The Mobile Obstetrics Maternal Health Worker Project (MOM):

Increasing access to reproductive health services in eastern Burma



EXECUTIVE SUMMARY

Alternative strategies to increase access to reproductive health services among internally displaced populations are urgently needed. In eastern Burma continuing conflict and lack of functioning health systems render the emphasis on facility-based delivery with skilled attendants unfeasible. Along the Thailand/Burma border, local organizations are implementing a unique pilot, the "Mobile Obstetric Maternal Health Workers (MOM) Project", which establishes a three-tiered collaborative network of community-based reproductive health workers. Health workers from local organizations receive practical training in basic emergency obstetric care plus blood transfusion, focused antenatal care, and family planning at a central facility. Returning to their target communities inside Burma, these first-tier "Maternal Health Workers" (MHWs) train a second tier of local health workers (HWs) and a third tier of traditional birth attendants (TBAs) to provide a limited subset of these interventions depending on their level of training. Close communication between health workers and TBAs promotes acceptance and coverage of reproductive health services throughout the community. We describe the rationale, the design and implementation of the project and the parallel monitoring plan for evaluation of the MOM Project. This unique model of health care delivery may serve as a model for new strategies for increasing access to care in other conflict settings.

Keywords:

Emergency obstetric care, reproductive health, misoprostol, internally displaced populations, Burma

The MOM Project is a collaborative effort between:

Burma Medical Association Mae Tao Clinic Karen Department of Health and Welfare Shan Health Committee Mon Health Department Karenni National Health Organization

The MOM Project is funded by:

The Bill and Melinda Gates Institute for Population and Reproductive Health at the Johns Hopkins Bloomberg School of Public Health

Global Heath Access Program

The Foundation for the People of Burma

Technical Assistance for the MOM Project is provided by:

Global Health Access Program

Johns Hopkins Center for Public Health and Human Rights

Table	e of	Contents



I. INTRODUCTION

In many communities, conflict is a pervasive part of everyday life. Often, men and women live out their entire reproductive lives as internally displaced persons (IDPs) or refugees. IDPs are defined by the UNHCR as "individuals or groups of people who have been forced to flee their homes to escape armed conflict, generalized violence and human rights abuses" as well as people displaced by floods and other natural disasters [1]. At the end of 2006, the United Nations High Commission on Refugees (UNHCR) estimated 23.7 million conflict-related IDPs as well as an additional 25 million environmental-disaster related IDPs living worldwide [1].

Logistical constraints that restrict access and impede development of effective population-based services are commonly exacerbated in areas where displaced persons have not crossed an international boundary, and in general less international attention has traditionally been focused on IDPs relative to refugees. IDPs and people living in conflict settings are more vulnerable and difficult to reach than internationally recognized refugees. Population displacement, erosion of infrastructure, and diversion of resources severely constrain the ability of existing peripheral health systems to be able to provide adequate health care for the IDP population, especially where minority populations are in direct conflict with military regimes.

There is an urgent need for innovative programs to address health needs in IDP settings. One such setting is eastern Burma, where many communities continue to live within the confines of one of the longest ongoing civil conflicts. Decades of misrule and conflict between the military junta and ethnic minority insurgent groups in eastern Burma have forcibly displaced approximately 560,000 people from their homes [2]. In the IDP areas of Burma known as 'black zones', ethnic minorities are the target of the junta's 'four cuts' policy, a broad effort to cut off food, funding, information, and recruits through extensive and collective human rights violations such as forced displacement, forced labor, and destruction of food supplies. In addition, the junta restricts the delivery of health supplies to these populations and severely curtails the ability of international non-governmental organizations to provide humanitarian assistance [3-5]. The withdrawal of the Global Fund to Fight AIDS, Tuberculosis, and Malaria from Burma in 2005 highlighted the need for alternative strategies to reach IDPs in the border regions [6-8].

On the Thailand/Burma border, ethnic health organizations such as the Karen Department of Health and Welfare (KDHW) and the Back Pack Health Worker Team (BPHWT) provide curative and preventative health services through a range of public health programs. Leaders of these organizations, with assistance from Global Health Access Program (Berkeley, CA, <u>www.ghap.org</u>), have conducted population-based retrospective mortality and morbidity surveys to document the devastating effect of the conflict and the impact of the junta's systematic human rights abuses on health status [9-11]. These surveys have estimated high child ($\sim 220 / 1000$ live births) and infant ($\sim 90 / 1000$ live births) mortality rates in the "black zones" most impacted by the conflict [10], and highlighted the widespread human rights violations occurring in these communities [11].

In eastern Burma, as in many conflict settings, women are disproportionately affected, and globally women and children under the age of 18 make up approximately 70-80% of internally displaced persons [12]. In conflict settings, women often have poorer pregnancy outcomes than during times of stability [13]. Stress and conflict can take a particular toll on pregnant women, causing high rates of anemia and malnutrition that can lead to poor pregnancy

and birth outcomes [14]. Only recently has the international community begun to recognize the impact that conflict has on women's reproductive health outcomes and the need for specific interventions to address these vulnerabilities. While some improvements in this area have been made with regard to refugees, much less progress has been made for IDPs [15]. During conflict and post-conflict times, considerable attention is paid to basic needs such as water and sanitation, prevention and control of infectious diseases, provision of shelter, and nutrition. Provision of these essential services has rarely been concurrently supplemented with reproductive health services. In particular, services and trained personnel to respond to emergencies during pregnancy and delivery are normally unavailable [16].

The focus of efforts by community organizations such as BPHWT, KDHW, and other ethnic and non-governmental organizations in eastern Burma has similarly being directed largely at these crucial immediate needs. However, the same groups are also cognizant of the substantial burden of adverse reproductive health outcomes occurring within their target communities. The maternal mortality ratio for this region has been estimated at between 1000 and 1200 per 100,000 live births [9], with a significant proportion of deaths from post-partum hemorrhage and sepsis. These numbers stand in striking contrast with neighboring Thailand (MMR 44) [17]. In 2002, a survey of areas served by mobile medics from the BPHWT demonstrated that at least 5% of deliveries occurred in the jungle and 78% at home; only 4% of women had access to emergency obstetric care. In addition, only 35% had more than one antenatal care visit, and 22% used modern contraceptive methods [18]. Initial efforts to address reproductive health needs in these communities focused on training programs for traditional birth attendants (TBAs). These small-scale training programs initiated by local organizations including Mae Tao Clinic and BPHWT provided basic materials and educational messages on clean delivery and recognition of danger signs during pregnancy, but there was no capacity to provide a more integrated framework to manage complications via strengthened referral systems or delivery of basic elements of emergency obstetric care.

Given the recognized need to provide additional services to meet the reproductive health needs of their target communities, leaders of the local health organizations along the Thailand/Burma border proposed to pilot a unique delivery model of an integrated package of basic reproductive health interventions. The project aims to increase access to reproductive health services to women and their communities in eastern Burma. The primary strategy is to develop capacity among a unique cadre of mobile maternal health workers to bring basic interventions, including emergency obstetric care, directly to those most in need. This Mobile Obstetric Maternal Health Workers (MOM) Project is a collaborative effort between the Johns Hopkins Center for Public Health and Human Rights, Mae Tao Clinic, Burma Medical Association, Global Health Access Program, and local ethnic health departments. The 3-year pilot project, funded largely by the Bill and Melinda Gates Institute for Population and Reproductive Health (http://www.ihsph.edu/gatesinstitute/index.html) at Johns Hopkins Bloomberg School of Public Health and other partners, was launched in July 2005. This document describes this unique model of delivering reproductive health services for hard-toreach populations and provides an overview of the program structure, training and roles of the health providers included in this project, monitoring and evaluation activities, a review of challenges and lessons learned, as well as successes of the project to date.

II. MOM PROJECT OVERVIEW

The overall long-term objective of the MOM Project is to reduce the maternal morbidity and mortality burden in IDP communities of eastern Burma. During the 3-year pilot period, shortterm aims that are being focused upon and monitored for progress are structured to increase access to reproductive health services for IDP within twelve target communities in four states of eastern Burma (see "MOM Area Populations; Center/Sub-center names" on page 5). Leading voices in the current debate concerning the most appropriate strategies to increase such access largely focus upon facility-based services [19, 20]. For example, the recent Lancet Series on Maternal Mortality and Morbidity, states that "The Millennium Development Goal to improve maternal health (MDG-5) by 2015 will be best achieved by adopting a core-strategy of health centre-based intrapartum care" [21]. Certainly increasing the overall proportion of women delivering in a facility in the attendance of a skilled birth attendant, with full access to comprehensive emergency obstetric care [19], is a long-term goal for communities in eastern Burma. However, this approach is not feasible in the short term given the substantial barriers in this setting to establishing the essential components of a functioning health system that can provide access to a large proportion of the population. Meaningful efforts toward such a longterm goal will only be possible after the cessation of violence. The more immediate question for health care providers in this significantly under-resourced and instable setting is: what are the alternatives strategies to facility-based health services that can be pursued?

Recognizing these constraints to progress in the short-term, local and international partners developed the MOM Project. The overall strategy is to develop a network of Maternal Health Workers (MHWs), Health Workers (HWs), and Traditional Birth Attendants (TBAs) to provide mobile reproductive health services that can function in a conflict setting. This three-tiered approached aims to increase the overall coverage of pregnancies attended by individuals with the capacity to provide one or more components of essential reproductive health services including emergency obstetric care. Providers of all three levels strive to provide services to women and their families at the village level, either in rudimentary "clinics", or more often at home. The emphasis on bringing reproductive health services to the home, rather than focusing on facility-based care, is an essential aspect of this pilot project. Such mobility of service provision is necessary so that experiences gained and lessons learned during the pilot period will be relevant for eventual scale up to a broader proportion of the target population in eastern Burma, where continuing forced displacement has been consistently reported [9, 11].

The basic overall design of the project consisted of two main phases (Design/Training and Implementation) and a parallel monitoring and evaluation component. Phase 1 (Design/Training) included selection of sites and workers, development of curriculum for each of the three levels of worker, and an extensive 7-month training for MHWs. This first phase was initiated in August 2005 and concluded with newly trained maternal health workers returning to their field sites in June 2006. Phase 2 of the project (Implementation) was initiated in late 2006 after MHWs had conducted recruitment and training of HWs and TBAs at their sites, and received all supplies from the centrally located project staff. In this phase, the network of workers is actively identifying pregnant women, providing a range of antenatal services, attending births, providing postnatal care, and delivering family planning services throughout the community. A parallel monitoring and evaluation component to the project aims to collect information through a range of methods including both qualitative and quantitative approaches.

Organizational Structure

In August 2005, members of Johns Hopkins Center for Public Health and Human Rights, Mae Tao Clinic, Burma Medical Association, Global Health Access Program, and local ethnic health departments from Shan, Mon, Karenni, and Karen states met to discuss the program components and finalize implementation plans. A project steering committee was established with representatives from each of the participating organizations. A leading member of the Karen Department of Health and Welfare (KDHW) was jointly selected by the leaders of the ethnic health organizations to represent the ethnic groups given the proximity of KDHW to the training facility and human resources in the area. The steering committee provides overall strategic direction, oversees implementation of the project, provides an organized structure for decision-making during period of the pilot, and guides communication on progress with the donor groups.

The actual implementation of the project is directed by a team of seven local project staff members drawn from the Mae Tao Clinic, Karen Department of Health and Welfare, and Burma Medical Association. Each individual was appointed part-time to the MOM Project from their parent organization and works on the MOM Project while concurrently retaining responsibilities in their original organization. Local staff members hold leadership roles within their communities in the fields of health and education, and have a range of experience including previous program implementation and work as a medic in the field or at Mae Tao Clinic. Specialized staff members were selected for key responsibilities including coordination and development of specific curriculum materials, training plans and schedules, and monitoring instruments; data management; logistics/administration; and finance and accounting. In addition, one US technical advisor works full-time on the MOM Project. This advisor, along with one member of the local staff, forms a two-person team to manage the local staff and general coordination of the project. A basic organizational structure for the MOM project is shown below.



MOM Basic Organizational Structure

Target Populations

A range of target communities was selected for inclusion in the pilot period; this selection was based on a number of criteria. First, the participation of multiple ethnic groups was encouraged to foster collaboration and enhance the relevance of the model for eventual scale up. Second, sites within four ethnic states (Shan, Karen, Karenni, and Mon) were further selected based on the size of their catchment population (5000-10,000), a lack of basic emergency obstetric services, a level of relative stability, and availability of health workers that could be recruited for capacity building in basic EMOC. Sites were considered if they had at least 4-5 higher-level health workers who could be trained as MHWs and 20 local health workers to be trained in a subset of skills. In addition, the sites needed to have supply routes accessible through Thailand and be located in areas where monitoring and evaluation could be conducted. Support from and communication with the local health department, as well as workers and managers of the existing clinic facilities in their area was essential for coordination. An initial set of planned activities for each site additionally helped guide the final selection. The types of activities planned at the outset included those listed below.

- 1. Dedicated training space for regularly scheduled training sessions for building capacity of local health workers and traditional birth attendants, as well as for informational meetings with village leaders and community members
- 2. Referral centers able to provide basic emergency obstetric care services plus transfusion, which serve as a forum in which to introduce proven reproductive health interventions
- 3. Standardized information collection and operational assessment of adapted, appropriate reproductive health interventions
- 4. Safe and secure storage of supplies

An initial target population was focused in seventeen implementation sites. Some of these sites are in close proximity and thus these seventeen were grouped into 12 main centers. Currently, the MOM Project is comprised of twelve centers some of which include sub centers (see below). Sub centers are locations at which an MHW is placed and are located in areas where the population around a center is spread out and it is beneficial to have an additional point of contact for the population. Centers and sub centers serve the same purposes (listed below) except that only centers initially receive supplies and serve as training facilities.

All sites are located in areas affected by ongoing conflict, although the intensity of this conflict varies across sites and temporally within sites. However, given the ongoing security threats faced in all locations, none of the activities in these centers require permanent structures for implementation. All sites maintain semi-permanent structures (for storage of supplies, monitoring and evaluation materials, space for training sessions, etc) and minimal funds are supplied by the project on a regular basis to replace worn roofing or repair tables and floors. The construction of more permanent clinics, such as those made from concrete or solid wood, would draw too much attention from the Burmese military, and greatly increase the likelihood that the village would suffer an attack.

Map of MOM Project Sites



MOM Area Populations; Center/Sub-center names

Area Name	Population		
When no center/sub-center listed, center name is			
same as area name			
Karen State			
1) Paw Bu La Hta	6,203		
Center - Paw Bu La Hta			
Subcenter 1 – Walley Kee			
Subcenter 2 – Maw Poe Kloe	Ī		
2) Ka Toe Ta	6,703		
3) Paw Kaw Der/Maw Kee/Maw Per Kho	7,055		
Center - Maw Per Kho			
Subcenter 1 - Maw Kee			
Subcenter 2 - Baw Peh	Ī		
4) Na Yo Hta	7,413		
Center – Na Yo Hta			
Subcenter 1 - Pana Eh Perkho			
5) Kaw Mu Der	4,521		
6) Wah Ka Der	2,667		
7) Day Pu Noh	3,536		
8) Pahite	3,675		
Karenni State			
9) Karenni	8,045		
Center – Karenni			
Subcenter 1 – Ko Pra			
Shan State			
10) Loi Ta Leung	2,137		
11) Mae Fa Long	2,832		
Mon State			
12) Bee Ree	4,498		
Center - Joe Ha Prot			
Subcenter 1 - Sawanapon			
Subcenter 2 – Pananpine			

Worker Description and Roles

In conjunction with selection of sites, the steering committee developed criteria for all three levels of workers within the MOM Project and began to select individuals to participate. Selection of workers in each site was based on population size and the following worker to population ratios: 1 MHW per 2,000 population; 1 HW per 500 population; and 1 TBA per 200 population. Ethnic health leaders chose MHWs directly from the community; each proposed MHW must have graduated from a training program recognized by the ethnic health committee/department, have completed at least two years experience working as a health worker or in a related field, be willing to commit to at least three years of work for this pilot project, and communicate in both written and spoken Burmese.

From each site, 1-4 individuals were chosen to complete the MHW training phase of the project. From among these, a team leader for each site was selected; the leaders were appointed the tasks of returning every six months for retraining, managing inventory of supplies, supervising field activities, trainings, and data collection by all workers within the area, and maintaining contact with the ethnic health department leader and MOM project staff in Thailand. Workers at the next level of service provision, health workers, were required to have completed a basic health or TBA training recognized by their ethnic health department or committee, and have had at least 6 months experience providing services in their community, and be willing to commit to at least three years of work in the field. Traditional birth attendants were identified from among those actively attending births in the community and recognized by their community as someone to call upon for antenatal care, delivery, post-natal, or other reproductive health services. Those with both more and less experience were included in the selection process. For details on skills and primary responsibilities of workers, please see below.

Intervention	MHW	HW	TBA
General Antenatal			
Fe/FA	✓	\checkmark	\checkmark
Deworming	\checkmark	\checkmark	\checkmark
Paracheck	✓	✓	
ITN delivery	✓	✓	
Counseling (nutrition, newborn care, breastfeeding)	\checkmark	\checkmark	\checkmark
VDRL	\checkmark	✓	
Hemoglobin	✓	\checkmark	
Urine test	\checkmark	\checkmark	
Labor and Delivery			
Clean delivery (hand-washing, clean surface, etc)	✓	✓	✓
Cord cutting with clean blade	\checkmark	\checkmark	\checkmark
Cord antisepsis	✓	✓	✓
Neonatal resuscitation	\checkmark	\checkmark	\checkmark
Suction Ball	\checkmark	\checkmark	\checkmark
Basic Emergency Obstetric Care			
Misoprostol	\checkmark	✓	
Vacuum Extraction			
Manual vacuum aspiration	\checkmark		
IM/IV Magnesium	\checkmark		
Manual removal placenta	\checkmark		
Blood donor screening and Transfusion	✓		
Antibiotics	\checkmark	\checkmark	
Post partum and other intervention			
Counseling (breastfeeding, skin to skin contact, cord care)	\checkmark	\checkmark	\checkmark
Post-partum vitamin A for mother	\checkmark	\checkmark	\checkmark
Post partum home visits	\checkmark	\checkmark	\checkmark
Family Planning Counseling	\checkmark	\checkmark	\checkmark
Provision of EC Pills	\checkmark		
Provision of Depo and FP Pills	\checkmark	✓	
Provision of condoms	✓	\checkmark	\checkmark
Blood screening	\checkmark	\checkmark	
Blood transfusion	✓		
Post-abortion counseling/care	\checkmark	✓	

Summary of selected interventions provided by maternal health workers, health workers, and traditional birth attendants in the MOM project

This overall standard was set to ensure proper supervision and training for a minimum set of interventions, but roles of MHW/HW/TBA are flexible. Roles are constantly evolving, with responsibilities of HWs expanding over time as they learn more complex EmOC interventions, for example.

III. PHASE ONE: TRAINING

MHW Training in Thailand

Training the identified candidate maternal health workers was the primary capacity building activity during Phase I. A total of 33 MHWs were trained, the majority of whom were females (N=30). All trainees had completed at least four months of basic medical training, with the majority having had a six-month basic medical training course. Almost all medics had completed two years of fieldwork as a medic (N=30, 90.9%) with 11 (33.3%) trainees having over 5 years of experience and 1 trainee having worked for 20 years as a medic. All had completed the sixth standard, with the majority (N=23, 69.7%) having reached tenth standard, or equivalently, completed secondary school education. With the exception of one MHW from Paw Ka Der area who left during Year 2 for resettlement in a third country, all MHWs have stayed with the MOM Project.

The MOM Project training for MHWs consisted of both classroom and practical training. The project Steering Committee and Project Coordinators designed the curriculum and schedule for both training components, drawing heavily upon resources developed by the Averting Maternal Death and Disability Program at Columbia University and JHPIEGO of Johns Hopkins University. At various points in the development of the curriculum, members of an external advisory committee were informally approached for advice and feedback. The classroom training focused on familiarizing the trainees with basic obstetric knowledge including clinical principles, symptoms and problems associated with pregnancy and delivery. The training consisted of six hours per day for a total of 198 classroom hours, and included lectures, case studies, role-play, and clinical simulations. Trainees were placed in groups according to their clinic area, so as to increase their productivity and teamwork upon return to the field. A complete summary of the topics discussed appears in the Appendix 1.

Classroom training was then followed by hands-on experience gained through intensive participation in provision of care and service in the reproductive health in-patient setting at Mae Tao Clinic. The length of this part of the training program was 2 months, and the workers averaged 6 hours per day in the ward. Through close one-on-one supervision from senior reproductive health medics, doctors, and expatriate obstetrical and gynecological specialists, the trainees could be directly supervised and provided with crucial feedback on their progress. The Mae Tao clinic, with an average of 250 births per month, provided the volume of deliveries necessary for all trainees to be exposed to a substantial number of both normal and complicated deliveries.

The main emphasis of the practical portion was to facilitate development of the necessary skills to perform five of the six basic obstetric emergency procedures plus transfusion. Intravenous/Intramuscular (IV/IM) antibiotics, IV/IM Magnesium, manual removal of placenta, manual vacuum aspiration, and misoprostol for prevention and treatment of post partum hemorrhage. Vacuum extraction was excluded given the relative difficulty of the procedure, lack of experience among senior RH medics using disposable or portable reusable devices such as the Kiwi OmniCup® vacuum extractor, and considerable effort and time being expended on the training of the remaining five BEOC components. Trainees were divided into three teams and assigned in shifts to delivery, post natal, antenatal, non-delivery, abortion and post-abortion care responsibilities. Teams were lead by two senior medics, one from the field (MHW Team Leader) and one from Mae Tao Clinic RH-IPD. Concurrently during practicum training, the

Trainer conducted daily bedside case study training in Mae Tao Clinic, with fictitious case studies and role play exercises in the afternoon. In addition, weekly review and teaching sessions were conducted for two hours to review the progress of the training and address any questions. Exposure to specific BEOC interventions during the practical training was tracked for each trainee; a summary of mean, median, and range of deliveries involving provision of each of these components is shown below.

	Antibiotics	Oxytocin	Anticonvulsants	Manual Removal	MVA	VE			
				of Placenta		w/Kiwi			
Weeks 1-7 (N=43)									
Total	203	349	16	1	117	38			
Mean	4.7	8.1	0.37	0.02	2.7	0.88			
Range	0-9	0-11	0-2	0-1	0-8	0-5			
Median	0	0	0	0	0	0			
Weeks 8-	-9 (N=35)								
Total	77	110	20	1	28	39			
Mean	2.2	3.1	0.57	0.03	0.8	1.1			
Range	0-8	0-10	0-3	0-1	0-3	0-5			
Median	1	0	0	0	0	0			
Week 10	(N=34)								
Total	28	55	4	0	6	11			
Mean	0.82	1.6	0.12	0	0.18	0.32			
Range	0-7	0-9	0-1	0-0	0-1	0-4			
Median	0	0.5	0	0	0	0			
Week 11 (N=20)									
Total	35	61	4	1	20	7			
Mean	1.8	3.05	0.2	0.05	1	0.35			
Range	0-6	0-8	0-2	0-1	0-4	0-2			
Median	0.5	3	0	0	0	0			

Mean/Range/Median of Procedures Completed during Practical Training (per MHW)

Evaluation was conducted for both classroom and practical training. All trainees completed pre- and post- tests for a range of topics, using a combination of short answer, true/false, or multiple-choice formats. Trainees scoring in the lower range compared to their peers were provided with additional one-on-one training until their understanding of the specific topics improved. Evaluation of the practical training was conducted by monitoring overall levels of exposure to each type of complication and/or EOC intervention, and adjusting shifts and team rotation schedules to ensure that all trainees received sufficient experience. Checklists of required actions taken during provision of delivery care and while implementing each intervention were developed and fill out during direct observation of trainees' work in the RH ward. An example of this type of competency checklist is included in Appendix 2.

In addition to these two main training components, MHWs also received specific workshops on family planning counseling, blood screening and transfusion, as well as Trainingof-Trainer methods. Family planning training included counseling and education on provision of modern contraceptives including condoms, contraceptive injection, oral contraceptive pills, and emergency contraception. Small group discussions and role-plays were utilized to increase the ability of MHWs to effectively communicate with community members through counseling and to dispel misconceptions about the types of methods.



MHWs learn how to document blood screening and transfusion with data form

Blood transfusion is normally considered a component of comprehensive emergency obstetric care only performed at facilities capable of caesarian section [22]. However, blood transfusion was included as part of the MHW training for two reasons. First, in this population high rates of anemia and especially malaria [23] increase the likelihood of severe morbidity and mortality from post-partum hemorrhage, the leading cause of maternal death worldwide [24]. Second, the transfusion component of the MOM Project was adapted from an existing protocol developed to care for patients at KDHW clinics who were severely anemic from trauma or other causes. This protocol takes advantage of recent progress made in the development of heat-stable rapid diagnostic tests to screen blood for malaria, syphilis, hepatitis B and C, and HIV. Because of the inability to store blood in the field, MHWs conduct community education about the need for blood transfusions in advance, and recruit donors from community volunteers, thus maintaining a "walking blood bank". When needed, they can request donors with matching blood type, conduct confidential screening, and give appropriate counseling and treatment as needed.

Since MHWs will spend a large amount of their time training health workers and traditional birth attendants in the field, several days were allocated during training to discuss Training-of-Trainers methods. During this time, MHWs gain an understanding of adult learning style, theories regarding the most effective teaching of adults, behavior change models, and the design and use of a variety of teaching tools. Much of this time was spent having MHWs practice the various teaching methods after learning the theory. For example, MHWs practiced facilitation skills and leading group discussions shortly after being presented with concepts.

HW Trainings in the Field

Upon completion of training in Thailand in June 2006, MHWs returned to the field to begin work. Returning to the field sites was a lengthy process, with some MHWs taking up to

six weeks to return to their target communities. The main reason for delays was security, as safe passage of trainees back across the Thai/Burma border is achieved only after taking certain precautions and confirming specific travel arrangements. When first arriving at their sites, the MHWs initiated a series of meetings with health department, district, and village leaders to explain the program. Overall objectives and strategies for implementation were discussed, and the three-tier network of workers was described. The meetings followed an informal, participatory approach allowing all local stakeholders to offer opinions and provide recommendations and suggestions toward smooth implementation.

While local support had already been largely secured through discussions and agreements from the concerned ethnic health department, these meetings were a chance to clarify the overall goals and objectives of the MOM project and provide answers to outstanding questions. Furthermore, meetings with village heads, pastors, women's groups, and one-on-one informal discussion allowed MHWs to quickly disseminate to their communities the news of the MOM project, its overall goals, and the services that would be provided. This process of informing and sensitizing the community to the project was envisioned as a necessary and appropriate step to secure buy-in and support for the project in the community. After securing local support, the MHWs organized a schedule of identification, recruitment and training of the 2nd and 3rd cadres of MOM project workers: health workers and traditional birth attendants.

Through 13 health worker trainings, 131 individual health workers were trained specifically for the MOM project in close coordination with MHWs. These individuals ranged in age from 18 to 30 years, were mostly unmarried females, had all completed community health worker training prior to starting with the MOM project. They generally speak Karen and Burmese; very few speak English. The health worker candidates were identified and recruited from communities in the target population through discussions with community leaders. The trainings continued for approximately 2 months, and similar to the MHW training, the HW training sessions included both classroom and practical training in basic reproductive anatomy, safe delivery, antenatal and post-natal care, post-abortion care and provision of family planning services in the community. Curricula were developed as shortened versions of the original MHW curriculum (Appendix 3). As the one of the most important objectives of the MOM project is to increase overall access to attendants who can deliver components of emergency obstetric care, the health workers were given training in provision of antibiotics and misoprostol for prevention of post-partum hemorrhage. Among the EmOC interventions, these two addressed the most common causes of maternal mortality (PPH and sepsis), and were also the easiest to teach during the shortened local health worker training. Other key elements of the training focused on recognition of danger signs and the need for establishing rapid modes of communication with MHWs in case of the need for referral. The vast majority of HWs trained are currently still working with the MOM Project.

During field activities, MHWs rely on HWs to assist in achieving the goal of having an attendant at every birth who can provide BEOC while assisting the TBAs. MHWs maintain regular contact with HWs with regard to expected delivery dates, often keeping a record on a board at the clinic. This helps to increase the likelihood of an MHW in attendance at the time of delivery. In the event, however, that an MHW cannot be in attendance, the second priority is the HW, and these workers can at least provide increased coverage of the more limited set of BEOC components. Identification of women with risk factors for complications during pregnancy and delivery is not an effective strategy for increasing access to BEOC. In particular, attendance by

an MHW or HW at every delivery to provide prevention and treatment doses of misoprostol remains an essential goal as the majority of postpartum hemorrhage cases occur in women with no previous risk factors [25]. In general, the greater number of HWs compared to MHWs (average ratio: 4:1 HW for each MHW), allow for greater dispersion throughout the target area. This dispersion facilitates a vital link between the HWs and the TBAs who are generally first contacted by the community members. These HWs thus play a crucial role in helping MHWs manage overall service provision in the community and assist in increasing attendance at birth by MHWs.

We expect that the role of HWs will expand over time as they continue to receive followup training, and gain experience in the delivery of all reproductive health interventions provided by MHWs. Thus the capacity built at Mae Tao Clinic is eventually spread to all target areas of the MOM project.

TBA Trainings in the Field

As in many low resource settings, the communities of eastern Burma have developed an informal network of traditional birth attendants who provide care to women during pregnancy, at the time of labor and delivery, and during the immediate postnatal period. As an integral part of the community, they have the greatest opportunity for direct and early contact with pregnant women. Following recommendations from UNFPA, WHO and others, TBAs are supported in the MOM project as playing a crucial role in strengthening the link between pregnant women and the more technically-trained MOM workers (MHWs and HWs). However, recognizing the constraints of the setting in eastern Burma and the fact that none of the MOM project areas can depend solely on facility-based care, TBAs in the MOM project are also called upon to provide basic, evidence-based components of antenatal, delivery, and postnatal care that improve both maternal and neonatal outcomes.

A total of 22 TBA trainings were conducted, resulting in 288 TBAs trained specifically for work with the MOM Project. Each TBA training session was conducted by MHWs with leadership provided by the team leader from that area. As with health workers, TBAs were initially recruited through discussions with community leaders; as TBAs are well-recognized caretakers of women during pregnancy, TBAs were easily identified throughout the target population. Previous training was not a requirement, and the TBAs prior experience and exposure to previous



training opportunities likely varied substantially. According to reports from the field, we believe that all TBAs trained through the MOM Project are still currently working with the MOM Project.

The TBA training sessions followed a detailed, seven-day, step-by-step curriculum focused on the important points of essential newborn care, clean delivery and family planning counseling (Appendix 4). These topics were introduced within the context of the overall goals and objectives of the MOM project, so that TBAs were well familiarized with the importance of their role in strengthening communication and working effectively with MHWs and HWs.

IV. PHASE TWO

Service Provision

The second phase of the MOM project focuses less on capacity building and more on delivery of services to the target population. The transition to the second phase began in each area when MHWs had completed the training sessions for health workers and traditional birth attendants. Pregnant women may be identified through contact with any of the MOM project workers, but are normally identified first by traditional birth attendants. TBAs will then inform the woman of the MOM project and the additional services available to them through the MHWs and HWs.

Follow up trainings

In February 2007, 25 MHW Team Leaders and other MHWs returned from the field for one month of follow up training, as well as to return data forms from the field and coordinate resupplying of their centers. The first part of the follow-up training consisted of focus group discussions, where MHWs were divided by area. Questions were used to guide a conversation aimed at gaining contextual knowledge of their time in the field, as well as practical information about number of cases and deliveries. This information was used to guide the follow up training, tailoring workshop days to meet the needs of MHWs with regard to strengthening EmOC skills. Information on the methodology of these focus group discussions is provided below in the Monitoring section.

During follow up, MHWs received refresher training on all aspects of their clinical work in the field (Appendix 5). Primarily, small group work on case studies was found to be the most effective tool for learning. MHWs also spent a great deal of time reviewing the use of the data collection tools and making small changes to formatting as needed. In addition, they spent time



reviewing protocols, particularly for blood screening and transfusion, as well as for delivery of misoprostol. A senior MHW from the field used his experience with screening and transfusion to develop a new method for recording information and doing safe blood screening. Discussion about this topic led to changes in the data collection tool specific to this activity, as well as information sharing on methods useful in creating and maintaining a transfusion program at the village level.

Further group discussion allowed for consensus on delivery of misoprostol by TBAs. MHWs created a criteria for use of misoprostol by TBAs, which limits their administering of the

drug to extreme cases where an MHW or HW is not able to attend a delivery due to security this is an example of the evolution of the roles of MHW/HW/TBAs during the project, as the relationships, experience, and training of the workers improved. Another outcome of the follow up training was the development of curricula for HW and TBA follow up trainings (Appendix 5). MHWs worked with the trainers to create a three-day follow up training for TBAs, as well as a one month follow up training for HWs. In addition, MHWs created the first uniform HW pre/post test.

During October of 2007, 18 MHWs and 2 HWs again returned to Mae Sot for another follow-up training, this time for two-weeks. As well as qualitative assessment of MHWs via indepth individual interviews, focus group discussions and detailed case report forms to document stories from the field, MHWs received extensive training in qualitative topics such as training-of-trainers and counseling techniques (family planning, STI, ANC), learned about low-cost early neonatal care interventions, and breastfeeding. HW and TBA curriculum, assessment, and data collection forms were also updated at this time, with MHWs providing critical input. All completed data collection instruments from the field were collected during this training, and MHWs were re-stocked with supplies and blank data collection forms. An outline of this follow-up training can be found in Appendix 6.

V. MONITORING AND EVALUATION

The periodic surveys at baseline, interim, and endpoints will provide quantitative information on access over time to a range of interventions offered by the MOM project. Specifically, these cluster surveys will include questions on background and demographic variables, pregnancy history, ANC coverage including access to malaria and anemia screening, iron/folate supplementation, deworming, distribution of long- lasting insecticide treated nets, and number of ANC visits. A module on family planning provides information on knowledge of methods, current use, and unmet need and will help the MOM project direct family planning services in the target population. Evaluation of the MOM project is being conducted through collaboration between the technical assistance partners (GHAP and CPHHR) and is ongoing.

These surveys also include a module of questions on vital events and human rights violations experienced at the individual and household level. Rights violations to be monitored in this setting include forced displacement, destruction or theft of household food supplies, forced labor of household members by the Burma military, direct physical attack by troops, and landmines. This methodological approach has been previously described [11] and will allow estimation of important associations between access to MOM project components and human rights violations. These surveys will also allow estimation of neonatal and infant mortality rates [10], but the planned surveys (approximately 2400 households per survey period) are not a priori powered to detect any changes in mortality risk during the MOM project period. Drawing on the principle that information gathering is most effective when local stakeholders are involved, local ethnic health departments recruited twenty-one individuals from each of the four areas. These surveyors received one month of intensive training on survey and sampling techniques in order to conduct a cross-sectional, population-based reproductive health survey. An important point to note is the fact that surveyors live in the communities in which they conducted the data collection increased their acceptance in the field and willingness of individuals to share information with them. Given the uncertain security environment of the target populations, the inclusion of IDP community members as part of the monitoring team is essential to increased overall acceptance and participation by community members.

For the interim survey, a total of 2,800 surveys will be conducted across the project sites in October of 2007. Similarly, a final survey will be conducted in the fall of 2008. Questions and sampling techniques will be largely consistent with the baseline survey to ensure comparability of outcome numbers over time.

In addition to the cluster-sample surveys, periodic review of pregnancy tracking logs routinely filled by MHWs and HWs will provide further information regarding the access to ANC, labor and delivery, and postnatal interventions. For each pregnancy attended by an MHW and/or HW in the program areas, a pregnancy record is generated for tracking the progress of women through pregnancy, and to provide guidelines for delivery of ANC, management of the labor/delivery, and tracking of postpartum care. The review of clinical records collected during the service provision activities will provide for construction of a number of indicators for monitoring program progress. Access to reproductive health services (antenatal, peripartum, postnatal), including components of BEOC, will be estimated. These charts will also facilitate estimation of the proportion of total deliveries in catchment areas attended by MOM workers, and the proportion of births requiring each BEOC intervention. The extraction of data from these pregnancy records will also allow comparison of health outcomes between areas and over time. These include post-partum hemorrhage, puerperal sepsis, complications from abortion, malaria during pregnancy, and case fatality for pregnancy complications managed by MOM health workers. Early neonatal mortality will also be estimated from these pregnancy records and provides an opportunity for internal validation of the NMR data estimated from the clustersample surveys described above.

Basic forms are also used by TBAs in a prospective manner to collect information on pregnancies, live births, and deaths during the first month of life. These simple, picture-based forms have been developed and implemented in a range of Thai/Burma border TBA programs



[26] and are based on previous picture-based forms used in program in Cambodia and Vietnam. This third source of data on vital events provides yet another point for triangulation of data, further allowing for internal validation. In this IDP setting, opportunities for real-time supervision of data collection and other monitoring and evaluation tasks is limited, and such replication of data is essential for increasing confidence in the estimation of outcome indicators.

TBAs learn to use innovative pictorial data collection form

In order to shed light on the actual implementation of this project in the field, focus group discussions are held with MHWs during the follow-up trainings held in Thailand every 6 months. These return trips back into Thailand provide a unique opportunity to collect detailed

information directly from these workers regarding the challenges they have faced in the prior period. The MOM project is taking a qualitative approach to collecting this information, initiating focus group discussions among the MHWs in order to share this information. The major goal of this component is to provide additional contextual information about the program that will supplement the quantitative information collected through surveys and patient record forms. The broad topics to be discussed in these discussions include relationships with community, HW and TBA trainings, problems and successes associated with the delivery of basic obstetric interventions used in the field, supplies, communication, and highlighting illustrative case reports. The information gathered will be used to refine the content and schedule for the follow up training, tailoring workshops to meet the most pressing issues identified during discussions.

Finally, to ensure that there is feedback from and development of the MOM Project office staff, a series of job performance and satisfaction reviews are conducted every six months. A main focus of the MOM Project, as key asset to its success, is the staffing of the office by local individuals familiar with the language, customs, location, and nature of the cross border clinics. The aim of the MOM Project since its start has been to increase the capacity of these individuals to take on greater responsibility for this and other projects related to their parent organizations. Job performance review allows staff members to express concerns or thoughts on program implementation and development. In addition, the documentation of staff plans and goals allows the project overall to find ways to address their specific needs for training and development.

VI. CONCLUSION

More than 500,000 persons are internally displaced in eastern Burma and over 3000 villages in eastern Karen state have been destroyed since 1996 [2]. Risk of maternal, infant, and child mortality in the Thailand/Burma border region are substantially higher than elsewhere in southeast Asia [10, 11] and the military junta actively prevents humanitarian assistance organizations from reaching the most needy [5, 8]. The failed health system (Burma ranked 190th of 191 countries [27]) and conflict with ongoing population movement in eastern Burma presents substantial logistical barriers to health care delivery through standard models. Here, and in other similar IDP settings new strategies for delivering reproductive health care are urgently needed. We have described here one potential model: a unique network of reproductive health providers developed and piloted by a collaboration of four ethnic minority health organizations in eastern Burma.

Challenges and Lessons Learned

The MOM Project faced challenges from the start of training. During MHW training, staff and the trainer were working with a group of ethnically and linguistically diverse medics. Although Burmese was the common language for instruction, some medics were only able to fully comprehend information in their ethnic language. For that, the program staff and trainer created small study groups, as well as translating materials into the ethnic languages when appropriate. A further challenge was the concurrent development of the EmOC training curriculum during the actual training. This put a burden on the trainer that could have been avoided if a substantial amount of the curriculum had been developed prior to starting training and then adapted as needed.

The fact that office staff do not work full time on this project alone created some problems during start up of the work. All staff members have appointments on several projects in different offices. For this, the staff created a staff meeting schedule that was followed so that all members were in touch and able to communicate. In addition, email addresses were created and phones distributed to the program coordinators to increase ability to share information and coordinate.

During field implementation, MHWs faced the challenge of starting a new program, with procedures not seen before in their areas. In addition, some traditional practices and perceptions were contrary to educational messages being provided, especially in the area of family planning. Such obstacles were overcome through series of meetings with village leaders and community members. These meetings, both formal and informal, allowed for greater acceptance of the interventions by key individuals, who then help to disseminate information throughout the community. While MHWs still face challenges in implementing their work, with regard to traditional beliefs in particular, they continue to hold meetings and provide education.

Security, active conflict, and landmines posed significant barriers to the work of the MHWs. In many instances, MHWs were unable to reach villages in their target area because of SPDC troops and the inability to cross major roads or stretches of land. In such cases, MHWs

worked closely with HWs and TBAs from the inaccessible villages to make sure that some level of services were provided to the women in those areas, as well as documentation of their pregnancy and delivery with one of the above-mentioned monitoring tools. In addition, security for MHWs during travel to Mae Sot-based trainings and while at trainings proved to be a large expense, as well as causing stress to the medics who faced detention, arrest, imprisonment or worse if found by Burmese military troops during travel. In



addition, security is also an issue for MOM Project office staff, many whom do not have the documentation needed to stay and work in Thailand.

Successes

The MOM Project has successfully created curriculum in English, Burmese, and to a limited extent in Karen, for Emergency Obstetric Care (EmOC), TBA training, and HW training. The TBA training curriculum and data forms have become a widely used reference for groups along the border and the TBA training coordinator and MOM project staff have been asked several times to provide information, training, and advice to groups looking to improve and establish TBA programs in their organization.

A key program feature that has proven especially successful is mobility of services, thus shifting the focus from facility-based care, which is largely infeasible, to mobile in-home reproductive

health services including BEOC. This is necessary given that more permanent "bricks and mortar" type facilities are not possible in this setting; mobility of service provision is essential. During the devastating 2006-2007 escalation of the conflict in northern Karen State, the Burma military junta forced the already displaced population of one of the MOM Project sites (Na Yo Hta, Figure 1) to scatter once more into the surrounding jungle (KHRG). The central site being used by MHWs for coordination of activities, supplies, and training was burned by the military. MOM project workers moved with the population, and provided services during four months of displacement due to active fighting. Continuation of services under such conditions is only possible under a structure that emphasizes mobility of service provision, rather than centralized services that must be accessed *by* the population.

A second key feature that has proven successful is the multi-tiered approach to health providers described. All components of BEOC, focused ANC care, and other proven interventions are provided by more intensively trained workers, while lesser-trained workers can still contribute to overall coverage by providing a crucial subset of proven interventions. By actively promoting the roles of different levels of workers with variable capabilities and responsibilities, this model provides the flexibility necessary in a community-based model of reproductive health services. Given the substantial burden of mortality and morbidity facing women in this setting, this model may have important public health impact without comprehensive care (including cesarean section) or even complete coverage of BEOC and other proven interventions.

This approach reflects the realistic constraints of the setting, recognizes the integral role of a variety of care providers, including TBAs, and promotes a tiered-structure that may facilitate the progressive realization of more standard comprehensive models of reproductive health services. Evaluation of this program can provide important insights into the feasibility of this approach and may help guide the development of further context-specific strategies for increasing access to care in other conflict settings

VII. References

[1] UNHCR. Internally Displaced People: Questions and Answers; 2006.

[2] Thai Burma Border Consortium (TBBC). Internal Displacement in Eastern Burma - 2006 Survey; November 2006.

[3] Beyrer C, Suwanvanichkij V, Mullany LC, Richards AK, Franck N, Samuels A, et al. Responding to AIDS, tuberculosis, malaria, and emerging infectious diseases in Burma: dilemmas of policy and practice. PLoS medicine. 2006 Oct;3(10):e393.

[4] Karen Human Rights Group. [cited 11/23/07]; Available from: <u>http://khrg.org/</u>

[5] Stover E, Suwanvanichkij V, Moss A, et al. The Gathering Storm: Infectious Diseases and Human Rights in Burma; July 2007.

[6] ICRC. Myanmar: ICRC denounces major and repeated violations of international humanitarian law (6/29/07). [cited 11/23/07]; Available from:

http://icrc.org/web/eng/siteeng0.nsf/htmlall/myanmar-news-290607?opendocument

[7] MSF-France. Prevented From Working, the French Section of MSF Leaves Myanmar (Burma) (3/26/06). [cited 11/23/07]; Available from:

http://www.doctorswithoutborders.org/pr/2006/03-30-2006.cfm

[8] The Global Fund. Termination of grants to Myanmar. 2005 [cited November 14th, 2007]; Available from:

http://www.theglobalfund.org/en/media_center/press/pr_050819_factsheet.pdf

[9] Backpack Health Worker Team. Chronic Emergency: Health and Human Rights in Eastern Burma; 2006.

[10] Lee TJ, Mullany LC, Richards AK, Kuiper HK, Maung C, Beyrer C. Mortality rates in conflict zones in Karen, Karenni, and Mon states in eastern Burma. Trop Med Int Health. 2006 Jul;11(7):1119-27.

[11] Mullany LC, Richards AK, Lee CI, Suwanvanichkij V, Maung C, Mahn M, et al. Population-based survey methods to quantify associations between human rights violations and health outcomes among internally displaced persons in eastern Burma. Journal of epidemiology and community health. 2007 Oct;61(10):908-14.

[12] Internal Displacement Monitoring Centre. Internal Displacement: Global Overview of Trends and Developments in 2006. Geneva; April 2007.

[13] McGinn T. Reproductive Health of War-Affected Population: What do we know? . International Family Planning Perspectives December 2000;26(24).

[14] WHO. The World Health Report 2005: Make Every Mother and Child Count. Geneva; 2005.

[15] UNHCR Inter-Agency Working Group on Reproductive Health. Inter-Agency global evaluation of reproductive health services for refugees and internally displaced persons. Geneva; 2004.

[16] Reproductive Health Response in Conflict Consortium. The Field-friendly Guide to Integrate EmOC in Humanitarian Programs; Women's Commission for Refugee Women and Children: 2005.

[17] World Health Organization. World Health Statistics 2007. Geneva; 2007.

[18] Backpack Health Worker Team. Reproductive Health Survey Preliminary Report, July-December 2002.

[19] UNFPA. Maternal Mortality Update 2002: A focus on emergency obstetric care. New York, NY; 2003. [20] World Health Organization. The World Health Report 2005: Make Every Mother and Child Count. Geneva; 2005.

[21] Filippi V, Ronsmans C, Campbell OM, Graham WJ, Mills A, Borghi J, et al. Maternal health in poor countries: the broader context and a call for action. Lancet. 2006 Oct 28;368(9546):1535-41.

[22] UNFPA. Saving Mother's Lives: The challenge continues. New York, NY; 2004.

[23] Richards AK, Smith L, Mullany LC, Lee CI, Whichard E, Banek K, et al. Prevalence of plasmodium falciparum in active conflict areas of eastern Burma: a summary of cross-sectional data. Conflict and health. 2007;1:9.

[24] Khan KS, Wojdyla D, Say L, Gulmezoglu AM, Van Look PF. WHO analysis of causes of maternal death: a systematic review. Lancet. 2006 Apr 1;367(9516):1066-74.
[25] MAQ Exchange Curriculum. Antenatal Care: Old Myths and New Realities. Washington; 2001.

[26] Mullany LC, et al., Building Capacity for the Delivery and Assessment of Adapted Maternal Health Interventions for Internally Displaced Persons in Burma. 2004.

[27] UNDP. Human Development Indicators, Human Development Report. Oxford, New York; 2001.

VIII. Appendices

Appendix 1: Original MHW Training Outlines

October 2005 (MHW Theoretical and Practical Training)

- I. Introduction (**6hrs**)
- a. Introduction to Emergency Obstetric Care
- II. Female Anatomy/Physiology (6hrs)
- III. Normal Antenatal care (12hrs)
- IV. Normal Postnatal Care (9hrs)
- V. Neonatal Care (6 hrs)
 - a. Immediate Post Partum Normal
 - b. Immediate Post Partum Problems
- VI. Normal Labor and Delivery (30hrs)
 - a. Stages of labor
 - b. Diagnosing and assessing normal labor
 - i. Partograph
 - c. Support of the mother during labor
 - d. Active management of third stage of labor
- VII. Problems of Labor and Delivery (12 hrs)
 - a. Fetal Distress
 - b. Premature rupture of membrane
 - c. Prolapsed cord
 - d. Interuterine fetal death
- VIII. Emergency Obstetrics (102 hrs)
 - a. Prevention and Preparedness
 - b. Rapid Assessment
 - c. Shock
 - d. Bleeding
 - i. Early pregnancy
 - ii. Late Pregnancy
 - iii. Post partum
 - e. Hypertensive disorders and convulsion
 - i. Preeclampsia
 - ii. Eclampsia
 - f. Infection
 - i. Post abortal
 - ii. Early pregnancy
 - iii. Late pregnancy
 - iv. Post partum
 - g. Malaria/Fever
 - h. Episiotomy and repair of vaginal, cervical, and perineal tears
 - i. Manual Removal of Placenta
 - j. Manual vacuum aspiration
 - k. Vacuum extraction
 - 1. Antibiotic therapy

April 2006 (MHW Workshops)

- I. Training of Trainers (TOT) (12 hrs)
 - a. Preparing/conducting community meetings, HW and TBA training in field
 - b. Communication skills
 - i. Verbal/Non-verbal
 - ii. Difficult situations (ex: quiet audience)
 - c. Adult learning
- II. Blood Screening/Transfusion (22 hrs)
 - a. Overview of blood components
 - b. Recruitment and recording of donors
 - c. Screening
 - d. Pre-post screening counseling
 - e. Treatment
 - f. Transfusion
- III. Family Planning (**21.25 hrs**)
 - a. Benefits of FP
 - b. Overview and advantages/disadvantages of FP methods
 - c. FP Myths
 - d. Counseling
 - i. Importance of confidentiality
 - e. STIs
 - i. Signs/Symptoms
 - ii. Treatment
 - iii. HIV

Appendix 2

Weekly student report for practical training report

Name	Area		Site			Worker ID				
------	------	--	------	--	--	-----------	--	--	--	--

Group_____

Reporting period _____

Date	Name of patient	Diagnosis	EMOC Services* Witnessed/provided	Supervisor signature & remark

*Note Type of EmOC services to report

- (1) Antibiotic treatment
- (2) Oxytocic drugs used
- (3) Anticonvulsant treatment
- (4) Manual removal of placenta
- (5) MVA
- (6) Vacuum delivery

Appendix 3: HW Training Outline

HW Training Outline

- I. Introduction to Basic Emergency Obstetric Care (3 hrs)
- II. Sterilization Techniques (6 hrs)
- III. Female anatomy (**6hrs**)
 - a. Anatomy
 - b. Physiology
- IV. Antenatal Care (24 hrs)
- VI. Postnatal Care (24 hrs)
- VII. Neonatal Care (18hrs)
- VIII. Normal Labor and Delivery (30hrs)
 - a. Stages of labor
 - b. Diagnosing and assessing normal labor
 - c. Support of the mother during labor
 - d. Active management of third stage
- IX. Emergency Obstetrics (66 hrs)
 - a. Rapid Assessment
 - b. Shock
 - c. Bleeding
 - i. Early pregnancy
 - ii. Late Pregnancy
 - iii. Post partum
 - d. Hypertensive disorders and convulsion
 - i. Preeclampsia
 - ii. Eclampsia
 - e. Infection
 - f. Malaria/Fever

Appendix 4: TBA Training Outline (7-days)

- I. Introductions
 - a. Role of TBA in MOM Project and job description (1 hour)
 - b. Introduction to data forms (1 hour)
 - c. Pre-test (1 hour)
 - d. Information on maternal and neonatal mortality and morbidity(40 minutes)
- II. Pregnancy
 - a. Signs of pregnancy (15 minutes)
 - b. Functions of placenta (15 minutes)
- III. Antenatal Care
 - a. Objectives of antenatal care (3 hours)
 - b. Normal problems during pregnancy and danger signs (1 hour)
 - c. Nutrition and self care (1 hour)
 - d. History taking, physical exam and screening for existing conditions (30 minutes)
- IV. Delivery
 - a. Importance of aseptic delivery (1 hour)
 - b. Pre-delivery preparation for TBA (20 minutes)
 - c. First stage of delivery (1 hour)
 - d. Second stage of delivery (1 hour)
 - e. Third stages of delivery (1 hour 45 minutes)
 - f. Danger signs during delivery and referral (1 hour)
- V. Post delivery
 - a. Cord infection (30 minutes)
 - b. Immediate neonatal care (3 hours)
 - c. Post partum follow-up care (2 hours and 30 minutes)
- VI. Other issues
 - a. STI and HIV/AIDS (45 minutes)
 - b. Childhood diarrhea and home care/ORS (20 minutes)
 - c. Family planning (1 hour)
 - d. TBA communication and work with community and other health organizations (40 minutes)
 - e. Data collection (3 hours)
- VII. Post test (1 hour)
- VIII. Knowledge sharing (1 hour)

Appendix 5: MHW Follow-up Training Outlines

February 2007

- I. Qualitative Information Collection (**19 hrs**)
 - a. Focus Groups
 - b. Individual Interviews
 - c. Community Meeting
- II. Discussion of HWs in the field (12 hrs)
 - a. Role in MOM Project
 - b. Training
- III. Discussion of TBAs in field (12 hrs)
 - a. Role in MOM Project
 - b. Training
- IV. Infection Prevention/Universal Precaution (6 hrs)
- V. Family Planning (**12 hrs**)
 - a. Review of methods
 - b. Review of STI prevention/treatment
 - c. Review of counseling
- VI. Malaria in Pregnancy (6 hrs)
- VII. Emergency Obstetric Care Review and Practice (33 hrs)
 - a. MVA
 - b. Misoprostol
 - c. Magnesium
 - d. Manual Removal of Placenta
 - e. "Kiwi" cup for Vacuum Extraction
 - i. Overview of use, assembly, cleaning
 - ii. Advantages/disadvantages
 - iii. Practice
- VIII. Blood Screening and Transfusion (12 hrs)
 - a. Review
 - b. Discussion of record-keeping in the field
 - Review of data collection forms used by MHWs in field (12 hrs)
 - a. Pregnancy Record Form
 - b. Field Report Form
- X. Supplies (12 hrs)

IX.

a. Discussion/Distribution

October 2007

- I. Qualitative Data Collection (8 hrs)
 - a. Individual Interview
 - b. Focus Group Discussion
 - c. Case Report Form
- II. Essential Neonatal Care (**3 hrs**)
 - a. Skin-to-Skin/Kangaroo Care
 - b. Delayed bathing
 - c. Warming
 - d. Cord Care
- III. Breastfeeding (3 hrs)
 - a. Immediate/Exclusive Breastfeeding
 - b. Complementary feeding
 - c. Dealing with breastfeeding problems
- IV. Counseling (9 hrs)
 - a. Improved communication/counseling techniques
- V. STI/HIV (3 hrs)
 - a. Prevention
 - b. Dealing with stigma
- VI. Training of Trainers (12 hrs)
- VII. Review of protocols (4 hrs)
 - a. Misoprostol
 - b. Malaria in pregnancy
 - c. Magnesium
- VIII. Blood Screening and Transfusion (6 hrs)
- IX. Case Studies from the field (6 hrs)
 - a. Discussion of actual difficult cases from the field
- X. Data collection (8 hrs)
 - a. Review of data forms
 - b. Case studies based on actual mistakes in data forms
 - c. Importance of record-keeping in the field
 - d. Introduction of optional family planning record card

Appendix 6: TBA Follow-up Training Outline (3-day)

- I. Introductions
 - a. Role of TBA in MOM project and job description (30 minutes)
 - b. Review of TBA work (1 hour)
 - c. Pre-test (1 hour 30 minutes)
 - d. Information on maternal and neonatal mortality and morbidity (15 minutes)
- II. Antenatal Care
 - a. Objectives of antenatal care (1 hour)
 - b. Normal problems during pregnancy and danger signs (1 hour)
 - c. Nutrition and self care (45 minutes)
 - d. History taking, physical exam and screening for existing conditions (1 hour)
- III. Delivery
 - a. Importance of aseptic delivery (30 minutes)
 - b. Stages of delivery (1 hour 30 minutes)
 - c. Awareness of danger signs during delivery and referral (1 hour)
- IV. Data forms (1 hour 30 minutes)
- V. Post delivery
 - a. Cord infection (30 minutes)
 - b. Immediate neonatal care (1 hour)
 - c. Post partum follo-up care (1 hour)
- VI. Other issues
 - a. Childhood diarrhea and home care/ORS (20 minutes)
 - b. Family planning (1 hour)
 - c. Post abortion care (35 minutes)
- VII. Post test (1 hour)



Appendix 7: Additional Photos of the MOM Project

Workers build a mobile clinic



Site visit to assess situation in the field



Workers resourcefully use objects found in the field for training demonstrations. Here a cardboard box is used to demonstrate handling delivery.



Supplies ready to be carried back into the field are inventoried and arranged by site.



MOM Project is a collaborative effort between local staff based both in the field and in the central office in Thailand, as well as with individuals from international organizations who provide technical support and capacity building.



Villagers support the MOM Project by assisting with the carrying of supplies from central distribution locations to sites in the field.