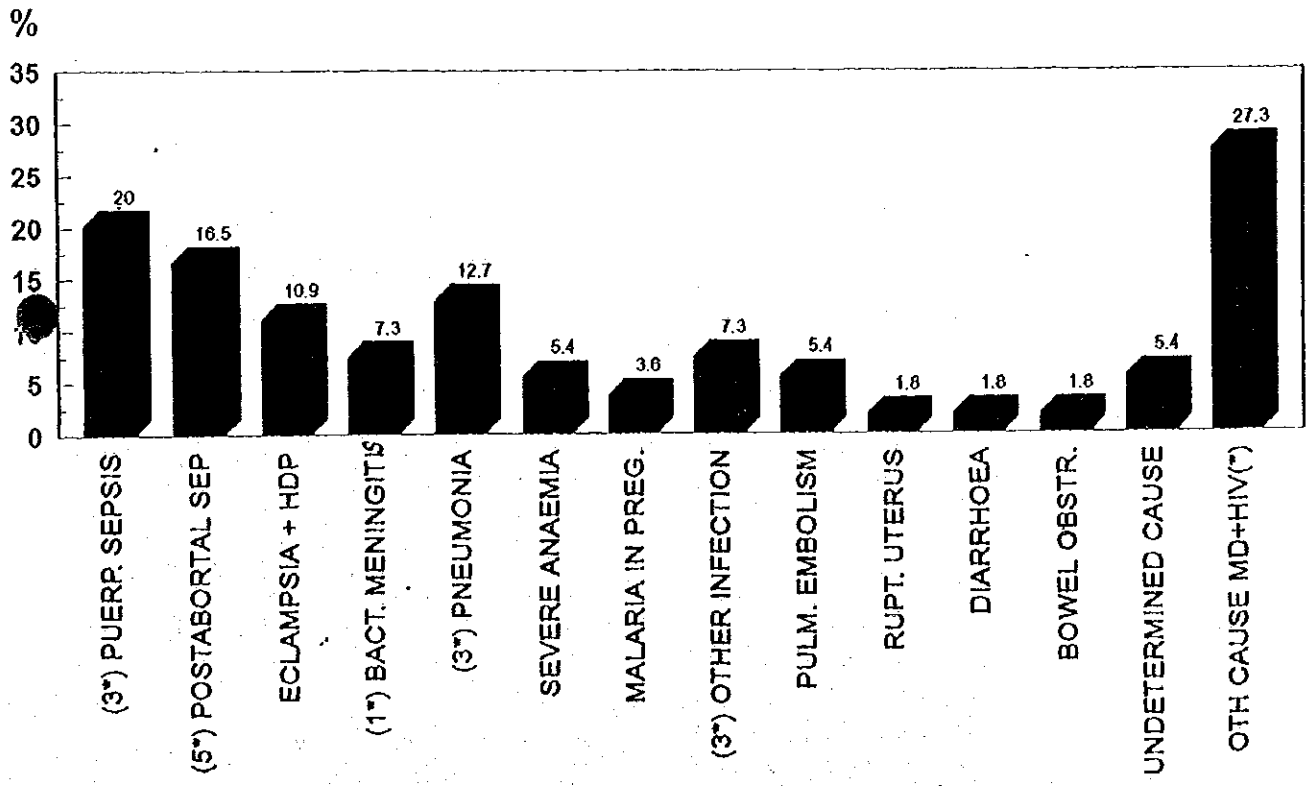
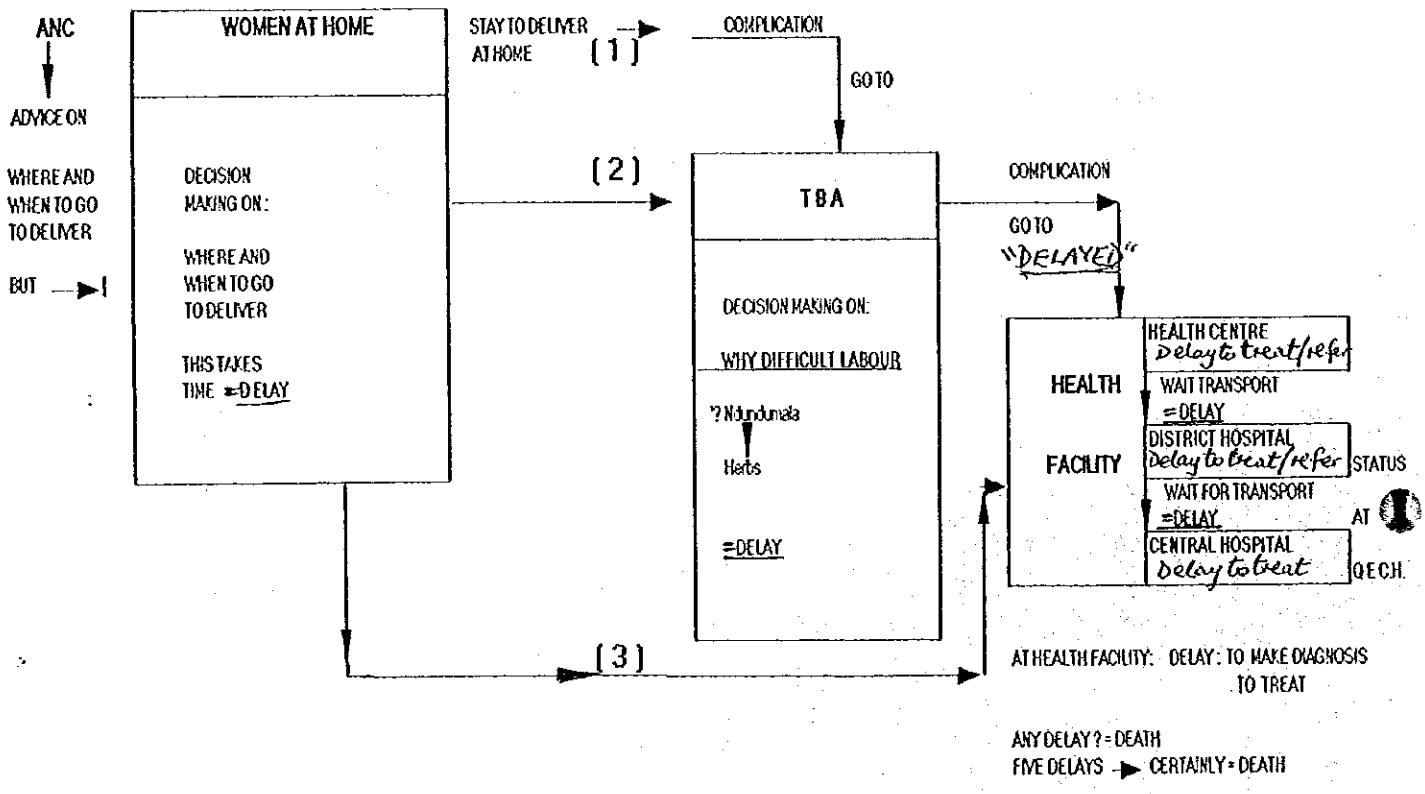


TABLE 5

ESTIMATES OF MATERNAL MORBIDITY IN MALAWI

YEAR	PLACE/FACILITY	MMR PER 100,000 LIVE BIRTHS	MORBIDITY
1977	Southern Malawi [3]	260	2600 - 3900
1989	QECH - Blantyre	476	4760 - 7140
1991	QECH - Blantyre	555	5550 - 8325
1992	National - Malawi	620	6200 - 9300
1994	Mangochi District Hosp.	1452	14520 - 21780
1992	QECH - Blantyre	476	4760 - 7140
1994	QECH - Blantyre	456	4560 - 6840
1998	QECH - Blantyre	786	7860 - 11790

FLOW CHART: "DELAY" AN IMPORTANT FACTOR IN MATERNAL MORTALITY AND (MORBIDITY)



A → B → C

NB: ANC → ANTENATAL CARE
A → FAMILY LEVEL (HOME)
B → TRADITIONAL BIRTH ATTENDANT (COMMUNITY)
C → FORMAL HEALTH CARE FACILITIES.
TBA → TRADITIONAL BIRTH ATTENDANT

TABLE 6

ADMISSIONS FOR MATERNAL MORBIDITY - 1994
AT QECH - BLANTYRE

	TOTALS	%
ABORTIONS Threatened abortion - 1010 Incomplete abortion - clean - 1513 Incomplete abortion - septic - 53 Molar pregnancy - 68 Complete abortion - 10 Missed abortion - 16	2670	75.1
PRETERM and EARLY LABOUR	314	8.8
PREMATURE RUPTURE OF MEMBRANES (PROM)	49	1.4
MALARIA IN PREGNANCY	157	4.4
HYPERTENSIVE DISORDER IN PREGNANCY	82	2.3
ANAEMIA IN PREGNANCY	72	2.0
URINARY TRACT INFECTION	15	0.4
PUERPERAL COMPLICATIONS Puerperal sepsis - 49 Retained products - 21 Secondary PPH - 18 Uterine sub-involution - 5 Convulsions - 5 Puerperal psychosis - 1	99	2.8
CHEST PROBLEMS IN PREGNANCY Pulmonary TB - 9 Pneumonia - 14 Others - 7	30	0.8
DIARRHOEA IN PREGNANCY Blood - 28 Plain - 27	55	1.5
ANTEPARTUM HAEMORRHAGE	4	0.1
MISCELLANEOUS CONDITIONS	72	2.0
TOTAL	3555	

Table 7 MATERNAL MORBIDITY BY HIV-1 SEROSTATUS.

I. ANTENATAL

MORBIDITY PROBLEMS	HIV-1+VE	HIV-1-VE	OR
	Percentage	Percentage	
FEVER	31.4	18.9	2.0
ABNORMAL VAG. DISCHARGE	4.2	1.8	2.4
ANAEMIA	15.4	8.6	2.6
VAGINAL BLEEDING	3.0	1.8	2.3
RESPIRATORY INFECTIONS	10.0	2.6	8.13
DIARRHOEA	12.6	8.4	2.17
GENITAL WARTS & ULCERS	4.5	1.0	7.24
PREMATURE RUPTURE OF MEMBRANES	23.1	7.5	2.7
HYPERTENSION	1.5	0.9	1.04
URINARY TRACT INFECTION	1.9	1.8	1.08

OR = Odds ratio

Table 1

MATERNAL PREVIOUS HEALTH PROBLEMS AND HIV-1 SEROSTATUS

HEALTH PROBLEM	HIV+VE	HIV-1-VE	OR
GENITAL ULCER	9.5	4.5	2.3
ABN. VAG. DISCHARGE	7.3	3.6	2.1
BUBOS	4.2	1.5	2.9
LOW ABDO. PAINS	1.9	1.5	1.3
HERPES ZOSTER	5.0	0.3	19.27
TUBERCULOSIS	1.9	0.3	7.18

OR = Odds Ratio

Table 2 II. INTRAPARTUM AND POSTPARTUM

MORBIDITY PROBLEMS	HIV-1+VE	HIV-1-VE
	%	%
RAISED BP AND ECLAMPSIA	14.3	38.9
RETAINED PRODUCTS OF CONCEPTION	28.6	16.7
PPH (Primary)	9.5	2.8
GENITAL SEPSIS	9.5	0.0
PROLONGED LABOUR	14.3	11.1
GENITAL TEARS	9.5	16.7

HOSPITAL STAY

HIV-1 SEROPOSITIVE Mean 3.6 days

HIV-1 SEROPOSITIVE Mean 1.5 days

Table 10

AVOIDABILITY OF MATERNAL DEATHS IN ESCA REGION

	AT FAMILY/COMMUNITY LEVEL	AT HEALTH SERVICE LEVEL
I. MALAWI:		
QECH	52.2%	REFERRENCE CENTRE 13.3% CENTRAL HOSPITAL 34.4%
SIX HOSPITALS	24.0%	34.0%
II. TANZANIA:	26.2%	67.8%
III. UGANDA:	17.9%	23%
IV. ZAMBIA:	28%	52%
V. ZIMBABWE:	47%	53%

Table 11.4

Indirect estimates of maternal mortality

Estimates of maternal mortality using the indirect method. Malawi 1992

Age	Number of respondents (a)	Number[a] of sisters 15+ (b)	Maternal deaths (c)	Adjustment factor (d)	Sister units of risk exposure (e)=(b)*(d)	Lifetime risk of maternal death (f)=(c)/(e)
15-19	1082	2304	16	.107	246	.066
20-24	944	2010	20	.206	414	.048
25-29	777	1654	26	.343	567	.045
30-34	656	1380	20	.503	694	.029
35-39	537	1245	20	.664	826	.024
40-44	510	1015	21	.802	814	.026
45-49	342	714	23	.900	643	.035
Total (15-49)	4849	8975	145		4205	.035
TFR 1978-82	8.0					
MMR	435					

TFR = Total fertility rate
MMR = Maternal mortality ratio (1 - [1 - Lifetime risk]$^{1/TFR}$)* 100,000, where TFR represents the total fertility rate 10-14 years preceding the survey
[a]Adjusted for the age distribution of respondents' sisters (see Graham et al., 1989).

Table 11.5

Direct estimates of maternal mortality

Direct estimates of maternal mortality based on the survivorship of sisters of survey respondents, Malawi 1986-92

Age	Deaths	Exposure years	Rate (000)
15-19	13	10241	1.271
20-24	5	10890	0.472
25-29	15	10217	1.485
30-34	14	7932	1.822
35-39	12	6148	1.947
40-44	3	4233	0.827
45-49	8	2299	3.565
Total (15-49)	71	51960	1.362
GFR			.220
MMR[1]			620

GFR = General fertility rate
MMR = Maternal mortality ratio
[1]Per 100,000 live births; calculated as maternal mortality rate divided by general fertility rate

Appendix 2. 11 In-Depth Interviews with Shopkeepers

SKS No. ( )

In-Depth Interview with Shopkeepers

Hello. I am part of a team that is making a study in this area. We are spnsored by the Japanese organisation, and the result of this study will be used to improve health conditions in Malawi. I would like to ask you some questions about the medicines you sell. Your answers will be confidential and you will not be identified in any way. Can I have your cooperation with this, please?

Date: (mm/dd/yyyy) (/ / 1999), Name of district: ( )
Name of village: ( ), Team number: ( )
Type of shop (check one): Grocery ( ), Kiosk ( ), Other ( ):_____

Q1. Are you the owner of this (grocery, kiosk, canteen)?
1. yes 2. no

Q2. Which other people work here to sell things when you are not here?

_____

Q3. What medicines do you usually sell, and approximately how many of each did you sell last month?

	medicines	type of package (strip, tablet, syrup)	instructions (English, Chewa)	number
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Q4. Where do you get each of these medicines from? (name of distributor or wholesaler if appropriate)

_____

Q5. How do you store drugs?

_____

Q6. How do you know if any drugs have expired, and then what do you do with expired medicine?

_____

Q7. Compared to the other things you sell, do you earn a lot of money from the medicines?
1. yes 2. no 3. don't know

Q8. What medicines would you sell and what advice if any do you give to people who come and say they or a family member is sick?

1) If someone has a child with a fever:

_____

2) If someone has a child with diarrhoea:

_____

3) If someone has a child with a cough for several days:

_____

4) If someone has stomach pains:

_____

Q9. Did you know that sometimes people buy the wrong medicines for their sickness?
1. yes 2. didn't know
- If any, make comment: _____

SKS No. ( )

Q10. Did you know that sometimes people take the wrong amounts of roght medicine for their sickness?

1. yes 2. didn't know

- If any, make comment: _____

Q11. Did you know that sometimes people do not need any medicine at all for their sickness?

1. yes 2. didn't know

- If any, make comment: _____

Q12.Would you be interested in learning more about the correct use of these medicines?

1. yes 2. no 3. don't know

Q13. If yes, why?

_____

Q14. If no, why not?

_____

Q15. The Malawi Government has a plan to give more free medicines to some of the poorest people, such as - fansidar/novidar and aspirin/paracetamol. The government can buy these medicines very cheaply. If they were given for free to some people, would this affect your sales of these items much?

1. yes 2. no 3. don't know

- If any, make comment: _____

Q16. What type of assistance could make you better drug sellers and be more useful to people in the community?

_____

_____

Observation only

Any IEC materials, posters, calendars, etc. about drugs or health:

_____

Appendix 2. 11 In-Depth Interviews with Shopkeepers

SKS No. ( )

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Date: (mm/dd/yyyy) (/ / 1999), Name of district: ( )
Name of village: ( ), Team number: ( )
Type of shop (check one): Grocery ( ), Kiosk ( ), Other ( ):_____

Q1. Are you the owner of this (grocery, kiosk, canteen)?
1. yes 2. no

Q2. Which other people work here to sell things when you are not here?

_____

Q3. What medicines do you usually sell, and approximately how many of each did you sell last month?

	medicines	type of package (strip, tablet, syrup)	instructions (English, Chewa)	number
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Q4. Where do you get each of these medicines from? (name of distributor or wholesaler if appropriate)

_____

Q5. How do you store drugs?

_____

Q6. How do you know if any drugs have expired, and then what do you do with expired medicine?

_____

Q7. Compared to the other things you sell, do you earn a lot of money from the medicines?
1. yes 2. no 3. don't know

Q8. What medicines would you sell and what advice if any do you give to people who come and say they or a family member is sick?

1) If someone has a child with a fever:

_____

2) If someone has a child with diarrhoea:

_____

3) If someone has a child with a cough for several days:

_____

4) If someone has stomach pains:

_____

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- If any, make comment: _____

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- If any, make comment: _____

Q11. Did you know that sometimes people do not need any medicine at all for their sickness?

1. yes 2. didn't know

- If any, make comment: _____

Q12.Would you be interested in learning more about the correct use of these medicines?

1. yes 2. no 3. don't know

Q13. If yes, why?

_____

Q14. If no, why not?

_____

Q15. The Malawi Government has a plan to give more free medicines to some of the poorest people, such as - fansidar/novidar and aspirin/paracetamol. The government can buy these medicines very cheaply. If they were given for free to some people, would this affect your sales of these items much?

1. yes 2. no 3. don't know

- If any, make comment: _____

Q16. What type of assistance could make you better drug sellers and be more useful to people in the community?

_____

_____

Observation only

Any IEC materials, posters, calendars, etc. about drugs or health:

_____

Appendix 2. 12 Simulated Patient Recording Form

SKS No. ( )

Simulated Patient Recording Form

Date: (mm/dd/yyyy) (/ / 1999), Name of district: ( )
Name of village: ( ), Team number: ( )
Type of shop (check one): Grocery ( ), Kiosk ( ), Other ( ):_____
Which patient: Patient 1 (fever/malaria) ( ), Patient 2 (ARI/pneumonia) ( )

Q1. How were you greeted by the drug seller? (Check only one)
1. polite/respectful 2. indifferent/not interested 3. abusive

Q2. Did the drug seller ask you any questions about the child's illness?
1. yes 2. no (go to Q4) 3. if any, make comment:_____

Q3. If yes, what questions did the drug seller ask?

Q4. Did the drug seller give you anything other than drug to treat the child?
1. yes 2. no 3. if any, make comment:_____

Q5. If yes, what were you given?

Q6. Were all drugs labeled with the name of the medication?
1. yes 2. no 3. if any, make comment:_____

Q7. Were all drugs labeled with the dosage instructions?
1. yes 2. no 3. if any, make comment:_____

Q8. Were all drugs given in appropriate packaging?
1. yes 2. no 3. if any, make comment:_____

Q9. How were the drugs packaged?

Q10. Did the drug seller ask you to repeat the instructions about how to give the medication?
1. yes 2. no 3. if any, make comment:_____

Q11. For each drug given, complete the table below:

Drug name	Type (tablet, syrup, other)	Dose			Total quantity given	Total price
		Amount	Times per day	No. of days		

Q12. Did the drug seller give you any advise or explanation for care of the child at home?
1. yes 2. no 3. if any, make comment:_____

Q13. If yes, what advice or explanation did the drug seller give you?

Patient 1: Fever/malaria

Description: Male child of 3 years old.

Symptoms: Fever for 2 days.

General health: Since illness, eating less than normal and ill tempered. No medication.

Current health:
- Vomiting sometimes.
- Diarrhoea but not watery.
- No blood in the stool.
- No other symptoms.

Patient 2: Acute respiratory infection/pneumonia

Description: Male child of 11 months old.

Symptoms: Cough and fever for 2 days.

General health: Fast breathing with retraction. No medication.

Current health:
- No wheezing.
- No stridor.
- No cyanosis.
- Can drink.

Appendix 2. 12 Simulated Patient Recording Form

SKS No. ( )

Simulated Patient Recording Form

Date: (mm/dd/yyyy) (/ / 1999), Name of district: ( )
Name of village: ( ), Team number: ( )
Type of shop (check one): Grocery ( ), Kiosk ( ), Other ( ): _____
Which patient: Patient 1 (fever/malaria) ( ), Patient 2 (ARI/pneumonia) ( )

Q1. How were you greeted by the drug seller? (Check only one)
1. polite/respectful 2. indifferent/not interested 3. abusive

Q2. Did the drug seller ask you any questions about the child's illness?
1. yes 2. no (go to Q4) 3. if any, make comment: _____

Q3. If yes, what questions did the drug seller ask?

Q4. Did the drug seller give you anything other than drug to treat the child?
1. yes 2. no 3. if any, make comment: _____

Q5. If yes, what were you given?

Q6. Were all drugs labeled with the name of the medication?
1. yes 2. no 3. if any, make comment: _____

Q7. Were all drugs labeled with the dosage instructions?
1. yes 2. no 3. if any, make comment: _____

Q8. Were all drugs given in appropriate packaging?
1. yes 2. no 3. if any, make comment: _____

Q9. How were the drugs packaged?

Q10. Did the drug seller ask you to repeat the instructions about how to give the medication?
1. yes 2. no 3. if any, make comment: _____

Q11. For each drug given, complete the table below:

Drug name	Type (tablet, syrup, other)	Dose			Total quantity given	Total price
		Amount	Times per day	No. of days		

Q12. Did the drug seller give you any advise or explanation for care of the child at home?
1. yes 2. no 3. if any, make comment: _____

Q13. If yes, what advice or explanation did the drug seller give you?

Simulated Patient Case Histories

Patient 1: Fever/malaria

Description: Male child of 3 years old.

Symptoms: Fever for 2 days.

General health: Since illness, eating less than normal and ill tempered. No medication.

Current health:
- Vomiting sometimes.
- Diarrhoea but not watery.
- No blood in the stool.
- No other symptoms.

Patient 2: Acute respiratory infection/pneumonia

Description: Male child of 11 months old.

Symptoms: Cough and fever for 2 days.

General health: Fast breathing with retraction. No medication.

Current health:
- No wheezing.
- No stridor.
- No cyanosis.
- Can drink.

Appendix 2.13: Topic Guide for Focus Group Discussions

Topics for the FGDs: with Village Women

Maternal Mortality

- Reasons for not delivering at the health facilities

There are women who go to antenatal care but don't go to the health facilities to deliver the babies. We would like to know why.

What does make the women go to the health facilities for delivery?
- Factors at health facilities: quality of the service, types of the service, interaction with health workers, etc.
- Factors at home: husbands, parents-in-law, availability of the guardians, etc.
- Values
- Transportation

If the waiting room exists, do women still need their guardians to come along?

- Women's perception of antenatal care
- How do women perceive antenatal care? What do they think about it? If they go, what do they expect?

- Women's perception of delivery at the health facilities

Growth Monitoring Program (GMP)

- Possible future intervention
- How would the mothers perceive GMP/GMVs if the GMVs visit each household to weigh the under-five children?
- Other ideas to make the GMP more effective

Kitchen Garden/Community Garden programs

- Possible future intervention
- How the programs will work/have worked? What are the key factors for the success of the program?

Informal Drug Seller

- If a small (under-five) child in the household falls ill and they can't take the child to the health center, what do they usually do if they need medicine?
- If they buy medicine from the grocery because of the small (under-five) child's illness, do they ask the seller for advice, or do they usually ask someone else?
- What do they think about medicine peddler: (e.g., the quality of their medicines, their prices, the advice they give?)

Topics for the FGDs: with Village Volunteers

Maternal Mortality

- Reasons for not delivering at the health facilities

There are women who go to antenatal care but don't go to the health facilities to deliver the babies. We would like to know why.

What does make the women go to the health facilities for delivery?
- Factors at health facilities: quality of the service, types of the service, interaction with health workers, etc.
- Factors at home: husbands, parents-in-law, availability of the guardians, etc.
- Values
- Transportation

If the waiting room exists, do women still need their guardians to come along?

Growth Monitoring Program (GMP)

- Possible future intervention
- How would the mothers perceive GMP/GMVs if the GMVs visit each household to weigh the under-five children?
- Other ideas to make the GMP more effective

Kitchen Garden/Community Garden programs

- Possible future intervention
- How the programs will work/have worked? What are the key factors for the success of the program?

Informal Drug Seller

- If a small (under-five) child in the household falls ill and the parents can't take the child to the health center, what do they usually do if they need medicine?
- If villagers buy medicine from the grocery because of the small (under-five) child's illness, do they ask the seller for advice, or do they usually ask someone else?
- What do they think about medicine peddler: (e.g., the quality of their medicines, their prices, the advice they give?)

Note
Please pay special attention to the gender issues regarding their specific roles as village volunteers. Do they have different roles just because (or mainly because) of the gender? Advantage and disadvantage of being a man/woman to do particular activities (such as visiting household as growth monitoring volunteers).

Topics for the (mini-)FGDs and In-depth Interviews: with Health Facility Workers

Maternal Mortality

- Village women's reasons for not delivering at the health facilities
- How do the health facility workers perceive the reasons for the women not to go antenatal care but don't go to the health facilities to deliver the babies. We would like to know why.

- Possible future intervention
- We would like to know what they think if there is a waiting room for the pregnant women to spend time before delivery. What would make the waiting room be used?

- Health facility workers' perceptions of the pregnant women
- How do the workers at the health facilities perceive the pregnant women and their families, especially those who are waiting at the health facilities?

- Health facility workers' perceptions of the training they received.
- What was useful for them (knowledge, skills, etc.), and how does it help?