RHRC
Consortium

Emergency Obstetric Care:

Critical Need among Populations Affected by Conflict

Reproductive Health Response in Conflict Consortium

March 2004

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The Reproductive Health for Refugees Consortium (RHRC) was founded in 1995 with the purpose of responding to the reproductive health needs of refugee and IDP populations worldwide. The Reproductive Health for Refugees Consortium has officially changed its name to the Reproductive Health Response in Conflict Consortium (RHRC Consortium) to reflect the work of the Consortium, whose programs provide services to a variety of conflict-affected populations, not just refugees. The new name more accurately describes the Consortium's concern for all populations affected by conflict.

The members of the RHRC Consortium are the American Refugee Committee; CARE; Heilbrunn Department of Population and Family Health, Columbia University; International Rescue Committee; JSI Research and Training Institute; Marie Stopes International; and Women's Commission for Refugee Women and Children.

Mission Statement

The RHRC Consortium is dedicated to the promotion of reproductive health among all persons affected by armed conflict. The RHRC Consortium promotes sustained access to comprehensive, high quality reproductive health programs in emergencies and advocates for policies that support the reproductive health of persons affected by armed conflict.

The RHRC Consortium believes all persons have a right to good quality reproductive health care and that reproductive health programs must promote rights, respect and responsibility for all. To this end, the RHRC Consortium adheres to three fundamental principles:

• using participatory approaches to involve the community at all stages of programming;

• encouraging reproductive health programming during all phases of emergencies, from the initial crisis to reconstruction and development; and

• employing a rights-based approach in all of its work, as articulated in the 1994 International Conference on Population and Development Programme of Action.

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CONTENTS

Acronyms i

Acknowledgments ii

Foreword iii

Executive Summary 1

I. Introduction 3
- Context 5
- Methodology 5

II. Assessment Findings 6
- Common Problems Identified 9
- Summary of Planned Interventions 11

III. Conclusions and Recommendations 11

IV. Annexes 13
- Annex A: Individual Country Assessment Reports
  - Bosnia and Herzegovina 13
  - Kenya 14
  - Liberia 15
  - Pakistan 17
  - Sierra Leone 18
  - Southern Sudan 19
  - Tanzania 20
  - Thailand 22
  - Uganda 24
- Annex B: Instruments, Supplies and Medicines Required for EmOC
  - 1. Delivery Pack 26
  - 2. Perineal, Vaginal, Cervical Repair Pack 26
  - 3. Vacuum Extraction, Forceps Delivery 26
  - 4. Obstetric Laparotomy, Cesarean Section Pack 27
  - 5. Instruments for Craniotomy 27
  - 6. Uterine Evacuation Set 28
  - 7. Anesthesia Equipment and Neonatal Resuscitation Pack 29
  - 8. Essential Drugs for Comprehensive EmOC 30

ACRONYMS

AIDS	Acquired immune deficiency syndrome
AMDD	Averting maternal death and disability
ANC	Antenatal care
ARC	American Refugee Committee
BCC	Behavior change communication
EmOC	Emergency obstetric care
FEMME	Foundations for Enhanced Management of Maternal Emergencies
GOP	Government of Pakistan
HIV	Human immunodeficiency virus
ICPD	International Conference on Population and Development
IDP	Internally displaced people
IEC	Information, education, communication
IRC	International Rescue Committee
IV	Intravenous
MOH	Ministry of health
MSK	Marie Stopes Kenya
MSSSL	Marie Stopes Society Sierra Leone
MVA	Manual vacuum aspiration
NGO	Nongovernmental organization
PAC	Postabortion care
PHCC	Primary health care center
PMTCT	Prevention of maternal to child transmission
PRB	Population Reference Bureau
RH	Reproductive health
RHRC Consortium	Reproductive Health Response in Conflict Consortium
TBA	Traditional birth attendant
UN	United Nations
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
WHO	World Health Organization

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Photographs by Janet Meyers.

FOREWORD

This report documents the availability of emergency obstetric care services in selected sites in nine countries. The determination of availability of services was made through needs assessments conducted as part of the Reproductive Health Response in Conflict (RHRC) Consortium Emergency Obstetric Care (EmOC) Project. With the exception of three assessments conducted in 2002 for the Pakistan and Uganda projects, the assessments were conducted in 2001.

The purpose of this report is to provide organizations, donors and governments with summary information on the status of EmOC in the geographic locations covered by the assessments. In addition, this information may be used to guide assessments used to design and implement future EmOC programs. It may also be used as a tool to advocate for better quality life-saving EmOC for conflict-affected women and girls.

A second report documenting findings from a review of the 12 projects implemented over the past two to three years will be available later in 2004. This second report will highlight creative and innovative interventions, strategies and lessons learned to guide future EmOC programming.

EXECUTIVE SUMMARY

As a part of Columbia University's Averting Maternal Death and Disability (AMDD) Program, the Reproductive Health Response in Conflict (RHRC) Consortium implemented 12 pilot emergency obstetric care (EmOC) projects in the following nine countries: Bosnia, Kenya, Liberia, Pakistan, Sierra Leone, Southern Sudan, Tanzania, Thailand and Uganda. Prior to designing the individual project interventions, the RHRC Consortium EmOC technical advisor and field staff conducted assessments to document EmOC activities in those conflict-affected settings and design pilot projects to address critical needs. The assessments were conducted in 2001, except for those in Pakistan and Uganda, which were completed in 2002.

The goal of the project was to avert maternal death and disability among approximately 40,500 women from conflict-affected populations and the purpose was to establish or improve Basic and Comprehensive EmOC services at health centers and hospitals responding to the emergency obstetric needs of refugees and others of reproductive age living within and around the refugee communities. Objectives of the project were to:

1. advocate to nongovernmental organizations (NGOs), policy makers, donors and others to improve refugee women's access to emergency obstetric services;
2. upgrade, rehabilitate and construct health center and/or hospital facilities to enhance EmOC services;
3. ensure adequate obstetric equipment and supplies and health staff skilled in the use and maintenance of equipment and supply management systems;
4. establish and review EmOC protocols to ensure the provision, monitoring and evaluation of Basic EmOC at the health center level;
5. ensure quality Comprehensive EmOC is available at the district and provincial hospital level to include all activities at the health center level, plus surgery such as cesarean sections and safe blood transfusions; and
6. provide relevant training and other technical assistance, including monitoring and evaluation guidance, to health workers on Basic and Comprehensive EmOC service delivery.

FINDINGS FROM THE ASSESSMENTS

At the *health facility level,* the structures, equipment, supplies and medicines were generally insufficient. While some medicines and equipment were available, certain ones required to provide critical evidence-based interventions were not. A consistent problem in conflict and post-conflict settings is the lack of qualified staff to provide services at existing health facilities. This poses significant problems related to EmOC. Many people are unable to access health facility services due to communication and transportation difficulties. Furthermore, EmOC standards, guidelines and protocols were unavailable at most of the facilities visited.

Community attitudes were not comprehensively assessed; however, anecdotally and based upon surveys conducted by UNICEF in Sierra Leone and American Refugee Committee (ARC) in Pakistan, there are significant community-level barriers preventing women from delivering at health facilities. These obstacles differ between countries, ethnic groups and communities, but some common barriers include: 1) fear of being cared for by a male health worker; 2) fear of receiving care from someone of a different ethnicity; 3) language differences; 4) inability to pay for transportation; 5) inability to pay for services if there is a fee involved; 6) fear of not having appropriate clothing to wear; and 7) preference of decision makers in the family such as mothers-in-law and husbands for home delivery with a traditional birth attendant (TBA) since that is what they know.

Cost Recovery and Sustainability of health care services, including EmOC, continue to be very challenging and unattainable in many of the

settings assessed.

Based upon the assessment findings, the following major interventions were planned for each project:

1. Upgrade the physical facilities;
2. Provide necessary equipment, supplies and medicines;
3. Improve data collection and record keeping;
4. Enhance staff capacity through training, recruitment and placement;
5. Augment the means of communication and transportation;
6. Improve community outreach through information, education and communication (IEC);
7. Support cost-sharing mechanisms.

Conclusions and Recommendations

Over the past 10 years, efforts to provide quality reproductive health (RH) services to populations affected by conflict have gathered momentum, leading to numerous initiatives to address safe motherhood and reduce maternal mortality. Significant progress has been made in these initiatives and many lessons have been learned regarding effective strategies and interventions; however, based upon the assessment findings, a large gap remains between what is recommended and the reality in the field. Recommendations for improving life-saving EmOC include the following:

Policy and Rights Level

- Integrate EmOC into the initial assessments conducted by all humanitarian assistance providers and ensure the assessments include the referral hospital's capacity to provide Comprehensive EmOC services.
- Ensure conflict-affected women's access to Comprehensive EmOC services by supporting existing referral facilities, or establishing services, as needed.
- Increase the number of fully functioning Basic EmOC facilities in humanitarian relief settings to stabilize patients before referral and to comply with the minimum standard outlined in the UN Process Indicators. (See p. 6.)
- Increase the availability and improve the quality of postabortion care (PAC): include provision of contraceptive services to address the critical unmet need for family planning as reflected in the high numbers of unsafe abortions in many conflict-affected settings.
- Ensure supplies and drugs for EmOC are consistently available in conflict settings.
- Integrate services for the prevention of maternal-to-child transmission (PMTCT) of HIV within EmOC.
- Collect data on the six UN Process Indicators in all humanitarian relief programs providing EmOC to measure progress in reducing maternal mortality and morbidity, to support advocacy efforts and to leverage resources.
- Strengthen safe motherhood and EmOC services and improve their sustainability through collaboration with relevant national and international development initiatives.
- Implement a human rights-based approach that builds upon national laws and policies to provide maternity services and to advocate for change in laws and policies that obstruct access to maternity services.[1]
- Identify and widely disseminate existing national standard protocols for EmOC and develop standard protocols based upon WHO, UNFPA, UNICEF and the World Bank's *Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors*, where they do not exist.
- Widely disseminate EmOC assessment, design, monitoring and evaluation tools to international organizations and ministries of health.
- Include funds to cover the additional costs of EmOC in grants made to humanitarian relief programs.

Staffing Level

- Ensure that all staff providing EmOC services have copies of EmOC standards and protocols at their facilities and sufficient training in conducting life-saving procedures.
- Implement maternal death and "near miss" investigations to identify specific root causes of maternal deaths, provide insight into which

human rights might be applied to advance safe motherhood,[2] promote community and health care provider buy-in and improve obstetric care.

- Increase efforts to identify, train and support qualified health care workers to provide EmOC.
- Integrate evidence-based interventions such as: 1) magnesium sulfate to control convulsions in the treatment of pre-eclampsia and eclampsia; 2) intramuscular injection of oxytocic drugs for active management of the third stage of labor to prevent postpartum bleeding; and 3) manual vacuum aspiration for removal of retained products following complications from miscarriage or unsafe abortion.[3]
- Consider training mid-level providers to perform cesarean sections and to provide anesthesia where there is a shortage of physicians, surgeons and anesthetists.
- Support a team approach to EmOC training, for example, training teams of physicians, anesthetists, nurses, midwives and other mid-level providers in EmOC.

Community Level

- Better define the role of TBAs as an integral part of EmOC services in consultation with communities, TBAs, health workers and Ministry of Health (MOH) partners.
- Conduct qualitative research on safe motherhood practices in the communities.
- Involve communities in EmOC programming to obtain their perspective, support and buy-in and to increase the demand for services (rights-based approach).
- Educate family decision makers, such as mothers-in-law and husbands, about the importance of EmOC.

I. INTRODUCTION

Despite major improvements in the reproductive health (RH) of substantial numbers of people, millions of individuals continue to suffer from poor reproductive health. Moreover, with only a few exceptions, maternal mortality appears to have remained relatively unchanged since 1990.[4] Although much has been learned during the past decade about the causes of maternal death, there is little evidence of significant progress towards reducing maternal mortality. Every year, over half a million women continue to lose their lives during pregnancy, childbirth and postpartum. Women in Sub-Saharan Africa continue to face a 1 in 13 chance of dying from pregnancy and childbirth, while the risk for women in the industrialized world is only 1 in 4,085.[5]

The World Summit for Children in 1990 introduced a target to reduce maternal mortality in developing countries by half between 1990 and 2000. The target was reaffirmed at the International Conference on Population and Development (ICPD) in Cairo in 1994 and again in 1995, at the Fourth World Summit on Women in Beijing. In the five-year review of progress in implementing the goals of the Population and Development Conference (ICPD+5), the United Nations (UN) General Assembly endorsed a number of actions regarding maternal mortality, including access to quality obstetric care and well-trained staff to attend deliveries."[6]

Maternal mortality is challenging to measure and reliable estimates are difficult to find, therefore making it difficult to assess progress towards the achievement of the goal articulated at the World Summit for Children in 1990. WHO estimates for worldwide maternal mortality in 1990 were 585,000 while for 2000 it was 529,000.[7,8] In efforts to develop other ways of monitoring progress in reducing maternal mortality, process indicators have been developed by WHO, UNFPA and UNICEF over the past few years.

In the past, efforts to reduce maternal mortality focused on predicting and preventing obstetric complications through antenatal care and community awareness-raising. While these interventions

Signal functions provided in EmOC facilities

BASIC EMOC

1. Administer parenteral antibiotics
2. Administer parenteral oxytocic drugs
3. Administer parenteral anticonvulsants for pre-eclampsia and eclampsia
4. Perform manual removal of placenta
5. Perform removal of retained products
6. Perform assisted vaginal delivery

COMPREHENSIVE EMOC

All of those included in Basic EmOC, plus

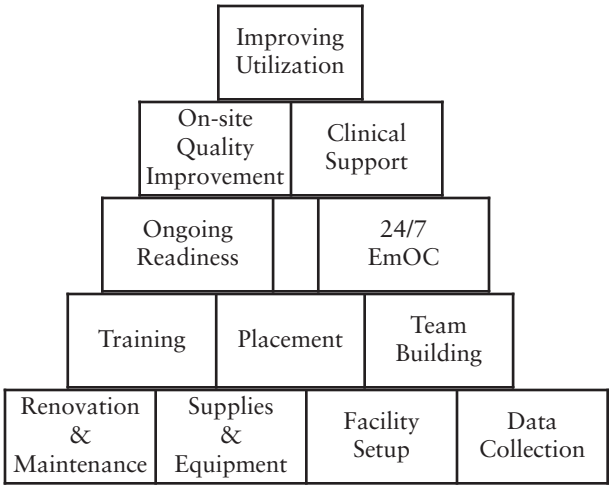
7. Perform surgery (Caesarean section)
8. Perform blood transfusion

are important, they alone will not reduce maternal mortality. Data from developed countries demonstrated that the development of effective treatments for obstetric complications, such as antibiotics and blood transfusions, were the key to reducing maternal mortality in those countries. Consequently, one of the ways to reduce maternal mortality is to improve access, utilization and quality of services for the treatment of complications during pregnancy and childbirth.[9]

As a part of providing effective services, the causes of maternal death must be known. A common framework to assess these causes is known as the "three delays" model. It describes the first delay as the decision to seek care, the second delay is in reaching the health care facility and the third delay is in receiving appropriate good quality treatment and care once at the facility.[10]

The Averting Maternal Death and Disability (AMDD) Program was established at the Columbia University Mailman School of Public Health in 1999 with funding from the Bill and Melinda Gates Foundation. The AMDD program works through partnerships with UN organizations, NGOs, governments and communities. AMDD takes a three-pronged approach: medical, management and human rights. This translates into working to improve the availability of the signal functions of Basic and Comprehensive EmOC services as described in the box.[11] The focus of activities is on improving availability, enhancing quality, increasing utilization, promoting human rights, engaging professional associations and treating disabilities.[12] The diagram below depicts the steps ideally undertaken to accomplish these activities, although it is recognized that conditions do not always make such sequential interventions possible.

AMDD Model for Implementation of Emergency Obstetric Care



With financial and technical support from the AMDD program, the Reproductive Health Response in Conflict (RHRC) Consortium implemented 12 EmOC projects among conflict-affected populations in the following countries: Bosnia and Herzegovina, Kenya, Liberia, Pakistan, Sierra Leone, Southern Sudan, Tanzania, Thailand and Uganda. The aim of these pilot projects is to raise the profile of the critical importance of EmOC and ultimately facilitate the standardization of good quality EmOC services into humanitarian response programs. The integration of EmOC as a part of humanitarian response programs is reflected in the new revised Sphere manual with a brief description of the signal functions of Basic and Comprehensive EmOC.[13]

CONTEXT

The RHRC Consortium projects are in a wide variety of settings, ranging from sites in active war and conflict zones to those in relative security. Some populations have resided in camps for as long as 20 years while others have been more recently displaced. Program beneficiaries are refugees, internally displaced people, local populations and host country government representatives affected by conflict and /or post-conflict returnees.

The variation in conflict-affected settings is evident when comparing the populations of Bosnia and Herzegovina and Southern Sudan. In Bosnia and Herzegovina, prior to disruption by war and systematic targeting of health facilities, a relatively strong medical infrastructure with a high level of obstetric care was in place; the predominantly urban population was highly educated and had extensive experience with hospital-based medicine, even where facilities were inadequate and procedures largely out of date. At the other extreme are refugees living in rural areas, remote from hospitals and clinics, as in Southern Sudan, exposed to extreme hardships and little access to care. A 50-year war has repeatedly moved through Kajo Keji County, with only relative stability over the past seven years. Low literacy rates, little exposure to educated practitioners and minimal access to EmOC entailing many hours of travel by foot, leaves people to rely almost entirely on TBAs, unskilled in caring for obstetric emergencies.

Many of the pre-conflict circumstances of the refugees served by the facilities assessed are rural or semi-rural with limited prior knowledge of, or access to, sophisticated obstetric care services. However, in some countries, such as Bosnia, Liberia and Sierra Leone, the assessment areas include both urban and rural populations, where knowledge of obstetric care services may be higher. The facilities assessed serve both refugees in camps, such as Afghans in Pakistan and Sudanese in Uganda, and non-camp populations, including returnees and internally displaced persons (IDPs) in Liberia, Sierra Leone and Southern Sudan. Some of the facilities serve primarily the local population but also provide services to refugees in camps, as is the case for Kibondo Hospital, located in far western Tanzania. The Mae Tao Clinic and Mae Sot Hospital on the Thai/Burma border serve Burmese refugees and non-refugees, in and out of camps, as well as local Thais. Nearly one-fourth of the annual deliveries at the Eastleigh Hospital in Nairobi are to urban refugees.

Summary of Country Projects and Populations Served (in addition to host population)

Country	Refugee / IDP Population
Bosnia and Herzegovina	Local population - Bosnian Muslims, Bosnian Serbs, Bosnian Croats & Yugoslavs
Kenya	Mostly Somali and Ethiopian, followed by Ugandan, Sudanese, Congolese, Burundian and Rwandan refugees
Liberia	Returnees
Pakistan	Majority Pashtun, and Uzbek and Tajik refugees
Sierra Leone	Returnees
Southern Sudan	Sudanese IDPs and returnees
Tanzania	Burundian refugees
Thailand	Burmese (Karen and Burmese Muslims) refugees
Uganda	Sudanese refugees

As demonstrated by the table above, there is great diversity in the target populations with vast cultural, social and linguistic differences that would merit further study as to their implications for effective project interventions.

METHODOLOGY

Assessments were conducted at each of the project sites before designing the implementation strategy. Assessment tools included: 1) *The Guideline for Health Facilities Assessment* produced by the Foundations for Enhanced Management of Maternal Emergencies (FEMME) Project; 2) *The Design and Evaluation of Maternal Mortality Programs* by Columbia University; and 3) WHO assessment tools.

The assessments were primarily conducted in 2001 and considered all services required to achieve the minimum standards of the following six UN Process Indicators.

UN Process Indicators and Minimum Acceptable Levels	
Indicator	**Minimum acceptable level**
Amount of essential care - **Basic** EmOC facilities - **Comprehensive** EmOC facilities	For every **500,000 population,** there should be: - **At least four Basic** EmOC facilities - **At least one Comprehensive** EmOC facility
Geographical distribution of EmOC facilities	Minimum level for amount of EmOC services is met in subnational (e.g., provincial) areas
Proportion of all births in Basic and Comprehensive EmOC facilities	**At least 15% of all births** in the population take place in either Basic or Comprehensive EmOC facilities
Met need for EmOC: - Proportion of women estimated to have complications who are treated in EmOC facilities	**At least 100%** of women estimated to have obstetric complications are treated in EmOC facilities
Caesarean sections as a percentage of all births	As a proportion of all births in the population, Caesarean sections account for **not less than 5% nor more than 15%**
Case fatality rate	The case fatality rate among women with obstetric complications in EmOC facilities is **less than 1%**
UNICEF, WHO, UNFPA, Guidelines for Monitoring the Availability and Use of Obstetric Services, 1997	

To measure the indicator, *Met Need for EmOC,* the capacity of health providers and frequency with which they provide each of the signal functions for Basic and Comprehensive EmOC as described in the introduction must be monitored. One of the greatest challenges in conducting the assessments was the lack of essential data to measure the UN Process Indicators. This was addressed by collecting available data to identify critical EmOC needs, thus making the data rarely comparable between the projects. Sources of data included health facility registers, national and local annual reports, national strategic plans, assessments conducted by other international organizations, relevant reports, interviews with key informants and site visits to the facilities. Some EmOC projects were located in highly insecure areas, for example, Liberia and Uganda, necessitating repeat assessments and delays in project implementation.

II. ASSESSMENT FINDINGS

The population catchment areas of the assessed facilities ranged from 40,000 to 250,000. Few facilities provided all components of Basic EmOC services, while even fewer provided Comprehensive EmOC services. For individual assessment findings by country, refer to Annex A. The following table summarizes the signal functions available at the facilities during the assessment period. The first six functions are required to have a functioning Basic EmOC facility and all eight must be available in a functioning Comprehensive EmOC facility. Due to lack of sufficient data, there is a gap in information for a number of the facilities.

Summary of facilities and available signal functions

Country	6 – 8 Signal Functions							
	Administer parenteral antibiotics	Administer parenteral oxytocic drugs	Administer parenteral anti-convulsants	Perform manual removal of placenta	Perform removal of retained products	Perform assisted vaginal delivery	Perform surgery (C-section)	Perform blood transfusion
Bosnia 3 hospitals	shortages	shortages	shortages +	*	* -	*	*	*
Kenya 1 maternity nursing home	*	*	* +	*	*	*	*	*
Liberia Nimba County (1 hospital & 2 clinics)	Lack detailed data but it was evident that the signal functions were not consistently available at any of the facilities due to a lack of supplies, medicines, functioning equipment and trained staff							
Grand Gedeh, Sinoe, Montserrado Counties (3 hospitals and 6 clinics)	Lack detailed data but it was evident that the signal functions were not consistently available at any of the facilities due to a lack of supplies, medicines, functioning equipment and trained staff							
Pakistan Hangu**	*	*	* -	*	* -	*		
Thal Clinic	Non-existent facility at time of the assessment							
Mohammad Khail RH Unit	*	*	*	*	* -			
Sierra Leone Kissy Hospital	*	*	* +	*	*	*	*	*
Southern Sudan 2 health clinics	shortages		shortages +	*				
Tanzania	shortages	shortages	shortages +	*	* -	*	sometimes	sometimes
Thailand Mae Tao Clinic	shortages	shortages	shortages +	*	* -			
Mae Sot Hospital	*	*	*	*	*	*	*	*
Uganda Kiryandongo Hospital	shortages	shortages	shortages +	*	* -	*	*	sometimes
Panyadoli Health Center	*		* +	*	*			

*Existing service
** Data for the Hangu Clinic was included as these services are planned for the new Thal Clinic
+ No magnesium sulfate
- No manual vacuum aspiration (MVA) kits

In general, Basic EmOC services were only partially available, while Comprehensive EmOC services tended to be more completely available at the hospitals assessed; however, the quality and consistent availability of services were a serious problem in both the Basic and Comprehensive EmOC facilities.

To measure the UN Process Indicators, the crude birth rate of a population must be known. The following table summarizes some of the data for the countries where the assessments were conducted.

Summary of Population and Key Characteristics

Country/Site	Population served	Crude birth rate per 1,000	Total number of deliveries in one year*	% of births attended by skilled personnel**	Maternal mortality ratio (MMR)***	Infant mortality rate (IMR)****
Bosnia and Herzegovina	Bihac, Gorazde, Mostar Cantons – 392,000	10	B - 2,000 (2000) G - 350 M - 710	97	31/100,000	14
Kenya	Eastleigh Neighborhood - 246,420	28.5 (PRB 2001 estimate)	1,354 (2000)	44	1,000/100,000 580/100,000 (DHS, 1998)	57.99 (PRB 2001 estimate) 69
Liberia	Sinoe, Grand Gedeh, Monserrado Counties - 1,216,318	49	-	-	760/100,000	147
	Part of Nimba County - 116,861		-			
Pakistan	Baluchistan (3 refugee camps) - 90,000	37 (Pakistan) 42	-	18 (Pakistan) - (Afghanistan)	500/100,000 (Pakistan) 1,700/100,000	87 (Pakistan) 162
	Thal area - 99,820	(Afghanistan)	-		(Afghanistan)	(Afghanistan)
Sierra Leone	Freetown Section - 500,000	47	-	-	2,000/100,000	177
Southern Sudan	Kajo Keji County – 150,000	39 (Sudan)	-	-		77 (Sudan)
Tanzania	Kibondo District and five camps - 405,000	40	1,410 (2000)	36	1,500/100,000 529/100,000 (DHS 1996)	100
Thailand	ARC - three camps (Umpiem Mai, Nu Po and Ban Don Yang)- 34,906	13	-	-	44/100,000 (Burma)	20 (Thailand) 83 (Burma)
	Mae Tao Clinic - 250,000		414 (2000)			
Uganda	198,000 (Kiryadongo and Refugee Settlement in Masindi District)	47 (Uganda Bureau of Statistics)	Kiryandongo Hospital - 704 (7/01-7/02)	38	880/100,000 505/100,000 (DHS 2001)	86

* World Population Data Sheet, Population Reference Bureau (PRB) 2003
**Women of Our World, PRB 2002
***Maternal Mortality in 2000: Estimates Developed by WHO, UNICEF, and UNFPA
****State of the World Population 2003, UNFPA

As stated in the beginning of the report, maternal mortality data is difficult to collect as is the crude birth rate and percent attendance by skilled personnel. This difficulty is due to a variety of reasons, including under-reporting. The above data is only meant to provide some context; however, in cases where the rates are exceptionally low, that particular indicator is most likely under-reported.

COMMON PROBLEMS IDENTIFIED

The needs assessments revealed a chronic lack of attention to EmOC among conflict-affected populations with a lack of coordination among key service providers from the camp/rural level to the national level.

1. Health Facility

Facility structures, equipment, medicine and supplies were generally inadequate and insufficient. At most sites, major infrastructure problems were reported, as well as chronic shortages of drugs, medical supplies and equipment. At many of the sites obstetric facilities exist within the primary health care centers/clinics and hospitals. The condition of most facilities was poor: inadequate or malfunctioning water systems; unsanitary conditions; deteriorating buildings; and overcrowding in some facilities.

Few hospitals provide safe blood transfusions or conduct cesarean sections in a timely manner. Drugs and equipment needed to provide Basic EmOC were only sporadically available or completely unavailable. Out of 26 facilities, only two had the drug magnesium sulfate in stock and five had manual vacuum aspiration (MVA) kits. Many facilities did not have the capacity to perform assisted deliveries due to a lack of equipment, medicines and supplies.

Qualified staff for these facilities was another critical shortage. Due to the protracted conflict in many of the sites, professional training institutions close or significantly reduce their operations and for a variety of reasons educated professionals flee the country leading to a serious shortage of qualified and trained staff. The lack of staff was particularly apparent in facilities serving IDPs in Liberia and Southern Sudan, and in the services available to the Burmese and Afghan refugee populations found,respectively, in Thailand and Pakistan. In Liberia, for example, there were only 43 physicians for the entire country, and the hospital in Nimba County had only one doctor who, as a county health officer, spent most of his time in Monrovia on administrative tasks. In another hospital in Liberia, a surgical theater had been refurbished; however, no physician staffed the hospital. Recruiting and retaining qualified and experienced physicians and nurses was a serious problem, particularly where facilities are located in remote and/or dangerous areas (Liberia, Pakistan, Sierra Leone, Southern Sudan, Tanzania and Uganda).

Due to the shortage of qualified staff, many facilities were partially to fully staffed by paraprofessionals such as TBAs, community health workers and medics with varying levels of training. With few exceptions, professional and paraprofessional health staff were described as having poor motivation and morale due to reasons such as isolation, heavy workloads, low salaries, lack of opportunities for continuing education, lack of supervision, difficult work environments with shortages of medicines, equipment and supplies. Staff motivating factors identified were: access to continuing education and complementary benefits such as housing and financial remuneration.

Access to EmOC services was another constraint. Transportation and communication are major challenges in both rural and urban areas. In some cases there is a shortage of vehicles for timely transportation, and in many areas, large portions of the population are inaccessible by road during part or all of the year. The Mae Tao Clinic in Thailand received many Burmese women and girls from within Burma who risked a dangerous border crossing because of a lack of life-saving EmOC services in Burma. The need to purchase or repair ambulances was identified in most settings. Another significant impediment to conflict-affected women's access to EmOC was the lack of reliable electricity at many facilities.

EmOC Standards, Guidelines and Protocols were unavailable at most of the assessed facilities. The staff repeatedly requested technical reference materials. In some countries, the ministry of health was either developing protocols or had just released them. For example, Uganda's MOH issued "Essential Maternal and Neonatal Care Clinical Guidelines for Uganda" in mid-2001 and the MOH in Kenya and Tanzania were in the process of developing them. Along the Thai/Burma border,

Shoklo Malaria Research Unit had published a guide for health workers, "Obstetric Emergencies," in 1999; however, the documents were not readily available at the assessed facilities and many times staff appeared unaware of existing guidelines. Related to the standards, health workers frequently did not practice evidence-based interventions.

2. Community Level

In sites where community assessments were conducted, there was a low level of community awareness about the safe motherhood services available at the health facilities. In Sierra Leone, Marie Stopes Society Sierra Leone's (MSSSL) hospital provides Comprehensive EmOC; however, a community survey reported that 35 percent of the people interviewed did not know about the center or the services it offered. Similarly at Mohamed Khail Camp in Pakistan, an RH survey conducted by the American Refugee Committee (ARC) revealed that 45 percent of the women interviewed were unaware of the availability of antenatal care at the health facility.

Yet, it is also common that more women attend antenatal care clinics than deliver at the health facilities. In Sierra Leone, for example, a UNICEF study reports that a larger percentage of women sought skilled personnel for antenatal care (68 percent) than for birth (46 percent). TBAs provided antenatal care for 14 percent of the mothers, but attended 38 percent of the births nationwide. In many sites, TBAs were somewhat integrated with services at the health facility, but the strength of that collaboration was unclear.

Although community perceptions were not consistently assessed, it is understood that women and men go to TBAs in their communities because that is the way it has always been done. In addition, for economic and cultural reasons, women prefer to deliver at home in their communities. Moreover, husbands and mothers-in-law, as major decision-makers for the family, tell women to deliver at home with a TBA. For economic reasons as well, women frequently wish to deliver at home to avoid costs related to transport and health services, and to care for the rest of their family. Another finding was that some TBAs perform traditional procedures that are harmful to the mother and the baby. These attitudes have a significant impact on efforts to reduce maternal mortality as pregnant women and those caring for them may not recognize or be willing to heed danger signs quickly enough to refer women to appropriate care in time to save the woman's life or prevent long-term disability.

3. Cost Recovery/ Sustainability

In early emergency situations where health care services are available, they are often free for conflict-affected populations and in protracted conflicts this is often the case as well. In Pakistan, Southern Sudan, Thailand and Uganda, services provided at the NGO-supported facilities were either free or available for a nominal fee. Unfortunately facilities frequently are unable to provide consistent services due to their dependency upon funding from the government and/or international organizations. Clearly, there is a need to plan for the sustainability of these life-saving services.

In 1986, MSSSL introduced a fixed fee for service. In Tanzania, cost-sharing schemes were attempted at the district hospital but were insufficient to cover costs. Marie Stopes Kenya charges a fee for services but absorbs the costs for users unable to pay, making it a challenge to maintain its services. In Pakistan, the national health system is set up to charge a nominal fee for normal deliveries and Basic EmOC services; however, the services are often inadequate while private facilities are mushrooming and charging fees that can be prohibitively high, especially for conflict-affected populations whose economic resources are limited. In efforts to work with the private sector, the government of Pakistan (GOP) has opened the government facilities for providers to use as a private clinic during certain times, but these services can be too costly for the refugees. In summary, none of the facilities assessed could sustain themselves only through collecting fees for services.

In Bosnia and Herzegovina, there is national health insurance for everyone registered in Republika Srpska and the Federation of Bosnia and Herzegovina; however, the appropriate equipment, supplies and medicines are frequently lacking at the facilities. Similar to Pakistan, the private sector is growing and the health providers often refer clients to private clinics where the supplies are available but at much higher costs.

Costs to the pregnant woman and relative who accompanies her include not only direct payment for services, but also the costs of transportation, and time away from work and responsibilities in

their homes. In order to determine reasonable rates, a financial analysis of the beneficiaries' ability to pay must consider all aspects of associated costs as the user defines them.

SUMMARY OF PLANNED INTERVENTIONS

As shown previously, the model used for implementation of EmOC assumes a building block structure (page 4), at the base of which are adequate facilities, equipment, supplies and data collection; above that are training and team building, on which one can build on-going readiness and 24-hour services, seven days a week. These all lead to improved utilization. Based upon the assessments, various combinations of the following seven interventions comprised the core of activities selected for the individual pilot projects:

1. Upgrade the physical facilities.
2. Provide necessary equipment, supplies and medicines.
3. Improve data collection and record keeping.
4. Enhance staff capacity through training, recruitment and placement.
5. Augment the means of communication and transportation.
6. Improve community outreach through information, education and communication (IEC) and behavior change communication (BCC) strategies.
7. Support cost-sharing mechanisms.

III. CONCLUSIONS AND RECOMMENDATIONS

Over the past 10 years, efforts to provide quality reproductive health services to populations affected by conflict have gathered momentum, leading to numerous initiatives to address safe motherhood and reduce maternal mortality. Significant progress has been made in these initiatives and many lessons have been learned regarding effective strategies and interventions; however, based upon the assessment findings, a large gap remains between what is recommended and the reality in the field. Recommendations for improving life-saving EmOC include the following:

POLICY AND RIGHTS LEVEL

- Integrate EmOC into the initial assessments conducted by all humanitarian assistance providers and ensure the assessments include the referral hospital's capacity to provide Comprehensive EmOC services.
- Ensure conflict-affected women's access to Comprehensive EmOC services by supporting existing referral facilities, or establishing services, as needed.
- Increase the number of fully functioning Basic EmOC facilities in humanitarian relief settings to stabilize patients before referral and to comply with the minimum standard outlined in the UN Process Indicators.
- Increase the availability and improve the quality of postabortion care (PAC): include provision of contraceptive services to address the critical unmet need for family planning as reflected in the high numbers of unsafe abortions in many conflict-affected settings.
- Ensure supplies and drugs for EmOC are consistently available in conflict settings.
- Integrate services for the prevention of maternal-to-child transmission (PMTCT) of HIV within EmOC.
- Collect data on the six UN Process Indicators in all humanitarian relief programs providing EmOC to measure progress in reducing maternal mortality and morbidity, to support advocacy efforts and to leverage resources.
- Strengthen safe motherhood and EmOC services and improve their sustainability through

collaboration with relevant national and international development initiatives.

- Implement a human rights-based approach that builds upon national laws and policies to provide maternity services and to advocate for change in laws and policies that obstruct access to maternity services.[14]
- Identify and widely disseminate existing national standard protocols for EmOC and develop standard protocols based upon WHO, UNFPA, UNICEF and the World Bank's *Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors,* where they do not exist.
- Widely disseminate EmOC assessment, design, monitoring and evaluation tools to international organizations and ministries of health.
- Include funds to cover the additional costs of EmOC in grants made to humanitarian relief programs.

STAFFING LEVEL

- Ensure that all staff providing EmOC services have copies of EmOC standards and protocols at their facilities and sufficient training in conducting life-saving procedures.
- Implement maternal death and "near miss" investigations to identify specific root causes of maternal deaths, provide insight into which human rights might be applied to advance safe motherhood,[15] promote community and health care provider buy-in and improve obstetric care.
- Increase efforts to identify, train and support qualified health care workers to provide EmOC.
- Integrate evidence-based interventions, such as: 1) magnesium sulfate to control convulsions in the treatment of pre-eclampsia and eclampsia; 2) intramuscular injection of oxytocic drugs for active management of the third stage of labor to prevent postpartum bleeding; and 3) manual vacuum aspiration for removal of retained products following complications from miscarriage or unsafe abortion.[16]
- Consider training mid-level providers to perform cesarean sections and to provide anesthesia where there is a shortage of physicians, surgeons and anesthetists.
- Support a team approach to EmOC training, for example, training teams of physicians, anesthetists, nurses, midwives and other mid-level providers in EmOC.

COMMUNITY LEVEL

- Better define the role of the TBAs as an integral part of EmOC services in consultation with communities, TBAs, health workers and Ministry of Health partners.
- Conduct qualitative research on safe motherhood practices in the communities.
- Involve communities in EmOC programming to obtain their perspective, support and buy-in and to increase the demand for services (rights-based approach).
- Educate family decision makers, such as mothers-in-law and husbands, about the importance of EmOC.

IV. ANNEXES

ANNEX A: Individual Country Assessment Reports

BOSNIA AND HERZEGOVINA

During the war from 1992 to 1995, all health facilities in Bosnia and Herzegovina were systematically targeted for destruction as a way of demoralizing and threatening the lives of civilians, resulting in the damage of over 40 percent of all health facilities. In collaboration with the International Rescue Committee (IRC), an assessment was carried out in 2001.

PROBLEMS IDENTIFIED

- There is a shortage of medicines, medical supplies and equipment.
- There is a lack of continuing education for hospital staff in new procedures and techniques.
- There is a lack of manual vacuum aspiration (MVA) kits in the country and trained staff to perform the service.
- Postabortion care counseling on family planning is lacking.
- Established EmOC protocols for staff do not exist.

PLANNED INTERVENTIONS

The three government referral hospitals of Bihac, Gorazde and Mostar were identified for the following interventions:

- Provide equipment* such as vacuum extractors, complete delivery sets, perineal/vaginal/cervical repair packs, MVA kits and delivery beds to each hospital.
- Provide one complete surgical set for cesarean sections, one anesthesia machine and one newborn resuscitation station.
- Purchase drugs* and contraceptives and establish a revolving fund with the MOH to maintain these supplies.
- Hire a contractor to make structural changes in the operating room at Bihac Hospital to provide space for a newborn resuscitation station and heating in the neonatal department.
- Collaborate with Ipas to provide training for obstetricians, gynecologists, general physicians, midwives and nurses on postabortion care, including use of MVA and infection prevention.

- Contract Ipas to continue with technical assistance after the training sessions including on-the-job training.
- Train hospital administrators to assure that systems are in place to support good quality comprehensive postabortion care.

** Refer to Annex B for a detailed listing of items required for each of the sets and packs.*

- Translate postabortion care training materials into Serbo-Croatian (Bosnian).
- Improve postpartum family planning counseling.
- Develop and implement EmOC data collection.
- Establish a case review system for maternal deaths.
- Develop protocols for the management of maternal and neonatal complications.
- Provide refresher courses for health staff on life-saving skills and interpersonal counseling skills.

EXPECTED PROJECT DATES

- November 1, 2001 to June 30, 2003

PROJECT BUDGET

- 173,607 USD

KENYA

Marie Stopes Kenya (MSK) opened a maternity facility in 1990 in response to the lack of emergency services available in the urban slum area of Eastleigh in Nairobi. The population of Eastleigh neighborhood is estimated at 246,420 and there are approximately 98,568 internally displaced persons (IDP) or refugees living in Nairobi. In 2000, 28.5 percent of the health facility's clients were refugees. The maternity facility provides Comprehensive EmOC services, prenatal and postpartum care, normal delivery, treatment for obstetric complications and cesarean sections, and conducts other assisted deliveries. In collaboration with MSK, an EmOC assessment was conducted in early 2001.

PROBLEMS IDENTIFIED

- Based upon facility statistics and estimates of numbers of refugees residing in Eastleigh Clinic's population catchment area, the use of services by refugees is poor.

PLANNED INTERVENTIONS

- Recruit and train culturally and linguistically appropriate service providers.
- Train health workers in both Basic and Comprehensive EmOC.
- Provide equipment, medicines and essential supplies to replenish old equipment and supplement existing supplies.*
- Purchase an additional ambulance to provide transport at night for emergency obstetric cases in addition to other emergency cases.
- Develop appropriate information, education and communication (IEC) materials in Somali and Sudanese languages.
- Employ and mobilize community health educators who are able to speak the languages spoken by the refugee population.
- Extend, renovate and reorganize the reception area and the outpatient section to facilitate one-way client flow and improve service delivery efficiency.

** Refer to Annex B for a detailed listing of items required for each of the sets and packs.*

- Relocate the laboratory within the reception area to make it more accessible to clients, provide a confidential and safe environment, and allow space for the addition of a blood bank when needed.
- Provide a computer to improve medical records system delivery, prepare training materials and compile monthly data collection.

EXPECTED PROJECT DATES

- September 1, 2001 to August 30, 2003

PROJECT BUDGET

- 137,540 USD

LIBERIA

Liberia has suffered from years of civil conflict, decay of government systems and erosion of societal infrastructure. The leading causes of maternal mortality in Liberia are septic induced abortions, postpartum infections, bleeding during and after delivery, eclampsia and lack of blood for transfusions.

GRAND GEDEH, SINOE AND MONSERRADO COUNTIES

In May 2001, assessments were made in collaboration with the American Refugee Committee (ARC) of three hospitals in Liberia: John F. Kennedy Memorial Hospital, Zwedru Hospital and Greenville Hospital.

PROBLEMS IDENTIFIED

- There is little to no transportation or communication was available for emergencies due to poor infrastructure, thereby increasing delays in women's accessing care.
- There is no electricity at night due to expensive operating costs of the large hospital generators.
- Basic medical supplies such as gauze, IV fluids and syringes are lacking. Gloves were washed and reused. Essential equipment was found to be out of date or not functioning at all.
- There are delays in providing urgent blood transfusions due to shortages in laboratory test kits for HIV/AIDS, hepatitis and syphilis.
- Manual vacuum aspiration (MVA) kits are lacking in the whole country although MVA training had been conducted by UNFPA one-and-a-half years prior to the assessment.
- There is inadequate staffing stemming from difficulties in recruiting and retaining staff, especially in rural areas, due to low salaries, delayed salary payments, poor working conditions and lack of incentives. Of only 43 doctors in the country, 13 worked in rural areas and the government employed only nine of them.
- There is inadequate training and in-service education for health workers.
- Monitoring and supervision of services is poor.
- Essential protocols, guidelines and skilled health workers are lacking.
- Harmful traditional practices such as taking herbs orally to increase contractions during labor are widespread.

PLANNED INTERVENTIONS

To address the major problems identified, the

following interventions were planned at the three hospitals and six clinics:

- Provide specific equipment such as MVA kits, delivery sets, delivery beds, gloves, stethoscopes and blood transfusion kits.*
- Provide three electric generators for each of the operating theaters.
- Hire four trainers (one doctor and three midwives) to provide on-the-job training and establish EmOC clinical guidelines and standards for care in the three counties.
- Provide essential supplies to the laboratories.*
- Upgrade the six health clinics to the level of Basic EmOC facilities and the three hospitals to Comprehensive EmOC facilities pending permission from the MOH. This will require accessing appropriate medicines from the national drug supply and procurement of essential equipment and supplies.
- Provide refresher training to health providers on EmOC and family planning.
- Provide two motorcycles at the two most distant clinics to facilitate consistent drug supplies and for use in emergency referrals.
- Train TBAs in early identification and referral of complications, provide them with necessary supplies and provide regular supervision.

EXPECTED PROJECT DATES

- February 1, 2001 to January 30, 2003

PROJECT BUDGET

- 99,827 USD

NIMBA COUNTY

PROBLEMS IDENTIFIED

In collaboration with the International Rescue Committee (IRC), the assessment was conducted at Sanniquellie Hospital. Problems identified in this assessment were similar to those found in the counties were ARC conducted its assessment (see previous page).

PLANNED INTERVENTIONS

- Upgrade the hospital and two clinics to provide Comprehensive and Basic EmOC, respectively, in collaboration with the MOH.
- Improve transportation by working through existing community savings schemes and by providing matching funds to the community saving schemes to cover transport costs for obstetric emergencies.
- Provide essential equipment to the three facilities.*
- Employ full-time on-the-job trainers, including one doctor, one nurse/midwife and one anesthetist.
- Supply the laboratory with needed supplies and test kits for blood transfusions.
- Train health workers in EmOC and family planning.
- Provide a motorcycle and codan radio to facilitate timely transport for obstetric emergencies for the most distant health clinic.
- Train TBAs in early identification and referral of complications, provide them with necessary supplies and provide regular supervision.

PROJECT DURATION

- July 1, 2001 to June 30, 2002

PROJECT BUDGET

- 91,150 USD

** Refer to Annex B for a detailed listing of items required for each of the sets and packs.*

PAKISTAN

Pakistan has been host to approximately 3 million refugees for over two decades. There are many refugees residing in camps as well as in urban and rural areas.

Baluchistan

ARC is implementing safe motherhood activities for Afghan refugees and the surrounding host population in Baluchistan Province, Pakistan. Specifically it is working in Muhammad Khail refugee camp, home to approximately 40,000 mostly new caseload refugees, located approximately 90 kilometers from Quetta.

PROBLEMS IDENTIFIED

ARC conducted a reproductive health rapid assessment in December 2002 and identified the following problems:

- There is a lack of knowledge about reproductive health in general.
- Women are commonly excluded from decision-making.
- Community members are unable to identify danger signs in pregnancy and childbirth.
- Many harmful traditional practices exist.
- Women prefer to deliver at home and are attended to by TBAs.
- Health care services are poor quality due to lack of trained personnel.
- There is a lack of essential, basic equipment.

PLANNED INTERVENTIONS

With existing funds ARC supported the RH unit operations; the emphasis of their planned activities was on community mobilization to increase appropriate utilization of EmOC services.

- Provide an RH package* of services complementary to the primary health care services provided by the Project Directorate of Health (PDH) within two basic health units in three refugee camps.
- Increase community awareness of STIs/HIV/AIDS, involving adolescents and men/boys where appropriate.

PROJECT DURATION

- August, 2002 to July, 2003

PROJECT BUDGET

- 36,000 USD

Northwest Frontier Province

IRC began working in this area to respond to the needs of the massive influx of Afghan refugees in 1980. Their health programs serve 120,000 Afghan refugees in 12 camps situated between Hangu and Thal towns, approximately 60 km apart. In addition to the refugees, many members of the host community also come for services.

PROBLEMS IDENTIFIED

In 1996, expanding upon the maternal child health services, IRC established a Basic EmOC facility. Since the population to be served around Thal town, including five refugee camps, is 99,820, it was determined that this facility was insufficient to serve this population based upon the UN Process Indicator minimum standard of one Basic EmOC for 50,000 people.[17] Although there are many private maternity clinics in Thal

** RH package includes antenatal care, delivery care, components of Basic EmOC, postpartum care and training of health care providers in the management of obstetric emergencies.*

town, the fees are prohibitive for most refugees. In addition, the local government facility does not have the capacity to provide Basic EmOC services. The health committee members requested a second facility during an RH survey conducted in 2000

Although there is international pressure for the refugees to return to Afghanistan, it is felt this will not happen quickly because there is very little to no infrastructure left in many communities in Afghanistan.

PLANNED INTERVENTIONS

- Establish a Basic EmOC facility by renovating an appropriate facility, purchasing necessary equipment, supplies and medicines.
- Hire staff and train them in EmOC.
- Manage basic obstetric complications in the EmOC facility.
- Establish a referral system with a facility providing Comprehensive EmOC.
- Provide health education as part of postpartum care including child spacing.

PROJECT DURATION

- July 1 to December 31, 2003

PROJECT BUDGET

- 117,450 USD

SIERRA LEONE

Sierra Leone has been subject to years of internal conflict and cross-border attacks leading to massive internal population movements and displacement to neighboring countries. In May 1999, the conflict ended with a cease fire followed by a peace agreement in June. An estimated 100,000 civilians, including children, have been mutilated, countless women and girls raped, and thousands of lives have been lost.

PROBLEMS IDENTIFIED

According to a UNICEF multi-indicator cluster survey in November 2000, 68 percent of women see a skilled provider for antenatal care while only 46 percent deliver with a skilled attendant. The gap is filled by TBAs who provide antenatal care to 14 percent of mothers and attend to 38 percent of deliveries nationwide. In general, there is a lack of senior medical staff and salaries are very low and erratic resulting in a shortage of staff at many district government hospitals.

PLANNED INTERVENTIONS

In 2001, an assessment with Marie Stopes Society Sierra Leone (MSSSL) of Kissy Maternity Hospital identified the following interventions to build their

capacity to provide quality Comprehensive EmOC services. The following activities were planned:

- Provide an ambulance for emergency obstetric cases.
- Provide the hospital with supplemental funds to care for those unable to pay for the services.
- Provide training in EmOC for MOH and NGO staff.
- Create a blood bank to be provisioned by the MOH Central Blood Bank and support the blood bank with essential supplies.
- Raise community awareness about EmOC, produce health education materials and liaise with the community health educators.
- Train and support TBAs to improve the referral system for obstetric emergencies.
- Develop micro-credit projects such as the production and sale of "clean delivery kits" for pregnant women in collaboration with ARC.
- Train at least two nurses in anesthesia through the MOH/UNFPA/WHO project.

PROJECT DURATION

- August 1, 2001 to June 30, 2003

PROJECT BUDGET

- 132,365 US

SOUTHERN SUDAN

"Liberation is better than peace" Southern Sudanese proverb[18]

Since gaining independence in 1956, Sudan has been embroiled in civil war for all but ten years (1972 – 1982). ARC has been providing primary health care services in two internally displaced (IDP) camps as well as to the surrounding population of Kajo Keji County since 1994. This part of Kajo Keji County has experienced relative stability over the past four years.

PROBLEMS IDENTIFIED

There is one hospital in Kajo Keji County, operated by Médecins Sans Frontières (MSF) Switzerland, capable of providing EmOC. There are no Basic EmOC facilities. Traditionally women deliver at home and this was evident by the low numbers of women coming to deliver at both the hospitals and primary health care centers (PHCC). Critical problems identified in this assessment were the following:

- The county is large with very few roads and these are sometimes impassable during the rainy season, forcing people to walk up to seven hours in order to reach the hospital.
- There is a general lack of awareness regarding the danger signs during pregnancy, delivery and postpartum, causing delays in seeking assistance.
- There is a shortage of qualified providers at the PHCCs who are able to respond to basic obstetric emergencies.
- There is a lack of appropriate training sites due

to the number of deliveries occurring in the facilities; for example, Kajo Keji Hospital had 92 deliveries recorded for the previous year.

PLANNED INTERVENTIONS

In order to upgrade two PHCCs to provide Basic EmOC, the following interventions were planned:

- Increase family and community awareness on potential complications related to pregnancy and childbirth and when to seek assistance.
- Raise awareness and increase community participation in early referral of complicated delivery cases through organizing workshops and seminars for community leaders, religious leaders and local authority figures.
- Select women with delivery and nursing experience and support their training at the County Community Health College. Specifically, provide training in basic obstetric and family planning services.
- Train, support and supervise TBAs to facilitate more timely referrals for complications and to promote clean deliveries.

- Provide TBAs with bicycles to assist them in their activities.

PROJECT DURATION

- April 1, 2002 to March 30, 2003

PROJECT BUDGET

- 57,693 USD

TANZANIA

As a result of many recent conflicts in the Great Lakes Region, Tanzania has received refugees from the Democratic Republic of Congo (DRC), Burundi, Rwanda and a number of other countries. Located in northern Tanzania along the border with Burundi, Kibondo District has received many refugees; currently there are five refugee camps hosting 162,000 predominantly Burundian refugees. With very limited resources, Kibondo District Hospital serves the local population of 250,000. It has the added responsibility of serving as a referral site for the five refugee camps. As in many other remote settings, recruitment and retention of qualified staff is challenging.

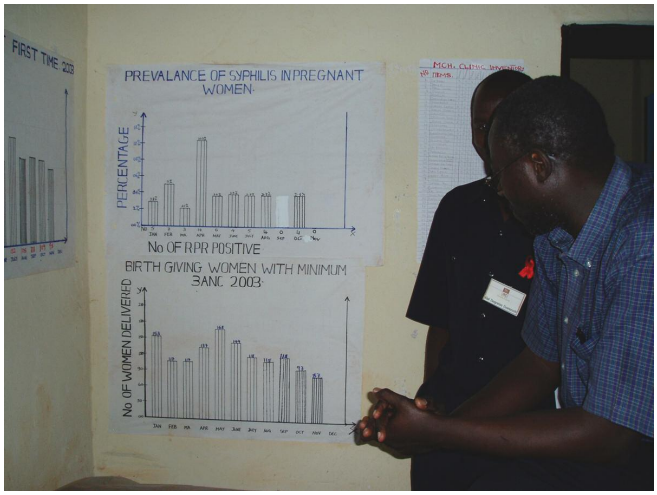
PROBLEMS IDENTIFIED

In collaboration with IRC, an assessment of the facility showed the following major problems:

- The water supply is inadequate and inconsistent.
- There is an inadequate number of qualified staff for the surgical and obstetric departments.
- There are shortages of drugs, medical supplies and equipment.
- The maternity ward is overcrowded and there is a lack of privacy in the labor room and maternity ward.
- Hospital staff are unmotivated due to poor salaries, lack of supervision, lack of continuing education, heavy workload and chronic shortages of supplies.
- There are delays in assembling the team to respond to emergencies, especially at night due to lack of transport and communication methods.
- There is no incinerator for medical waste disposal.
- Cases requiring blood transfusions are referred to another facility due to shortages in laboratory blood testing kits (HIV/AIDS, hepatitis and syphilis).

PLANNED INTERVENTIONS

- Construct a water tank with 200,000 cubic meters capacity on the hospital grounds.
- Hire full-time on-the-job trainers (one medical doctor, one nurse/midwife, one anesthetist and, if necessary, one laboratory technician).
- Establish standard protocols for EmOC.
- Provide the hospital with a codan radio using the communication system established by UNHCR.
- Provide medicines needed for EmOC, create a minimum supply of medicines, and train staff in drug logistics management.*
- Provide key equipment such as vacuum extractor, delivery sets, vaginal/perineal/cervical repair packs, delivery beds, cesarean section sets and operating bed.*



- Monitor medical waste disposal at the hospital to assure the incinerator is being used and waste is not being dumped in the open.
- Provide the hospital with necessary test kits for emergency blood transfusions.

PROJECT DURATION

- August 2001 to July 2003

PROJECT BUDGET

- 109,250 USD

** Refer to Annex B for a detailed listing of items required for each of the sets and packs.*

THAILAND

Over 50 years of isolation, totalitarian rule and civil war in Burma have forced the displacement of hundreds of thousands of Burmese women, men and children. In 2000, there were approximately one million internally displaced persons in Burma, one million migrants in Thailand, including 350,000 living in refugee-like circumstances and 120,000 refugees housed in Thai border camps. The hostilities in Burma include forced relocation, forced labor, rape and murder. Due to hostilities, health care is considered to be inadequate and difficult to access. To address shortages of qualified personnel, the Mae Tao Clinic established training programs for midwives and medics, including backpack health workers deployed in Burmese border areas.

Umpiem Mai, Nu Po and Ban Don Yang Camps

ARC provides preventive health care services in all three camps and curative care in Ban Don Yang Camp only. The assessment focused on Umpiem Mai and Nu Po Camps located in Tak Province.

PROBLEMS IDENTIFIED

- There is a high incidence of unsafe induced abortions and lack of post-abortion care services.
- Health workers lack training in Basic EmOC.
- There is a lack of equipment such as MVA kits in all camp facilities, insufficient supply of cesarean kits at the referral hospital, as well as insufficient amounts of other medicines and equipment.

PLANNED INTERVENTIONS

- Establish a team of camp health providers to provide Basic EmOC.
- Train the established refugee camp team in Basic EmOC and life-saving skills at the referral hospital.
- Train the refugee health workers in early detection of complications and establish referral procedures.
- Equip the refugee camp health facilities with the required equipment for Basic EmOC.*
- Procure and replace the old equipment used in EmOC service delivery at the referral hospital.*
- Train staff in postabortion care, including MVA.

PROJECT DURATION

- March 1, 2002 to February 28, 2003

PROJECT BUDGET

- 8,108 USD

Mae Tao Clinic and Women's Commission for Refugee Women and Children

Since 1989, Mae Tao Clinic has been providing free health care to an increasing number of Burmese refugees, forced migrant workers and Burmese crossing the border in search of health care.

PROBLEMS IDENTIFIED

- Staff at the clinic identified unwanted

** Refer to Annex B for a detailed listing of items required for each of the sets and packs.*

pregnancies and unsafe abortions and obstetric emergencies as priority needs.

- Inpatient obstetric care is provided in an overcrowded four-bed basement room.
- There is a lack of sufficient equipment, medicines and supplies.
- There are insufficient funds to assure that women referred to Mae Sot Hospital receive the care they need, such as cesarean section, blood transfusion and treatment for septic abortions.
- Many of the obstetric complications encountered at the Clinic must be referred to Mae Sot Hospital.

PLANNED INTERVENTIONS

- Construct a new maternity ward to provide all Basic EmOC, as well as blood transfusions.
- Increase the number of beds to 16 inpatient beds.
- Improve patient flow by separating the inpatient from the outpatient departments.
- Provide equipment, medicines and supplies.*
- Build capacity to provide blood transfusions.
- Provide funds to support costs of referrals to Mae Sot Hospital.
- Provide in-service training to clinic providers on Basic EmOC including life saving skills, PAC, use of MVA and counseling techniques.
- Improve client knowledge and recognition of obstetric complications and where to go.
- Develop and promote the use of standard protocols for management of obstetric and

neonatal complications.

- Train midwives on the use of the partograph.
- Improve data collection on all pregnancies and deliveries.
- Introduce a case review system for all maternal deaths or "near misses."
- Improve coordination with Mae Sot District Hospital for referrals.
- Establish an emergency team to assure 24-hour coverage of the obstetric department.
- Improve postpartum family planning counseling and education.

PROJECT DURATION

- December 2001 to November 2003

PROJECT BUDGET

- 101,142 USD

** Refer to Annex B for a detailed listing of items required for each of the sets and packs.*

UGANDA

With IRC, an assessment of two facilities (Kiryandongo Hospital and Panyadoli Health Center) located in northern Uganda's Masindi District was conducted in October 2002. This is the site of Kiryandongo Refugee Camp, home to approximately 15,000 mostly Sudanese refugees; however, due to fighting in Pader, Kitgum District, the camps absorbed nearly 15,000 more refugees starting at the end of 2002 through the first part of 2003.

PROBLEMS IDENTIFIED

The hospital offers Comprehensive EmOC; however, it has many challenges that preclude provision of consistent good quality services. These problems include:

- There are ongoing water supply difficulties.
- There are shortages of drugs (especially antibiotics and magnesium sulfate), equipment and supplies.
- Hospital staff are unmotivated due to a lack of continuing education, feelings of isolation, low salaries, lack of supervision, high workload and chronic shortages of supplies and materials.
- There are delays in responding to emergency obstetric cases especially during the night due to a lack of electricity and the absence of an ambulance.
- There are no protocols or guidelines for emergency obstetric care.
- There are shortages of laboratory blood testing kits (HIV/AIDS, hepatitis and syphilis).
- There are shortages of blood for transfusions.
- There is a lack of MVA kits for postabortion care.
- There is a lack of oxygen for responding to emergency cases.

Panyadoli Health Center does not offer the complete package of Basic EmOC services and the following issues must be addressed in order to provide these services:

- There is a lack of sufficient and appropriate equipment and drugs such as a vacuum extractor and magnesium sulfate.
- There is a lack of equipment for newborn resuscitation.
- There are structural problems (roof leaking in the delivery room).
- It is a small facility unable to respond to a larger population and the increased potential demand due to the new influx of refugees in the settlement.
- There is no electricity and no running water.

PLANNED INTERVENTIONS

- Provide equipment and medical disposable supplies to both facilities on a regular basis.*
- Provide hospital with a generator for electricity to be used at night in the operating theater.
- Provide support for building and repairs of structures, especially at Panyadoli Health Center.
- Provide protocols and guidelines for management of emergency obstetric care to both facilities.

** Refer to Annex B for a detailed listing of items required for each of the sets and packs.*

- Provide and fill oxygen cylinders for both facilities in order to respond to emergency complications.
- Provide medicines, especially those that are needed for EmOC.*
- Create a minimum supply of drugs for EmOC that must always be on hand in order to avoid stock-outs.
- Provide staff training in collaboration with the District trainers on infection prevention, EmOC, postpartum care, family planning and logistics management of drug supplies.
- Provide Kiryandongo Hospital with EmOC equipment that is lacking.
- Procure ambulance and provide emergency transport for emergency obstetric cases from the refugee settlement to the hospital and establish a referral system.

PROJECT DURATION

- January 1 to December 31, 2003

PROJECT BUDGET

- 123,150 USD

ANNEX B: Instruments, Supplies and Medicines Required for EmOC[19]

1. DELIVERY PACK

No.	Items, Equipment, Instruments	Quantity
1.	Artery forceps	2
2.	Cord-cutting/blunt-ended scissors	1
3.	Cord ties	2
4.	Gloves	2 pairs
5.	Plastic sheeting	2
6.	Gauze swabs	4
7.	Cloth	1

2. PERINEAL,VAGINAL, CERVICAL REPAIR KIT

No.	Items, Equipment, Instruments	Quantity
1.	Sponge forceps	1
2.	Artery forceps - large	1
3.	Artery forceps - small	1
4.	Needle holder	1
5.	Stitch scissors	1
6.	Dissecting forceps - toothed	1
7.	Vaginal speculum - large (Sims)	1

3. VACUUM EXTRACTION, FORCEPS DELIVERY

No.	Items, Equipment, Instruments	Quantity
1.	Vacuum extractor	1
2.	Obstetrics forceps - outlet	1
3.	Obstetrics forceps - mid-cavity	1
4.	Obstetrics forceps - breech	1

4. OBSTETRIC LAPAROTOMY, CESAREAN SECTION PACK

No.	Items, Equipment, Instruments	Quantity
1.	Stainless steel instrument tray with cover	1
2.	Towel clips	6
3.	Sponge forceps 22.5cm	6
4.	Straight artery forceps 16cm	4
5.	Uterine haemostatic forceps 20cm	8
6.	Hysterectomy forceps, straight 22.5cm	4
7.	Mosquito forceps 12.5cm	6
8.	Tissue forceps 19cm	6
9.	Uterine tenaculum forceps 28cm	1
10.	Needle holder, straight 17.5cm	1
11.	Surgical knife handle/No. 3	1
12.	Surgical knife handle/No. 4	1
13.	Surgical knife blades	2
14.	Triangular point suture needles/7.3cm/size 6	2
15.	Round-bodied needles/No.12/size 6	2
16.	Abdominal retractor/size 3	2
17.	Abdominal retractors/double-ended (Richardson)	2
18.	Curved operating scissors/blunt pointed (Mayo) 17cm	1
19.	Straight operating scissors/blunt pointed Mayo 17cm	1
20.	Scissors, straight 23cm	1
21.	Suction nozzle	1
22.	Suction tube, 22.5cm, 23 French gauge	1
23.	Intestinal clamps, curved (Dry) 22.5cm	2
24.	Intestinal clamps straight 22.5cm	2
25.	Dressing (non-toothed tissue) forceps/15cm	2
26.	Dressing (non-toothed tissue) forceps/25cm	1

5. INSTRUMENTS FOR CRANIOTOMY

No.	Items, Equipment, Instruments	Quantity
1.	Decapitation hook	1
2.	Breech hook	1
3.	Craniotomy bone forceps (Morris)	4
4.	Cranial perforator (Simpson)	1
5.	Embryotomy scissors	1
6.	Scalp forceps (Willet)	4

6. UTERINE EVACUATION SET

No.	Items, Equipment, Instruments	Quantity
1.	Vaginal speculum (Sims)	1
2.	Sponge (ring) forceps or uterine packing forceps	1
3.	Single tooth tenaculum forceps	1
4.	Long dressing forceps	1
5.	Uterine dilators, sizes 13-27 (French)	One set
6.	Sharp uterine curettes size 0 or 00	1
7.	Blunt uterine curettes, size 0 or 00	1
8.	Malleable metal uterine sound	1
9.	Vacuum syringes (single or double valve)	3
10.	Flexible cannulae 4-12mm	3
11.	Adapters	3
12.	Silicone lubricant	1

7. ANESTHESIA EQUIPMENT AND NEONATAL RESUSCITATION PACK

No.	Items, Equipment, Instruments	Quantity
1.	Anesthetic face mask	1
2.	Oropharyngeal airways	5
3.	Laryngoscopes with spare bulbs and batteries	3
4.	Endotracheal tubes with cuffs (8mm)	Constant supply
5.	Endotracheal tubes with cuffs (10mm)	Constant supply
6.	Intubating forceps (Magil)	3
7.	Endotracheal tube connectors 15mm plastic	6
8.	Spinal needles (range of sizes, 18-gauge to 25-gauge)	Constant supply
9.	Suction apparatus: foot-operated	1
10.	Suction apparatus: electrically operated	1
11.	Anaesthesia apparatus (draw-over system)	1
12.	Oxygen cylinders with manometer and flow meter (low flow) tubes and connectors	1
13.	Mucus extractor	4
14.	Infant face mask	1
15.	Ventilatory bag	2 (different sizes)
16.	Suction catheter Ch 12	1
17.	Suction catheter Ch 10	2
18.	Infant laryngoscope with spare bulb and batteries	2
19.	Endotracheal tubes 3.5	1
20.	Endotracheal tubes 3.0	1
21.	Infant warmer	1

ANTIBIOTICS	Dopamine (injectable)
Amoxicillin	Ephedrine
Ampicillin (oral)	Furosamide (injectable)
Ampicillin (injectable)	Nalaxone (injectable)
Benzathine penicillin (injectable)	Nitroglycerine (sublingual)
Benzyl penicillin (injectable)	Prednisone
Cefazolin	Prednisolone (oral)
Ceftriaxone (injectable)	Promethazine (oral)
Cloxacillin	
Erythromycin	ANTIMALARIALS
Gentamicin (injectable)	Artemether
Kanamycin (injectable)	Artesunate
Metronidazole (injectable)	Chloroquine (oral)
Metronidazole (oral)	Mefloquine
Nitrofurantoin	Quinine (injectable)
Penicillin (oral)	Sulfadoxine/Pyrimethamine
Procaine penicillin G	
Trimethoprim/Sulfamethoxazole	DISINFECTANTS
	Cetrinide (solution)
OXYTOCICS	Chlorhexidine (solution)
Ergometrine (oral)	Iodine (solution)
Ergometrine (injectable)	Surgical spirit (solution)
Methylergometrine	
Misoprostol	STEROIDS
Oxytocin (injectable)	Betamethasone
15 methyl-prostaglandin F2a	Dexamethasone
Prostaglandin E2	Hydrocortisone
DRUGS USED IN EMERGENCIES/RESUSCITATION	IV FLUIDS
Adrenaline (injectable)	Dextrose 10%
Aminophylline (injectable)	Glucose (5%, 10%, 50%)
Atropine sulfate (injectable)	Normal saline
Calcium gluconate (injectable)	Ringer's lactate
Digoxin (injectable)	
Diphenhydramine (injectable)	

ANTICONVULSANTS (INJECTABLES)	Indomethacin (oral)
Diazepam	Morphine (injectable)
Magnesium sulfate	Paracetamol (oral)
Phenytoin	Pethidine (injectable)
ANTIHYPERTENSIVES	TOCOLYTICS
Hydralazine (injectable)	Ritrodrine
Labetolol (oral)	Salbutamol
Nifedipine (sublingual)	Terbutaline
ANESTHETICS	OTHERS
Halothane	Anti-tetanus serum
Ketamine (injectable)	Folic acid
Lidocaine 2% (injectable)	Ferrous sulfate
Lidocaine 5% (injectable)	Heparin
Lignocaine 2% or 1%	Magnesium trisilicate
Nitrous Oxide	Sodium citrate
	Tetanus toxoid
ANALGESICS	Tetanus antitoxin
Ibuprofen (oral)	Vitamin K

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