



JHPIEGO An Affiliate of  
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A GLOBAL LEADER IN IMPROVING HEALTH CARE FOR WOMEN AND FAMILIES

developing  
regional experts  
in essential maternal and  
newborn care

The MNH Program Experience



Maternal  
& Neonatal  
Health



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The Maternal and Neonatal Health (MNH) Program is committed to saving mothers' and newborns' lives by increasing the timely use of key maternal and neonatal health and nutrition practices. The MNH Program is jointly implemented by JHPIEGO, the Johns Hopkins Center for Communication Programs, the Centre for Development and Population Activities, and the Program for Appropriate Technology in Health.  
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JHPIEGO, an affiliate of Johns Hopkins University, builds global and local partnerships to enhance the quality of health care services for women and families around the world. JHPIEGO is a global leader in the creation of innovative and effective approaches to developing human resources for health.  
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Published by:  
JHPIEGO  
Brown's Wharf  
1615 Thames Street  
Baltimore, Maryland 21231, USA

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This publication was made possible through support provided by the Maternal and Child Health Division, Office of Health, Infectious Diseases and Nutrition, Bureau for Global Health, U.S. Agency for International Development, under the terms of Award No. HRN-00-98-0043-00. The opinions expressed herein are those of the author(s) and do not necessarily reflect the views of the U.S. Agency for International Development.

*This report describes the Maternal and Neonatal Health (MNH) Program initiative to develop groups of regional experts in maternal and newborn health in Africa, Asia, and Latin America and the Caribbean; summarizes lessons learned and recommendations to inform similar initiatives; and, through selected vignettes, presents the experts' extraordinary accomplishments that are improving the quality of healthcare for women and newborns.*

## INTRODUCTION

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“The creation of a thousand forests is in one acorn....”

Ralph Waldo Emerson  
(1803–1882), U.S. essayist,  
poet, philosopher. “History,”  
Essays, First Series (1841,  
repr. 1847)

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Between 2000 and 2003, the MNH Program strengthened the clinical, training, and leadership skills of regional cadres of physicians and midwives to support their commitment to improving maternal and newborn care. The result of this global safe motherhood investment is a network of 43 physicians and midwives from 18 countries in Africa, Asia, and Latin America and the Caribbean (LAC) who are now implementing global maternal and newborn health standards of care, advocating for evidence-based practices, and scaling up Program initiatives in more than 43 countries.

The Regional Expert Development Initiative (REDI) grew out of the MNH Program strategy to upgrade and support the skills of maternal and newborn healthcare providers in a broad package of essential maternal and newborn care interventions that are evidence-based and build on global lessons learned about what works to save the lives of mothers and newborns. The challenge faced by the Program was how to get a large amount of information to as many providers as possible, as soon as possible, with limited financial and human resources.

To meet this challenge, the MNH Program designed an intervention based on Rogers’s diffusion of innovations (DoI) theory (Rogers 1983). Although this theory was conceived for technological ideas or techniques, its elements can be applied to dissemination and implementation of new healthcare practices as well (Berwick 2003; Sanson-Fisher 2004).

Important roles in the innovation process include<sup>1</sup>:

- Opinion leaders, who have informal influence over the behavior of others
- Change agents, who positively influence innovation decisions by mediating between the change agency and the relevant social system
- Change aides, who complement the change agent by having more intensive contact with clients

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<sup>1</sup> Adapted from: Clarke R. 1999. *A Primer in Diffusion of Innovation Theory*. Available at: [www.anu.edu.au/people/Roger.Clarke/SOS/InnDiff.html](http://www.anu.edu.au/people/Roger.Clarke/SOS/InnDiff.html).

The MNH Program plan was to invest in change agents in Africa, Asia, and LAC who would be able influence opinion leaders, train other providers or “change aides,” and promote evidence-based maternal and newborn healthcare practices. The sequenced series of competency-based learning activities was parallel to the stages through which an innovation passes from theory into practice (Rogers 1983) (see **Table 1**).

**Table 1. Regional Expert Development Activities Compared to Stages of Innovation**

<b>REDI DEVELOPMENT ACTIVITIES</b>	<b>STAGES OF INNOVATION</b>
Knowledge update Clinical skills standardization Clinical Training Skills training Advanced Training Skills training	Knowledge (being exposed to a new idea or practice and understanding it)  Persuasion (forming a favorable attitude to the new practice)
Development of action plans	Decision (committing to adopting/using the new practice)  Implementation (putting the new practice to use)
Followup visits	Implementation (putting the new practice to use)

The comprehensive development approach described in detail in Part 2 is an example of a multifaceted intervention using interactive, hands-on, small-group sessions. These interventions have been shown to be the most consistently effective way to facilitate professional behavior change (Bero 1998; Grimshaw et al. 2001; Grol and Grimshaw 2003).

An essential element of the MNH Program approach was helping participants identify barriers to changing clinical practices and devise tactics to cope with them. Barriers occur at all levels of the healthcare system (Cabana et al. 1999 cited in Grol and Grimshaw 2003), including the individual healthcare professional and the facility. Individual barriers include (Grol and Grimshaw 2003; Powell 2003):

- Lack of knowledge about the evidence
- Disagreement with the evidence
- Lack of motivation (how will this change benefit me?)
- Inconvenience caused by disruption in routine
- Heavy workload and lack of time
- Lack of resources
- Cultural beliefs and practices
- Traditional and authoritarian beliefs and practices (“this is the way we’ve always done it”)
- Perception that implementing evidence-based medicine threatens healthcare professionals’ freedom to practice as they think best (Garner et al. 1998)

Grol and Grimshaw (2003) state that even when healthcare professionals know the evidence and wish to change individual practices, it is difficult to do so in the face of institutional or organizational barriers that include:

- Lack of institutional policies
- Lack of accountability among members of the healthcare team
- Lack of resources and facilities

Inefficient systems lacking incentives to provide effective care and other political and economic constraints also impede implementation of evidence-based practice in developing countries (Garner et al. 1998).

A key element in helping participants think about how to overcome such barriers was the development and implementation of structured action plans. These plans had the added value of allowing participants to first experience change at the individual level and be empowered by their success to facilitate changes in clinical practices at a broader level. In all of their activities, experts modeled the interactive, face-to-face learning approach used in the REDI.

The MNH Program considers these experts vital for carrying out two of its chief responsibilities as the United States Agency for International Development (USAID) global flagship program in maternal and newborn health—disseminating and implementing global maternal and newborn health standards of care, and scaling up Program practices, tools, and approaches.

The Program has a well-defined strategy for implementing standards of care that follows a clearly delineated process (JHPIEGO/MNH Program 2001) and draws on roles similar to those described in DoI theory, as shown in **Table 2**.

**Table 2. Roles in Developing and Implementing Global Standards of Care for Essential Maternal and Newborn Care**

MNH PROGRAM STRATEGY	DIFFUSION OF INNOVATIONS THEORY
Stakeholders for advocacy and political support	Opinion leaders
Trainers and preservice faculty for dissemination and implementation	Change agents
Service providers for use in daily practice	Change aides

These roles are integral to increasing a program’s impact while maintaining its quality, or “scaling up” (Robb-McCord and Voet 2003). Partnerships and collaboration are central to the success of the MNH Program. The regional experts were developed to help expand the reach of the Program in scaling up its practices and approaches at the global,

regional, and country levels. Their success in this regard is demonstrated by the work they have done beyond the walls of their institutions and their country boundaries. As shown in **Table 3**, regional experts have worked in more than 25 countries (other than their own) under the auspices of organizations such as Columbia University’s Averting Maternal Death and Disability (AMDD) Program, Family Health International, IntraHealth International, the Pan American Health Organization (PAHO), Save the Children, UNFPA, UNICEF, and the West Africa Health Organization (WAHO).

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**Quantitative scale-up**—increasing the numbers of clients reached by a program

**Functional scale-up**—expanding program breadth

**Political scale-up**—addressing national-level barriers to effective programs and services

**Organizational scale-up**—improving an organization’s ability to continue to support an initiative in an effective and sustainable manner

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**Table 3. Regional Experts' Contributions to MNH Program Scale-Up**

<b>COUNTRIES WHERE EXPERTS HAVE WORKED (OTHER THAN THEIR OWN)</b>	<b>SUPPORTING ORGANIZATION</b>
Afghanistan	AMDD/UNICEF
Dominican Republic	Family Health International
East Timor	UNICEF, UNFPA
Guinea	Save the Children
Haiti*	MNH Program
Honduras*	MNH Program, PAHO
Mali	Save the Children
Nicaragua	IntraHealth International
Peru*	AMDD
<b>COUNTRIES REACHED THROUGH REGIONAL INITIATIVES</b>	<b>SPONSORING ORGANIZATION</b>
Africa Ethiopia Ghana Kenya Mozambique Nigeria Uganda*	AMDD, WAHO Emergency obstetric care knowledge update (KU) and clinical skills standardization (CSS) for 18 physicians and midwives from six countries
Benin Burkina Faso* Burundi Cameroon Côte d'Ivoire Guinea Mali Mauritania Niger Senegal Togo	MNH PROGRAM/UNICEF Training in prevention and treatment of malaria during pregnancy, including preparation of country action plans for 27 providers and program managers from eight countries  MNH/BURKINA FASO, WAHO Conference to disseminate best practices in maternal and newborn health and develop action plans for 84 participants from 11 countries  Santé Familiale et Prévention du SIDA/MNH Program Review and development of Emergency Obstetric and Neonatal Care curriculum for medical and midwifery schools in West Africa
South Asia Afghanistan Bangladesh Bhutan India Nepal* Pakistan	AMDD, UNICEF/Regional Office for South Asia (ROSA) Emergency obstetric care training for seven teams from six countries; teams comprised 24 physicians, midwives, and anesthetists (training strategy and approach based on REDI model)

\* Country with regional expert

These experts now have the skills to critically evaluate the evidence basis for changes in practices. Their skills have been standardized, and they are proficient in key clinical skills, which they can transfer to their own and others' workplaces. And they are advocates and agents for improving practices in their institutions, communities, and beyond. The regional experts are accelerating change to better practices in their own institutions and countries within their regions.

## **PART 1. EXPERTS AND THEIR ACCOMPLISHMENTS**

The MNH Program defined an expert as a nurse, midwife, or physician who, upon completion of the expert development process, would:

- Advocate for needed changes in maternal and newborn healthcare practices;
- Articulate the evidence basis for such changes;
- Practice the evidence-based clinical skills acquired during training;
- Facilitate local adaptation and adoption of these practices in their own environment;
- Teach at the preservice level and train at the inservice level; and
- Provide leadership in their respective institutions, countries, and regions to improve maternal and newborn healthcare.

As the following vignettes show, the REDI has proven that a systematic methodology can create leaders and catalyze change in a short period of time. These individuals are better able to influence attitudes and change practices not only because they have the status and authority as “experts,” but more important, because they are working in settings where new evidence-based practices have been implemented successfully.<sup>2</sup>

### **Africa**

Mildred Kabasonga and Prossy Namatovu work at the Mulago Hospital in Kampala, Uganda—a facility that averages between 18,000 and 22,000 births annually (almost 60 per day). Following their participation in the REDI and by working together, they have improved the quality of care for women giving birth in the midwifery-run labor ward, and strengthened the preservice clinical practicum for midwifery and medical students at the same time. At this national teaching and referral hospital, they pursued and received funding from the Rockefeller Foundation to conduct short courses to update the clinical skills of preservice midwifery instructors. In addition, they advocated for and helped to establish a mandatory competency-based practicum for medical students. Thanks to their efforts, students are now required to become competent in normal

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<sup>2</sup> These data were collected by MNH Program staff through questionnaires and interviews during REDI activities, and through later personal communications with the regional experts.

labor and birth before being permitted to work in the ward where complications are treated. And because these new practices are part of the preservice education programs, they are institutionalized and sustainable.

In Burkina Faso, regional experts Drs. André Bazié and Blami Dao have been the linchpins of many MNH/Burkina Faso activities—influencing policy dialogue with the Ministry of Health to adopt the modified World Health Organization (WHO) partograph as part of the national policies, norms, and protocols for essential and emergency obstetric care; training a core group of 20 trainers representing all 10 regions of the country in use of the partograph; and conducting knowledge updates (KUs) for midwives and obstetrician-gynecologists from the Ouagadougou and Bobo Dioulasso national teaching hospitals, as well as district chief medical officers from four districts.

In one of several examples of South-to-South activities undertaken by experts, Drs. Bazié and Dao have helped the MNH Program in Haiti develop L'Hôpital Universitaire Justinien, in Cap Haïtien, as a model training site for essential maternal and neonatal care. First, Dr. Bazié was part of a team conducting an initial site assessment and clinical skills standardization (CSS) workshop. Dr. Dao and the Director of the Midwifery School in Ougadougou, Mrs. Aoua Zerbo (whom Dr. Dao trained following his regional expert experience), then spent a month in Haiti conducting a needs assessment and helping maternity director Dr. Cyril Leconte and staff to develop action plans for site strengthening. Dr. Dao and Mrs. Zerbo noted, for example, that antenatal care was being offered only three times a week, and that the waiting time for clients was excessive. Following their suggestion, antenatal care is now being provided daily and, as a result of a staff initiative, client waiting time has been reduced by 50 percent. Other improvements in services include:

- The hospital instituted a policy requiring that one healthcare provider be assigned to each client, thereby helping to ensure continuity of care and woman-centered care.
- The partograph is now used during labor, and immediate skin-to-skin contact with the mother—including women who have had cesarean sections—is introduced directly after birth.
- Episiotomy is no longer a routine procedure.
- Active management of the third stage of labor has replaced “traditional” delivery of the placenta.
- Infection prevention practices have been improved.

The physician-midwife team also trained four physicians, one nurse, and two midwives, who later helped train all of the maternity staff at the hospital.

Mary Jonazi, a midwife expert who is now Director of Nursing Services for the Queen Elizabeth Central Hospital, Blantyre, Malawi, was selected by the Academy for Educational Development/LINKAGES to visit a project in Ndola, Zambia, to learn more about prevention of mother-to-child transmission (PMTCT) of HIV. This experience, combined with her regional expert training, led to her invitation from the Malawi National AIDS Commission to contribute technical information on integrating infant feeding practices into the Malawi national guidelines for PMTCT.

In her position as Director of Nursing Services, Ms. Jonazi coordinates nursing services across all sections of the hospital, and has oversight responsibility for the training, on-the-job support, and refresher courses for all of the healthcare workers other than doctors. Ms. Jonazi also serves in an advisory capacity for the Safe Motherhood Project funded by the U.K. Department of International Development. These responsibilities provide a platform for institutionalization of the evidence-based best practices she learned during the REDI. Her experiences have been the basis for presentations on trainer development in Africa at the International Confederation of Nurse-Midwives conference in Vienna in 2002, and at the Africa regional conference Training in Africa: Best Practices, Lessons Learned and Future Directions, in Lusaka, Zambia, in 2003.

Like many of the individuals selected for the REDI, Dr. Sylvia Deganus was already a leader in her country and region. As head of the Obstetrics and Gynecology unit of the Tema General Hospital, Dr. Deganus changed what she called “the factory assembly-line approach” to antenatal care at Tema by creating private areas for patient care and having one nurse provide all of a woman’s services during each visit. Using what she learned during her REDI experience, Dr. Deganus was able to introduce an emergency triage system. She reports that even though the system could still be improved, it has resulted in a more consistent supply of drugs for the treatment of eclampsia and postpartum hemorrhage in a region that has one of the highest mortality rates in Ghana. She has set up weekly audit meetings to review maternal deaths, and these meetings have become learning opportunities for staff. As a member of a WHO Technical Group and a member of the editorial review committee of the African Journal of Reproductive Health, she is well-positioned to continue her advocacy for evidence-based maternal and newborn health.

## **Asia**

The Koshi Zonal Hospital (KZH) in Biratnagar, Nepal, is now a midwifery refresher training site in support of His Majesty’s Government of Nepal Safe Motherhood program, due in large part to the institutional vision of obstetrician-gynecologist and MNH Program regional expert Dr. Kusum Thapa. The KZH trains primarily auxiliary nurse-midwives

who staff provincial and district-level facilities in the Eastern Tarai region. The hospital is also a clinical practice site for preservice nursing students from Tribhuvan University Teaching Hospital in Kathmandu and a number of private campuses in Biratnagar, including Bachelor of Nursing and Master's level students. The majority of nurses trained at KZH will return to sites where there are no doctors; thus, these nurses will take the lead role in service provision in the Tarai region, where 43.6 percent of the country's population lives.

Immediately following her participation in the KU/CSS, Dr. Thapa began working to institutionalize use of the partograph, active management of the third stage of labor, magnesium sulfate for management of eclampsia, and improved infection prevention practices at KZH. She trained 40 staff members, including preservice nurse tutors and local maternal and child health worker trainers, recognizing the need to have consistent teaching of evidence-based practices at all levels. Her coaching of the nursing staff in the use of the partograph resulted in their realizing that the partograph ultimately saved them time and work (thus again confirming that change is easier when people can see how it benefits them individually). She also improved newborn care practices, including warming and wrapping of the baby, immediate breastfeeding, and delayed bathing, important in a country with an infant mortality rate of more than 70/1,000 births.

The presence of Dr. Thapa as an on-site change agent was invaluable in terms of building an institutional vision for change, in order to establish KZH as a training site. Since introducing active management of the third stage of labor, Dr. Thapa has documented a decrease in the number of postpartum hemorrhage cases from 48 of 3,539 births during the period September 2000 to August 2001 to 11 of 4,036 births during the period September 2001–August 2002 (Thapa 2004).

Rumah Sakit Ujung Berung (RSUB), a city hospital in Bandung, Indonesia, has approximately 100 births per month, and before Dr. Purnama Pung's participation in the REDI, staff there did not use the partograph during labor and routinely performed episiotomies. In 2002, after Dr. Pung introduced evidence-based practices at RSUB, 59 percent of births were monitored using the partograph and only 9 percent of women had episiotomies. The hospital is a clinical training site for the Hasan Sadikin Medical School, and Dr. Pung convinced the school to double the length of the obstetrics/gynecology rotation. The clinical rotation is now 4 weeks long and includes basic obstetric care as well as emergency care.

Dr. Pung has embraced the concept of “woman-centered care” and, despite limited space, has created private areas for women in the obstetric care area of the hospital. Although he encountered resistance in trying to change the behavior of his colleagues (in improving infection prevention practices and using a focused antenatal care approach, for example),

Dr. Pung says, “The way I overcome these problems is by being a role model for all of my staff.” He has set up a makeshift classroom in one of the hospital’s wide corridors so that he can conduct informal training for residents and hospital staff. He uses every opportunity, he says, to discuss the new practices with his colleagues.

At the Bandung Academy of Midwifery, one of six midwifery schools in West Java, P. Corry Sihotang and Ina Yuniati are incorporating evidence-based knowledge and skills into the curricula of the D3 (midwifery) and D4 (midwifery teachers’) programs. There are 80 graduates in the D3 and 120 graduates in the D4 programs annually. The work of these midwives is thus contributing to the Government of Indonesia’s focus on bringing high-quality care to the community in the form of skilled *bidan di desa* (community-based midwives).

Dr. Pung and midwife Yuniati worked together as a team during the clinical portion of the REDI. Most of the group had never worked in physician-midwife teams before, and Ms. Yuniati’s willingness to share her knowledge, and Dr. Pung’s supportive attitude and respect for the midwife’s perspective, were vital in showing the group how a doctor and midwife working as a team could provide better care by drawing on the other’s experience and expertise.

In South Asia, the entire REDI training approach was adapted to train physician, midwife, and anesthetist teams from six countries for Columbia University’s Averting Maternal Death and Disability (AMDD) Program.

## **Latin America and the Caribbean**

The Centro Latinoamericano de Perinatología y Desarrollo Humano (CLAP) is a regional research and training institute comprising the Pan American Health Organization (PAHO), the Ministry of Public Health of Uruguay, and the University of Uruguay. The main objective of CLAP is to improve maternal and child health in the LAC region by helping countries to independently identify and find solutions to major perinatal and child health problems. Training of health personnel in evidence-based medicine is implemented through the network of associated centers. Regional experts Drs. Gonzalo Sotero and Gerardo Viturera have long-standing ties to CLAP, as both are staff members of the University of Uruguay teaching hospital Centro Hospitalario Pereira Rossell. In June and July 2004, they will conduct a double-blind study in 24 hospitals in Argentina and Uruguay on the effectiveness of competency-based training for maternal and newborn healthcare. The results of this study will help CLAP introduce competency-based clinical training activities into its training initiatives.

In Paraguay, Peru, and soon the Dominican Republic, management of obstetric emergencies is being strengthened through the efforts of Dr. Vicente Bataglia of Paraguay.

As a result of Dr. Bataglia's implementation of evidence-based practices at Hospital Nacional de Paraguay (a CLAP collaborating center), the Ministry of Health adopted the WHO manual *Managing Complications in Pregnancy and Childbirth (Manejo de las complicaciones del embarazo y el parto)* as the national protocol for Paraguay. The MOH printed and disseminated 1,000 copies of the manual throughout the country. Dr. Bataglia was instrumental in launching it throughout Paraguay, presenting the evidence for the practices forming the basis of the manual at seven of the eight official launches.

Sharing his expertise beyond Paraguay, Dr. Bataglia conducted an external clinical support visit for the Obstetric Emergencies project implemented by CARE (with support from the AMDD Project) in Ayacucho, Peru. In this region, located in the central highlands of the Andes, CARE is working to improve the quality of emergency obstetric care at health centers and hospitals in the cities of Ayacucho and Huanta. Dr. Bataglia worked with an incountry clinical supervisory support team to assess the knowledge, clinical skills, and performance of providers in the obstetrics/gynecology departments of these hospitals.

Dr. Bataglia knows that the best way to change practices is to demonstrate the merit of the new practice. During clinical training he was conducting at a CLAP center in Honduras in safer birth practices, including active management of the third stage of labor and restricted use of episiotomy, an adolescent gave birth to a 4,200 g baby without an episiotomy and without any laceration. This successful demonstration of an evidence-based practice convinced staff more than any classroom discussion ever could that episiotomies are rarely necessary.

Most recently, Family Health International selected Dr. Bataglia to train six trainers in the Dominican Republic as part of the USAID bilateral project strategy that is supporting HIV/AIDS prevention and care, child survival, and reproductive health/family planning initiatives. These trainers will then train an estimated 160 physicians, nurses, and nurse auxiliaries from 10 hospitals, with the goal of upgrading their emergency obstetric care services. The training will be based on the emergency obstetric care curriculum developed by the JHPIEGO/MNH Program for AMDD.

In 2001, the Government of Bolivia, with the technical assistance of MNH/Bolivia and USAID, approved Ministerial Resolution No. 496, which makes mandatory the use of 18 evidence-based practices for maternal and newborn health, including active management of the third stage of labor and restrictive use of episiotomy. In 2003, the MOH appointed regional expert Dr. Franz Conchari as the official maternal and

health trainer at the National Bureau for Health Services Development. This Bureau is responsible for the dissemination and implementation of the technical and clinical aspects of the Ministerial Resolution. In addition to training healthcare providers in these practices, Dr. Conchari has trained four physicians as additional trainers and helped the MOH develop three sites as national clinical training facilities. Thus, the efforts of a single expert have far-reaching consequences in a country with a maternal mortality ratio of 390 maternal deaths per 100,000 live births—after Haiti, the highest in the western hemisphere.

Drs. Julio Aguilar Franco and Luis Alberto Távora, physicians from Peru, are training faculty in nearly all the schools of medicine (23) and professional midwifery (25) in Peru. Through this work, accomplished without the support of an MNH Program country office, evidence-based practices will spread to all of the hospitals and clinics where graduates ultimately will practice.

As part of MNH Program activities, Drs. Ilse Santizo and Fredy Chuy from Guatemala instituted a cross-border initiative by conducting training to support the Performance and Quality Improvement process at five key hospitals in Honduras. This initiative resulted in a stakeholders' meeting in Honduras attended by the Guatemalan Vice-Minister of Health and the Director of the MNH/Guatemala Program, the Honduran Vice-Minister of Health/central level, regional and hospital directors, and representatives from cooperating agencies. Potential future cross-country initiatives include establishment of a bi-national accreditation process and inter-country training for medical and nursing students.

## **PART 2: THE REDI PROCESS AND LESSONS LEARNED**

### **Implementing the Initiative**

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“Leadership and learning are indispensable to each other.”

John F Kennedy (1917–1963), 35<sup>th</sup> President of the United States, in a speech prepared for delivery in Dallas the day of his assassination, November 22, 1963

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The MNH Program modeled the REDI on the well-established JHPIEGO trainer development process,<sup>3</sup> which uses a competency-based training approach to turn a proficient clinician into an advanced trainer. This approach has three primary components: KU and CSS, development and practice of clinical training skills (CTS), and development and practice of advanced training skills (ATS). To help ensure application of new knowledge and skills to the workplace, we incorporated Transfer of Learning<sup>4</sup> principles such as development of an action plan, followup visits to participants' job sites 3–4 months after the CSS, and active collaboration with supervisors. And, to help participants

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<sup>3</sup> Sullivan R et al. 1998. *Clinical Training Skills for Reproductive Health Professionals*, second edition. JHPIEGO: Baltimore, MD.

<sup>4</sup> Transfer of learning is defined as ensuring the knowledge and skills acquired during a learning intervention are applied on the job. The goal is for learners to transfer 100 percent of their new knowledge and skills to their jobs, resulting in a higher level of performance and an improvement in the quality of services at their facilities. (PRIME II and JHPIEGO. 2002. *Transfer of Learning: A Guide for Strengthening the Performance of Health Care Workers*. Intra: Chapel Hill, NC.)

become “change agents” for improved maternal and newborn healthcare, a module on leadership and advocacy skills was added to the ATS course.

Logistically, implementing the REDI was a complex and challenging process. The 8–12 weeks of training took place over a 12-month period in each region, and required a total of 27 clinical and training skills trainers (15 MNH Program staff and 12 consultants) to conduct all activities across all regions (see **Appendix A**). Trainers conducting the followup visits were drawn from the pool of trainers conducting the KU/CSS in order to ensure consistency in knowledge and skill acquisition, application, and performance on the job.

Training skills trainers conducted the CTS and ATS courses. Only in LAC did the KU/CSS team also conduct any of the training skills courses (in this case, the ATS). An average of five trainers was needed for the KU/CSS, compared with three for the CTS and four for the ATS.

All but three of the consultants were from the regions in which they worked. To the extent possible, activities, and especially followup visits, were scheduled in conjunction with other program travel to the country or region, or incountry staff conducted the activity. In Asia, the Indonesian participants were included in CTS and ATS courses already planned as part of the MNH/Indonesia activities in order to integrate them into program activities for which they would be providing support in the future. The CTS and ATS courses conducted in Nepal for the remaining Asia participants included additional participants from other, related initiatives. Therefore, even though this increased the number of activities, it was possible to realize economies of scale and find opportunities to leverage training resources.

Although it took 3 years to complete the activities in all three regions, the 12-month schedule was met—on average, followup visits occurred 3 months after the KU/CSS, the CTS 2 months after the followup visits, and the ATS 7 months after the CTS.

### ***What We Learned***

Lack of a formal monitoring and evaluation plan designed from the beginning of the initiative hampered many aspects of tracking and reporting on progress. However, data collected on participant performance as part of the followup visits (see pages 19–23) provided adequate information from which to draw conclusions about the effectiveness of the intervention. The MNH Program staff continued to gather information on experts’ activities after the formal REDI was completed, but did not always receive responses to their telephone, e-mail, and written communications. The lack of response was due not only to difficulties with electronic communication systems in many countries, but also to the fact that the experts were often simply too

busy with routine duties as well as work and travel resulting from their REDI participation.

Although it may be easier and more cost-effective to schedule followup visits in conjunction with other travel and activities for a country or region, this dependent scheduling can delay timely followup and affect participants' motivation and availability for subsequent activities. LAC was the most efficient region in terms of scheduling (e.g., followup occurred between 1 and 4 months after the KU/CSS) because of its proximity to Baltimore and relative ease of travel. On the other hand, it was also the region where scheduling difficulties eventually led to the ATS course's being conducted at JHPIEGO's offices in Baltimore. Unfortunately, this compromise caused two participants to drop out because they were unable to obtain visas for the US as a result of more stringent requirements following the terrorist attacks of September 11, 2001.

### ***Recommendations***

- Design a structured monitoring and evaluation plan with tools that encompass all aspects of the initiative. Differentiate data needed for supportive supervision from those needed for evaluation purposes. Inform the participants of the need to report regularly on their activities and accomplishments, especially data showing improvements in service delivery and care in their facilities.
- Ensure baseline data collection to enable comparison of regional experts' activities and impacts before and after program implementation.
- Ensure that trainers receive training in monitoring and evaluation to improve comparability of results among participants and across regions.
- Schedule the full course of activities **before** the KU/CSS begins and circulate the schedule to participants. This allows members of the training teams and participants to reserve their time and helps to expedite scheduling.

### ***Selection of Candidates***

Given the Program's high expectations of the contribution the participants would make after completion of their training, selection of appropriate candidates was considered crucial to the success of the initiative. Nominations were solicited from ministries of health, USAID missions, MNH Program country offices, and other cooperating agencies and organizations working in each region. Selection criteria were as follows:

- Mid-career midwives, nurses, or physicians
- Clinically proficient in provision of maternal and newborn health services
- Currently active in clinical work
- Committed to remaining in clinical practice
- Involved in inservice training or a preservice education system
- Able and motivated to do self-paced, independent learning
- Recognized as being, or having the potential to be, leaders in the field of maternal and newborn care

Some individuals selected for the REDI were considered leaders in their countries, and were well positioned to implement and advocate for new evidence-based practices. Other individuals were identified as having leadership potential and had the motivation and institutional support to participate fully in the process. All were expected to share their expertise during and after the development initiative.

Because this was a multi-course initiative taking place over 12 months, and because the participants were expected to implement changes in practices at their job sites, the MNH Program requested written agreement for their participation from their supervisors or institutional representatives.

As shown in **Table 4**, the initiative began with 47 participants from 18 countries in Africa, Asia, and LAC. Only one participant did not continue in the process following the KU/CSS; she was not in clinical practice and therefore withdrew voluntarily. Three other participants were unable to complete the initiative, one because she could not be released from her duties to attend the ATS, and two because they could not obtain visas to attend the ATS. This extremely low attrition rate demonstrated that the selection criteria and process were sound.

**Table 4. Number of Participants Completing the Regional Expert Development Experience\***

REGION (NUMBER OF COUNTRIES)	KNOWLEDGE UPDATE/ CLINICAL SKILLS STANDARDIZATION	FOLLOWUP VISIT**	ADVANCED TRAINING SKILLS
Africa (6)	18	14	17
Asia (3)	13	13	12
Latin America and the Caribbean (9)	16	13	14
<b>Total</b>	<b>47</b>	<b>40</b>	<b>43</b>

\* Participants withdrew before and after followup visit.

\*\* Number of participants assessed for skill retention, documented by forms on file

The majority of participants (75 percent) from the Asia region were from Indonesia due to the large MNH Program in that country.

MNH/Indonesia works primarily in the provinces of West Java and Banten with a combined population of 42 million. A key country strategy was to strengthen preservice midwifery education in order to help the MOH improve quality of care and expand maternal and newborn health services. Therefore, physicians and midwives were selected who could assist in curriculum development, serve as faculty and clinical trainers, and develop clinical training sites.

### ***What We Learned***

Despite gaining supervisor and institutional agreement prior to participation, many supervisors did not fully understand the support required at the job site. This included support for the participant to implement new practices, as well as support for her/him to seek and accept external professional opportunities, such as conducting training in another country.

If candidates are already in positions of influence and authority (e.g., preservice faculty), they may not be able to attend all of the training components because of teaching commitments, despite their acceptance of the invitation to participate. Or, they may have lost their basic skills due to lack of current clinical practice. On the other hand, unless candidates are in positions of leadership or on a leadership track **before** the training, their influence and ability to make changes, even at their own institutions, will be limited. Finally, participants who are located at remote sites are difficult to reach for followup support. And their remote location necessarily limits their ability to be involved in national and regional activities as well as their availability to work for other donors.

### ***Recommendations***

- To the extent possible, confirm before training begins that each candidate is able and willing to follow through on her/his commitments and has consistent opportunity for clinical practice. Send the candidate and supervisor a complete description of the course well before the training begins and ask that together they create preliminary action plans **before** the KU/CSS.
- Have at least two participants who work together in an institution or are from the same country. This arrangement helps reduce barriers to changing practices or introducing new ones. Participants from the same institution are able to support one another to advocate with supervisors and coworkers and demonstrate the effectiveness of these practices. Participants from the same country can team up to conduct joint activities, and their teaming adds authority to their work, as exemplified by Drs. Bazié and Dao in Burkina Faso.
- Select participants from accessible locations and help them plan how they will reach colleagues in more rural areas of their country.

## Development Activities

The knowledge topics and clinical skills selected for inclusion in the training were those related to antenatal care, normal childbirth and postpartum care, care of the newborn, and management of the complications that most commonly contribute to maternal and newborn mortality (see **Table 5**).

**Table 5. Key Skills and Knowledge Update Topics\***

KNOWLEDGE UPDATE TOPICS	KEY SKILLS
Antenatal care	Antenatal care skills, including birth preparedness/complication readiness counseling
Hypertensive disorders of pregnancy	Use of the partograph
Anemia in pregnancy	Clean and safe labor and birth
Bleeding in pregnancy	Rapid assessment and management of shock
HIV in pregnancy	Postpartum care of mother and newborn
Malaria during pregnancy	Manual removal of the placenta
Woman-centered care (e.g., labor and birth in same bed; choice of position for labor and birth)	Bimanual compression of the uterus
Care during labor, birth, and immediate postpartum period	Repair of perineal and cervical lacerations
Clean and safe labor and birth	Newborn exam
Infection prevention	Newborn resuscitation

\* Skills and topics may have varied slightly by region.

Although the initiative was adapted slightly in each region, the training process overall had the same basic structure and used JHPIEGO/MNH Program manuals and learning packages (see **Table 6**).

**Table 6. Training Activities and Materials**

ACTIVITY	PRIMARY TRAINING MATERIALS
<p>1-week Technical/Knowledge Update (KU): Through a variety of interactive presentations on pregnancy, childbirth, and the postpartum period, including care of the newborn, participants had the opportunity to examine and discuss the most current evidence for suggested changes in maternal and newborn healthcare practices. At the end of the update, participants' knowledge was assessed using a written questionnaire.</p>	<p><i>Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors</i> (WHO 2000); <i>Basic Maternal and Newborn Care: A Guide for Skilled Providers*</i> (JHPIEGO/MNH Program 2004).</p>
<p>2-week Clinical Skills Standardization (CSS): This practical, hands-on clinical experience covered normal childbirth and nonsurgical management of complications, and allowed participants to work in clinical service areas and develop competence in key skills (See <b>Table 7</b>). Candidates gained skills through case studies, role plays, and clinical simulations with models, and had to demonstrate competency on models and with case studies prior to beginning work in the clinical area. At the end of the CSS, participants were required to demonstrate competence in all skills, including psychomotor skills, decision-making skills, and woman-centered attitudes, using skills checklists and case studies. Participants also developed commitment statements or action plans, outlining those practices or services they would work to change or strengthen at their job sites after training.</p>	<p>See above (and associated learning resource packages containing objectives, learning guides, checklists, case studies, role plays, and clinical simulations for each set of clinical skills).</p>
<p>Followup visits to candidates' worksites: These visits provided opportunities for on-site support, skills assessment and strengthening, recognition of accomplishments, including progress toward action plans, and problem solving with candidates and their supervisors, when needed.</p>	<p><i>Guidelines for Assessment of Skilled Providers after Training in Maternal and Newborn Healthcare*</i> (JHPIEGO/MNH Program 2004) including knowledge questionnaires, case studies, skills checklists, questionnaires, and interviews.</p>
<p>2-week Clinical Training Skills (CTS) Course: Participants learned how to conduct competency-based clinical training in order to effectively transfer their updated knowledge and clinical skills to other clinicians.</p>	<p><i>Clinical Training Skills for Reproductive Health Professionals</i>, second edition, with corresponding Participant's Handbook and Trainer's Notebook (JHPIEGO 1998).</p>
<p>Clinical Training Skills (CTS) Practica: Participants conducted a knowledge update and/or CSS for healthcare providers in their own institution or country, while being mentored by an experienced trainer.</p>	<p>Not applicable</p>
<p>1-week Advanced Training Skills (ATS) and Change Leadership Workshop: Participants developed more effective skills for teaching problem solving and clinical decision-making, as well as skills needed to train new trainers. A "change leadership" module was included to help participants promote evidence-based practices and create the demand for change to improve quality of care.</p>	<p><i>Advanced Training Skills for Reproductive Health Professionals</i> with corresponding Participant's Handbook, Trainer's Notebook, and change leadership module (JHPIEGO 2000).</p>

\* Because these manuals were formally published after the training took place, field-test versions, with working titles, were used for the activities.

During the CSS, participants gained clinical skills and clinical decision-making skills through clinical experience, case studies, role plays, and clinical simulations. Because the daily caseload of childbirth cases cannot be planned for or predicted, participants were on call for approximately 16 hours a day, for 6½ days per week. It was also necessary to expand the clinical experience to additional tertiary care sites so that participants could see complications and “rare events.”

In all regions, followup visits were made to participants between 1 and 6 months after the KU/CSS in order to assess skill retention, competency, and implementation of action plan activities. Trainers used anatomic models and case studies when cases were not available for assessment. As with the KU/CSS, the structure and content of the followup visits varied from region to region, as well as from participant to participant, depending on the extent of their institutional support.

An essential feature of the REDI was “continual coaching” for knowledge and skills application and the use of case studies to assess both knowledge and clinical decision-making skills. This approach was used during the CSS as well as at the followup visit, and resulted in a high degree of skill retention by participants at (see **Table 7**). Data collection tools used included skills checklists;<sup>5</sup> a participant questionnaire that gathered individual and institutional background information, experience and confidence in performing new skills, and status of action plan commitments; and structured questionnaires to guide interviews with the participant and supervisor. Because of time and logistical constraints, trainers were not always able to complete all of the recommended forms.

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<sup>5</sup> For the Africa group, the CSS checklists were used to assess skill retention and competency. For the Asia and LAC groups, each checklist was pared down to critical steps to accommodate the limited time available for followup visits. Regardless of the version of the checklist used, all participants were assessed on the same sets of skills.

**Table 7. Percentage of Participants Assessed as Competent in Key Maternal and Newborn Health Skills during Followup Visit, by Type of Skill\***

KEY SKILL	AFRICA	ASIA	LAC
Antenatal care	92	100	100
Use of the partograph	83	92**	N/A
Clean and safe labor and birth	92	100	83
Rapid initial assessment and management of shock	N/A	N/A	N/A
Postpartum care of mother and newborn	90	100	83
Manual removal of the placenta	92	100	80
Bimanual compression of the uterus	100	100	100
Repair of perineal and cervical tears	100	100	100
Newborn examination	92	N/A	N/A
Newborn resuscitation	100	100	100
Total number of participants with followup visit skills checklists	14	13	13

\* Due to time constraints and limited numbers of cases available during these visits, trainers were not always able to assess all participants in each of the key skills. This table presents results for those skills that were observed and assessed. Some participants may have received coaching before assessment.

\*\* Assessed by case study

A key part of the KU/CSS component was formulation of an action plan by individual participants. Each action plan stated the practices or services that the participant committed to changing or strengthening at her/his job site. In addition to assessing skill retention, the followup visit also collected information on the implementation of these commitment statements. As shown in **Table 8**, by the time of the followup visit, the majority of participants had implemented the activities outlined in their action plans.

**Table 8. Percentage of Participants Who Implemented Action Plan Commitments by Type of Activity\***

ACTIVITY	AFRICA	ASIA	LAC
Improve or implement use of the partograph	75	100	75
Improve infection prevention practices	100	50	N/A
Implement active management of third stage of labor	100	75	67
Improve quality of care in labor/childbirth	100	N/a	50
Use evidence-based practices in service delivery	62	57	66
Improve counseling for birth preparedness/ complication readiness	100	N/A	N/A
Improve antenatal care	100	100	N/A
Teach/train colleagues, students	100	50	83
Total number of participants with valid responses	17	13	12

\* Interviews conducted during followup visit

In addition, a number of participants in Asia and LAC began implementing activities that were not included in their original action plans (see **Table 9**).

**Table 9. Participants Implementing Activities in Addition to Those in Their Action Plans**

ACTIVITY	ASIA	LAC
Improve infection prevention practices	5	6
Implement active management of third stage of labor	3	N/A
Improve birth preparedness/complication readiness counseling	N/A	10
Improve quality of care in labor and childbirth	N/A	8
Use magnesium sulfate for management of eclampsia	N/A	6
Total number of participants with valid responses	13	12

### ***What We Learned***

Flexibility in course design is essential. The content and skill areas had to be modified not only to meet individual participants' needs, but also to address those factors affecting maternal and newborn survival in each region.

There is tremendous value in having physicians and midwives work together in such activities. They are able to learn first-hand each other's role, how they complement one another, and how they can support each other's work. It is empowering for midwives to be recognized by

physicians as peers and accepted as equal partners in maternal and newborn care. And for physicians, this experience was often a unique opportunity to practice woman-centered care and support women during normal labor and birth.

Sharing action plan accomplishments during the CTS helps to establish an informal network among participants that often continues after formal REDI activities are completed.

Coaching for clinical skills during followup visits required intense supervision by the trainer—one trainer could supervise no more than two participants. However, this coaching greatly contributed to the transfer of learning and implementation of newly acquired skills. Furthermore, the value of followup visits for transfer of learning was found to outweigh the expense and difficulties in arranging them.

A high percentage of participants were able to implement the activities to which they committed, and some participants were undertaking activities in addition to those stated in their action plans. This finding supports the idea that change coming from within a facility is more acceptable and sustainable than change from outside.

All of the participants were found to be sharing their new knowledge and skills with colleagues through the introduction and use of evidence-based practices such as routine use of the partograph, as well as through formal teaching and training activities. The relatively lower percentages of participants who were able to use new evidence-based practices in their own service delivery efforts highlight the time and persistence needed to overcome barriers to change.

### ***Recommendations***

- Select physician-midwife teams from the same hospital when feasible.
- Arrange for followup visits to be made by the same trainers who conducted the KU/CSS. These visits allow for continuation of coaching to help participants attain skill competency, and result in a high level of skill retention, as well as retention of participants in the initiative. After the followup visit, only three participants dropped out of the development experience, for reasons not related to skill competency. There did not appear to be any correlation between skill retention and time between the KU/CSS and followup visit.
- Be prepared to evaluate some skills, especially complications, using anatomic models.
- Participants developing action plans should be realistic in the number and types of activities they commit to change or introduce, and consider their institutional environment as part of the process. For example, changes in facility practices can begin with an individual's

commitment to handwashing—and this individual success can lead to taking on larger challenges, such as improving the infection prevention practices in the facility.

- Trainers should begin planning for followup visits during the KU/CSS, explaining their purpose and scope to participants, and obtaining their commitment to making the necessary local arrangements. Ensure that all trainers know how to complete the evaluation forms in a standard way.
- Trainers must be equally committed to these followup visits and should plan their schedules in advance of the KU/CSS to accommodate them. Trainers' supervisors must support these commitments.
- Establish a mechanism for continued mentoring of the participants and followup by the trainers. This followup can be through regular written and telephone communications, or occasional on-site visits if convenient with other planned travel in the region or country.
- Although there will be different objectives for trainers and evaluators in monitoring and evaluation of capacity-building initiatives, they must work together to ensure that data collection tools serve both purposes and thus take full advantage of the followup visits.

### **Linking Experts to Opportunities**

Initial opportunities for regional experts built on existing MNH Program activities in their respective countries, as exemplified by the cross-border initiative between Guatemala and Honduras described on page 12, and the training activities in Burkina Faso (page 7). From their work as trainers in those activities, their reputations often spread by word of mouth to other organizations working in the country or region, as illustrated in **Table 3** on page 5. The MNH Program trainers actively encouraged participants to attend and give presentations at national obstetrics/gynecology and midwifery association meetings as well as regional and international conferences such as the International Confederation of Midwives Triennial Conference, International Federation of Gynecology and Obstetrics (FIGO), and the Healthy Newborn Partnership. Finally, the MNH Program published regional directories of the experts, summarizing their credentials and providing contact information (see **Appendix B**). In addition to the announcement of their availability in the e-mail newsletter “MNH Update,” the directories were published on the MNH website ([www.mnh.jhpiego.org](http://www.mnh.jhpiego.org)), and print copies were distributed widely through JHPIEGO incountry and regional offices and at regional and international meetings, and

included in mailings of other MNH Program publications. The MNH Program also profiled several experts in the series *Making a Difference*.<sup>6</sup>

Some experts created their own opportunities. Delia Vargas, a midwife from Chile and a founder of the advocacy group Chilean National Humanization of Birth, organized a national conference on best practices related to the “de-medicalization” of childbirth. She used the knowledge gained from REDI to support presentations on woman-centered care and support during childbirth. Attendees included representatives of the Ministry of Health.

### **What We Learned**

In the beginning, opportunities have to be found by those who know what is happening at the regional and global levels. These people are usually not the participants or their supervisors, but rather the representatives of the organizations that sponsor the initiative. Helping the experts network, identify opportunities, and track their activities required a more intense effort on the part of MNH staff than originally anticipated.

Regional experts are often better able than other healthcare professionals to influence attitudes and change practices because they have the status and authority of “experts” and, more important, because they are coming from a setting where new evidence-based practices have been implemented successfully. This finding is exemplified by the amount of regional and South-to-South work that the experts have accomplished. For example, physicians from Indonesia and Nepal are conducting training in emergency obstetric care in Afghanistan and Cambodia, and a physician and midwife team from Burkina Faso spent a month in Haiti strengthening clinical services and training colleagues and is also working in Ethiopia and Madagascar.

It was difficult to obtain current information on experts’ activities without having devised a plan and process that could be shared with participants throughout the initiative. That is, the Program did not make explicit the expectation that participants would continue to report their accomplishments after structured activities were concluded.

### **Recommendations**

- Develop mechanisms for experts to stay connected and share their expertise and successes with one another and with organizations that may use their services. This communication could be through an

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<sup>6</sup> *Ambassador of Quality: An Interview with Sylvia Deganus*. January 2002; *An Ambitious Agenda: Regional Expert Responds to Call for Training in Burkina Faso*. January 2002; *Change Agents in Bangladesh; Uganda and Uruguay: Extending Beyond MNH Program Countries*. January 2002.

e-mail newsletter, an “Experts’ Corner” on an organizational website, or periodic special reports.

- Plan for and develop survey tools before the formal activities have concluded so that they can be shared with participants. Encourage participants to regularly report on their activities.

## CONCLUSION

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“There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success than to take the lead in the introduction of a new order of things.”

Niccolo Machiavelli  
(1469–1527), Italian  
author and statesman

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The key to human resource development is helping an often demoralized workforce believe that they can do extraordinary things. Most of these experts entered the REDI somewhat jaded, discouraged by the sheer magnitude of the challenges they faced in their daily work. The experience gave them new knowledge and skills, but more important, it helped them understand that significant change can take hold by starting with small, individual changes in practices. From this personal commitment can grow a wider sphere of influence and authority—from the facility to the country to the region, and even globally. One need look no further than the extraordinary things this small group of individuals has accomplished to see that sustainable change is possible in a short period of time.

The world does not really want or appreciate “experts.” The world needs knowledgeable people who can apply their expertise in difficult and unfamiliar situations. It is essential but not sufficient to be knowledgeable. It is essential but not sufficient to be skilled. It is essential but not sufficient to be good teachers. However, the combination of this knowledge and these skills, together with an introduction to leadership and advocacy, made these individuals very effective change agents.

The MNH Program looks forward to its continued partnership with these regional ambassadors as they continue to help make pregnancy and childbirth safer throughout the world.



## APPENDIX A

# STAFF AND CONSULTANTS CONDUCTING REDI ACTIVITIES

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## APPENDIX B

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