

**The Maternal and Neonatal Health Program:
Building a Legacy for Improved Maternal and Newborn Care**

A Review to Date

January 2002

The Maternal and Neonatal Health (MNH) Program is committed to saving mothers' 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, is a nonprofit corporation working to improve the health of women and families throughout the world.
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This document was made possible through support provided by the Office of Health and Nutrition, Center for Population, Health and Nutrition, Bureau for Global Programs, Field Support and Research, United States Agency for International Development (USAID), under the terms of Award No. HRN-A-00-98-00043-00. The opinions expressed herein are those of JHPIEGO and do not necessarily reflect the views of USAID.

May 2002

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Message from the Director

The Maternal and Neonatal Health Program has worked diligently to build a strategy for responding positively and creatively to the complexities of programming for improved maternal and newborn health.

We are looking to the future with a keen sense of our responsibility to build sustainable approaches for improved maternal and newborn care.

Since 1998, the Maternal and Neonatal Health Program (MNH) has worked diligently to build a strategy for responding positively and creatively to the complexities of programming for improved maternal and newborn health. The Program is currently working in 11 countries across Africa, Asia and Latin America and supports a broad global agenda. The Program emphasizes collaboration, improved service delivery, strengthened policy and demand generation for high-quality services at all levels. Country-level program interventions are multifaceted and mutually supportive and are linked to the Program's global leadership agenda.

After 3 years, we are struck with how much has been achieved and the range of opportunities available to the safe motherhood community for continued programming. The Program's first 3 years were highlighted by the start-up and rapid expansion of country programs, the formation of new global partnerships and initiatives, the development and dissemination of international guidelines for maternal and newborn healthcare, the training of skilled providers, and advocacy and policy efforts to strengthen awareness about and create commitment for safe motherhood.

As the MNH Program matures, we are looking to the future with a keen sense of our responsibility to build sustainable approaches for improved maternal and newborn care. This review highlights current results of the Program's ongoing work at the global and country levels. These results would not be evident without the full involvement and commitment of a range of host country counterparts and other key partners, including the World Health Organization, UNICEF, the United Nations Population Fund, the International Confederation of Midwives and a variety of local and international nongovernmental organizations. It is also important to highlight the valuable contribution of our partners—the Centre for Development and Population Activities (CEDPA), the Johns Hopkins Center for Communication Programs (JHU/CCP), the Program for Appropriate Technology in Health (PATH) and JHPIEGO.

Over the next 2 years, the Program will continue to identify and promote tools and approaches that have proven effective and can be used more broadly in our program countries and other countries. Continued collaboration globally, regionally and at the country level with key partners will remain central to the Program's ability to scale up proven interventions. The Program will continue to strengthen existing partnerships with other USAID-funded organizations, the World Health Organization, international groups such as Saving Newborn Lives, and the Columbia University Averting Maternal Death and Disability Program.

The MNH Program team remains committed to the safe motherhood agenda. In the coming years, we will continue our call to action for improved maternal and newborn well-being through our partnerships, and dedication to high-quality, sustainable programming.

Judith Robb-McCord
Director, Maternal and Neonatal Health Program

The Maternal and Neonatal Health Program: Building a Legacy for Improved Maternal and Newborn Care

The Maternal and Neonatal Health (MNH) Program promotes maternal and newborn survival by working to increase the use of appropriate maternal and neonatal health services. The Program works



Photo by Susheela Engelbrecht

globally, as a leader and collaborator, in setting international clinical standards and mobilizing the commitment of organizations and leaders to address maternal and newborn health issues throughout the developing world. The MNH Program's vision—a world in which optimal conditions exist for women and newborns to survive pregnancy and childbirth—guides its programming efforts.

In 1998, the MNH Program operated country programs in 7 countries in Africa, Asia and Latin America. By 2001, the Program worked in 11 program countries—Bolivia, Burkina Faso, Guatemala, Guinea, Honduras, Indonesia, Nepal, Peru, Tanzania, Uganda (through the Regional Centre for Quality of Health Care) and Zambia—representing 26 provinces or zones and 66 districts across the three regions. In these countries, across the regions, and in its global work, the Program is building a legacy of change by working toward lasting results in clinical services, policy and behavior change. The following legacy statements show the scope of this work and provide the framework for the Program's results reported here:

In support of the international safe motherhood agenda, the MNH Program is

- *Establishing and promoting international evidence-based standards for essential maternal and newborn care through global partnerships*
- *Improving the quality of skilled attendance by implementing international evidence-based standards and guidelines in national policy, curricula and competency-based training*
- *Generating shared responsibility and coordinated action among policymakers, health facilities, providers, communities, families and women through birth preparedness and complication readiness*
- *Scaling up evidence-based practices, tools and approaches through the adoption and adaptation of these practices by key organizations working in safe motherhood*
- *Building the evidence base for social and behavior change interventions that generate informed demand and collective action for safe motherhood.*

Establishing and promoting international evidence-based standards for essential maternal and newborn care through global partnerships

The completion, launch and dissemination in 2001 of *Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors* represented the culmination of 3 years of collaboration with WHO.

The Program has worked with a range of partners to develop and establish evidence-based global guidelines for maternal and newborn care and to implement them both globally and at the country level. The completion, launch and dissemination in 2001 of *Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors (MCPC)*—part of the World Health Organization's (WHO's) Integrated Management of Pregnancy and Childbirth (IMPAC) series—represented the culmination of 3 years of collaboration with WHO. The manual, published by WHO and endorsed by UNICEF, the United Nations Population Fund, the World Bank and the International Federation of Gynecology and Obstetrics, outlines evidence-based guidelines for providing essential basic care and managing complications in pregnancy and childbirth. The MNH Program participated in the creation of the guidelines, organized the official launch of the manual at the Global Health Council conference in Washington in May 2001, is distributing the manual globally, and has worked with WHO to support the translation and adoption of the manual.

The Program's efforts to promote the use of the manual have included the following activities:

- Collaboration with the Pan American Health Organization to support the review, translation and adoption of the manual in the Latin America region
- Collaboration with the Western Pacific region of WHO to review and adopt the manual in 9 countries and 12 medical schools
- Support for the translation of the manual into Spanish (other organizations and entities have pursued translations into French, Mandarin, Laotian, Vietnamese and Mongolian)
- Distribution of 5,000 copies of the manual to midwifery and medical schools, individuals and programs in 30 countries

Country-level interest in adapting and using the *MCPC* has been overwhelmingly positive. Indonesia, for example, developed and adopted a National Resource Document based on the *MCPC* and distributed it to all medical and midwifery training institutions and district health services (10,000 copies). Indonesia has also developed curriculum content based on the guidelines and has disseminated it to all 65 Indonesian midwifery schools. Faculty from 19 schools and clinical instructors from 32 training sites are now trained in implementing the new guidelines and curriculum content. In addition, a radio vignette for the *bidan siaga* (alert midwife) campaign was based on the *MCPC* guidelines for active management of the third stage of labor.

The MNH Program has also supported several other important projects aimed at developing and disseminating international guidelines. The

Program is collaborating with WHO on another IMPAC manual, *Management of Newborn Problems: A Guide for Midwives, Nurses, and Doctors*. In collaboration with Saving Newborn Lives and with input from BASICS and the American College of Nurse-Midwives, the Program is also working on a third manual, *Basic Maternal and Newborn Care*. The Program is also developing learning resource packages to accompany these manuals.

The MNH Program supported the International Confederation of Midwives in finalizing and field-testing their midwifery core competencies in Ethiopia, Gambia, Israel, Latvia, Lebanon, Malawi, Paraguay, Sarawak, Sri Lanka, Tanzania, and Trinidad and Tobago. These core competencies will be used to standardize midwifery skills to ensure a higher level of quality in the provision of midwifery services.

Improving the quality of skilled attendance by implementing international evidence-based standards and guidelines in national policy, curricula and competency-based training

To support the sustainability of improvements in maternal and newborn healthcare practices, the MNH Program works with ministries of health to establish national standards and guidelines. In 2001, the Program worked in eight countries—Bolivia, Burkina Faso, Guatemala, Indonesia, Nepal, Peru, Tanzania and Zambia—to begin adapting and implementing the *MCPC* as a standard for essential maternal and newborn care.

The MNH Program has also supported these achievements in implementing national guidelines and revising curricula based on international evidence-based standards:

- The Ministry of Health of **Bolivia** has passed a ministerial resolution updating practices in accordance with international consensus documents such as the *MCPC*. The resolution accepts and incorporates active management of the third stage of labor as a national norm in public and private clinical practice. Nationwide implementation of the resolution, including procurement of oxytocin for use in active management, will be supported by the World Bank-funded basic health insurance.
- In **Burkina Faso**, national safe motherhood policies, norms and protocols were updated and finalized based on the *MCPC* and other evidence-based practices.
- In **Zambia**, the MNH Program has worked intensively with a team comprising the General Nursing Council, physicians and others to revise the registered midwifery curriculum. The curriculum is being pilot-tested at the Lusaka School of Midwifery.
- In **Nepal**, the National Health Training Center has trained auxiliary nurse-midwives with an updated evidence-based curriculum.

- The Ministry of Health of **Tanzania** has officially approved a National Package of Reproductive and Child Health Interventions, which outlines the required reproductive and child health services to be provided at each level of the service delivery system.

Evidence-based practices are central to the MNH Program training strategy, providing a focal point for the Program's training curricula.

Evidence-based practices are central to the MNH Program training strategy, providing a focal point for the Program's training curricula. The Program introduces the evidence-based practices outlined in the *MCPC* and other documents through Technical Updates and Clinical Skills Standardization courses for healthcare providers. Technical Updates address the current evidence for suggested changes in maternal and neonatal healthcare practices, while Clinical Skills Standardization courses give participants practical, hands-on clinical experience in normal childbirth and nonsurgical management of complications.

The Program has pursued its evidence-based training strategy across all program countries and through the Regional Expert Development Initiative, aimed at establishing core groups of maternal and neonatal healthcare experts and trainers in Africa, Asia and Latin America. In 2001, healthcare providers from 22 countries and 157 healthcare facilities received training in evidence-based practices: 1,581 participated in Technical Updates; and 384 participated in the Clinical Skills Standardization course (through national training and the Regional Expert Development Initiative).

The Program launched the Regional Expert Development Initiative in 2001 in order to develop a sustainable capacity to meet regional needs for skilled providers and trainers. The initiative brings together healthcare providers in each region for Knowledge Updates, Clinical Skills Standardization and Clinical Training Skills courses. At the end of the training, participants make commitments to change practices in their service facilities. The MNH Program monitors participants' performance at their service delivery sites and during their training activities to assess the transfer of skills.



Photo by Jeff Smith

Expert training activities in Africa were completed in 2001, and the training series was started in both Asia and Latin America. In Africa, a total of 17 participants from seven countries completed the program. Provider commitments made during the training included improving infection prevention practices, using the partograph to monitor labor, upgrading the antenatal care system and improving emergency preparedness. At followup, all of the participants had initiated steps toward making most of these changes in their facilities.

In Asia, 13 participants, including midwives and doctors from Bangladesh, Indonesia and Nepal, have completed a Technical Update and basic Clinical Skills Standardization and will complete their Clinical Training Skills course in 2002. In the Latin America region, 14 nurses, doctors and ob/gyns have participated in a Technical Update and basic Clinical Skills Standardization and will also complete their Clinical Training Skills course in 2002.

Thus far, the initiative has achieved the following positive results:

- In January 2001, three ob/gyns from **Guatemala** received training from the MNH Program to update their knowledge and skills. In February, with the support of MNH/Guatemala staff, the three ob/gyns began working in the Amatitlan Hospital maternity to implement the clinical practices they had studied. One of the ob/gyns at Amatitlan reported that, in the following months, the hospital was able to reduce the number of routine episiotomies performed on women giving birth to their first child. This was expected to improve women's postpartum recovery and increase client satisfaction with the hospital's services. The hospital director was also pleased with other service delivery changes, particularly when he realized that costs were being reduced. This was particularly evident with the use of active management of the third stage of labor. Although active management led to an increase in the hospital's use of oxytocin (a drug used immediately after childbirth to speed delivery of the placenta and decrease blood loss), the savings that resulted from the reduction in blood transfusions has more than offset the cost of the drug.
- In **Burkina Faso**, one of the MNH Program's regional experts held a special training session on complications in pregnancy and labor for a surgeon from the district hospital in Koupéla. The Koupéla hospital is now able to offer cesarean sections and other emergency obstetric procedures. As a result, fewer women have to travel long distances to other hospitals for emergency care. Between April and December 2001, the hospital performed 17 C-sections and resolved 27 other complications, thus averting 44 emergency referrals and saving mothers money and valuable time away from home.

A major focus and goal of the Program is to develop awareness of and encourage communication about the factors that cause delays in deciding to seek care, reaching care and receiving care.

Generating shared responsibility and coordinated action among policymakers, health facilities, providers, communities, families and women through birth preparedness and complication readiness

The MNH Program promotes birth preparedness and complication readiness (BP/CR) as a means to reduce the delays—in deciding to seek care, reaching care and receiving care—that often result in maternal and newborn deaths. A major focus and goal of the Program is to develop awareness of and encourage communication about the factors that cause these delays, and to promote shared responsibility for birth preparation and complication readiness among women, families, communities, providers, facilities and policymakers.

building a legacy

In 2001, the Program began measuring the implementation of BP/CR practices through quantitative baseline surveys and qualitative approaches.



Photo by Stephanie Suhowatsky

In addition, the Program created and produced *Birth Preparedness and Complication Readiness: A Matrix of Shared Responsibility* to serve as a programming and advocacy tool in the development of country-specific strategies and activities to promote readiness. The matrix is a poster-size chart that lists and explains the responsibilities that women, families, communities, providers, facilities and policymakers can assume to support readiness at all times.

Program-supported activities and results at the country level have included the following:

- The **Zambia** White Ribbon Alliance for Safe Motherhood was established in 2000 with local partners and nongovernmental organizations. Post-launch group discussions in four areas led to the development of community action groups to promote safe motherhood issues.
- **Guatemala** has established safe motherhood committees in 42

communities. In 2001, three women with obstetric emergencies successfully reached care by activating life-saving action plans; and one of the Program's target hospitals established an on-call system for traditional birth attendants to help promote culturally appropriate care.

- In **Burkina Faso**, the MNH Program is strengthening community-based health committees to become the link between facilities and the community and to develop BP/CR plans that recognize the roles that providers, communities and individuals play in improving the survival of mothers and infants.
- In **Indonesia**, Pita Putih (the Indonesia White Ribbon Alliance) has used special events to stimulate communities to develop BP/CR interventions.
- **Nepal** has developed a Birth Preparedness Package to encourage family and community-level planning for normal deliveries and obstetric emergencies, including financial tools.

The concept and application of BP/CR are also integrated into the Program's training of skilled providers. Participants in Clinical Skills Standardization courses receive training and coaching on counseling clients for birth preparedness and complication readiness.

The MNH Program continues to expand its network of global partners and to strengthen and deepen its ongoing relationships.

Scaling up MNH Program evidence-based practices, tools and approaches through the adoption and adaptation of these practices by key organizations working in safe motherhood

One of the greatest successes of the MNH Program is the partnerships the Program has formed to advance the global maternal and newborn health agenda. These partnerships are essential to ensuring the scale-up of effective practices, tools and approaches. The MNH Program works with other donors and technical agencies to combine expertise and input, to promote synergies and to ensure the coordination of available resources in order to broaden action for maternal and newborn survival.

The MNH Program continues to expand its network of global partners and to strengthen and deepen its ongoing relationships. Key partners include WHO, UNICEF, the World Bank, the United Nations Population Fund, and the Centers for Disease Control and Prevention. The Program has also worked with international and professional health organizations such as the International Federation of Gynecology and Obstetrics, the International Confederation of Midwives, the American College of Nurse-Midwives, the Society for the Advancement of Reproductive Care, and the Latin American Center for Perinatology. Finally, collaboration with initiatives, alliances and working groups such as the White Ribbon Alliance, the Healthy Newborn Partnership, Malaria in Pregnancy, the Policy Project, and Columbia University's Averting Maternal Death and Disability have been an integral and exciting part of the Program's first 3 years.

Scaling up key interventions and evidence-based practices is a priority for the MNH Program. As a global safe motherhood partner, the MNH Program has been able to contribute to the development and dissemination of a number of tools and approaches that are central to improved programming in maternal and newborn health:

- The Program participated in the development and dissemination of the *MCPC* manual with WHO and other international organizations. This manual is one of four evidence-based technical manuals that will form an essential maternal and newborn healthcare package (WHO's IMPAC series) and will specify the continuum of care necessary to improve maternal and neonatal health outcomes.
- In partnership with Columbia University's Averting Maternal Death and Disability, the MNH Program developed an emergency obstetric care curriculum based on the content of the *MCPC* manual.
- The Program has supported the White Ribbon Alliance, which has grown to encompass 18 countries and 154 organizations worldwide.
- Maximizing Access and Quality, an initiative to use state-of-the-art methods to maximize access to and quality of family planning and other selected reproductive health services, has incorporated the MNH Program's antenatal care learning module into its MAQ Exchange.

- Intra has incorporated MNH Program learning materials, including the Program's antenatal care learning module, into its self-paced training package.
- With technical assistance from the MNH Program, the Quality Assurance Project developed methods for measuring provider competence for essential maternal and neonatal care.

At the country level, examples of scale-up include the following:

- In **Nepal**, under the umbrella of the National 15-Year Safe Motherhood Plan, the MNH Program has collaborated with His Majesty's Government and its partners to conduct national-level consensus workshops leading to a unified Information, Education and Communication strategy for safe motherhood.
- In **Guatemala**, the ministry of health has approved CaliRed, the Program's performance and quality improvement accreditation initiative, as a national policy.
- In **Burkina Faso**, the MNH Program's performance and quality improvement process, which was initiated in four healthcare facilities in the Koupéla district, has been expanded by the ministry of health to all health facilities throughout the district.

Looking to the Future

The MNH Program begins 2002 with a full agenda of programming, including the development and dissemination of international guidelines for newborn care, completion of training under the Regional Expert Development Initiative and continued support for the regional experts, and continued collaboration with a network of organizations to understand and respond to the burden of disease of malaria during pregnancy. The Program is also committed to building the evidence base for social and behavior change interventions that generate informed demand and collective action for safe motherhood.

Collaboration will continue to be a key strategic approach for the MNH Program in the coming year and beyond. Both globally and at the country level, the Program will build on current successes by strengthening existing partnerships and pursuing new relationships with a range of public and private organizations. Through its partnerships and continued dedication to high-quality, sustainable programming, the MNH Program will be well positioned to broaden programming impact and support the global safe motherhood agenda.

Maternal and Neonatal Health (MNH) Program

The MNH Program supports increased use of key maternal and newborn health and nutrition interventions in order to reduce maternal and newborn deaths.

Maternal and Neonatal Health (MNH) Program Overview

The MNH Program strives to improve maternal and newborn survival through increased access to, demand for and use of skilled maternal and newborn healthcare services. Our guiding principles are empowerment of women, participation, collaboration, gender sensitivity and equity.

Essential Maternal and Neonatal Care (EMNC) Interventions

Central to the MNH Program philosophy and approach is a broad package of essential maternal and neonatal care (EMNC) interventions that are evidence-based and build on global lessons learned about what works to save the lives of mothers and newborns. EMNC interventions support skilled providers and help to create an enabling environment within a healthcare system that provides necessary drugs and equipment and access to higher levels of care. Essential to EMNC is a core package of key maternal and newborn healthcare services:

- Focused antenatal care
- Birth preparedness
- Complication readiness
- Clean and safe delivery
- Management of obstetric complications
- Care of the normal newborn
- Care of the sick and low birth weight newborn
- Postpartum care

Technical Support for the MNH Program

The MNH Program includes three technical components that support the EMNC core package of maternal and newborn healthcare interventions by promoting actions and strategies in the following areas:

Service Delivery encompasses establishing clinical standards of care, educating and training skilled providers and strengthening service delivery sites through performance improvement interventions.

Behavior Change Interventions promote communication, social mobilization, strengthening enabling environments and client-centered quality improvement interventions.

Policy and Finance focuses on the development, adaptation and use of global standards, advocacy for appropriate policies for maternal and newborn services, financing mechanisms to improve access to maternal and newborn services and costing of various maternal and newborn services.

These technical components form a framework for action and synergistic strategies that build on past lessons, promote supportive policies and partnerships, strengthen the continuum of care and mobilize communities to demand high-quality essential maternal and neonatal health services.

Gender is a cross-cutting concern throughout the MNH Program technical components. Gender inequities affect access to and demand for maternal health services with impacts at the policy, facility, community and household levels. Gender-sensitive design is integral to increasing the quality of clinical and supportive care that the woman receives both in the facility and in the community.

For example, in their efforts to increase skilled care for pregnancy and childbirth, the MNH Service Delivery team focuses on strengthening the performance of the skilled provider and works with the Behavior Change Interventions team and Policy and Finance team to increase the accessibility of, demand for and use of skilled providers. Policy and Finance addresses issues such as establishing standards of care, while Behavior Change addresses motivational and behavioral issues associated with the use of a skilled provider for maternal and newborn healthcare services.

Global Leadership and Country and Regional Programs

As USAID's flagship initiative to increase the use of key maternal and newborn health and nutrition interventions in order to reduce maternal and neonatal deaths, the MNH Program is responsible for integrating and linking two levels of activity. The first, Global Leadership, focuses on the following activities:

- Setting global technical standards for maternal and newborn healthcare in collaboration with key multilateral and bilateral stakeholders
- Mobilizing commitment and strengthening program coordination and collaboration among national and local leaders, multilateral and bilateral stakeholders
- Building on global lessons about care for mothers and newborns
- Identifying, disseminating and scaling up proven, cost-effective interventions
- Identifying global research and evaluation needs to support maternal and newborn survival

The Global Leadership strategy informs and guides the development of the second level of activities, Country and Regional Programs. The country and regional programs reflect the global technical standards and benefit from networking and sharing information, lessons learned and best practices. In each program, interventions are designed to be culturally sensitive, sustainable and appropriate for scaling up for broader impact.

EMNC is at the center of the country and regional programs. Key interventions target birth preparedness and complication readiness in order to empower communities, families and facilities to recognize and respond to obstetric and newborn complications. These programs promote the development of services that are appropriate, timely and practical for low-resource settings.

Detection and Management of Hypertensive Disorders of Pregnancy to Prevent Complications

The World Health Organization (WHO) estimates that 15% of women will have some degree of hypertension during pregnancy. Fortunately, most of these cases are benign and do not require treatment or result in complications. In some cases, however, the woman has a hypertensive disorder of pregnancy such as pre-eclampsia, which can lead to serious complications or death. The Maternal and Neonatal Health (MNH) Program is committed to reducing maternal and perinatal mortality due to hypertensive disorders of pregnancy. It is not possible to accurately predict which women will develop these conditions, nor is it clear if or how they can be prevented. The Program, therefore, promotes an approach that emphasizes early detection and skilled and timely management of hypertensive disorders of pregnancy to prevent complications.

Hypertensive disorders of pregnancy result in 12% of maternal deaths globally and up to 40% of maternal deaths in some countries.

These conditions can also impact the health of the fetus or newborn and are responsible for up to 13% of stillbirths and 20% of early neonatal deaths in some areas of the world.

Types of Hypertensive Disorders of Pregnancy

Hypertension during pregnancy is classified according to degree of high blood pressure, associated signs and symptoms, and time of onset during pregnancy.

- **Chronic hypertension:** high blood pressure detected before the first 20 weeks of gestation.
- **Pregnancy-induced hypertension (PIH):** high blood pressure that begins after 20 weeks of gestation and *is not* accompanied by protein in the urine (proteinuria).
- **Pre-eclampsia:** high blood pressure that begins after 20 weeks of gestation and *is* accompanied by proteinuria; may be mild or severe, depending on the degree of high blood pressure or the presence of other signs and symptoms, including epigastric pain, severe headache and blurred vision, among others; **severe pre-eclampsia** can result in stroke, bleeding disorders and death.
- **Eclampsia:** a life-threatening condition defined by the presence of convulsions, typically (but not always) preceded by pre-eclampsia.

Preventing Complications of Pre-eclampsia

The MNH Program promotes focused antenatal care (another MNH Best Practice), including evaluation of the woman's blood pressure at every antenatal visit, as the best way to facilitate early detection of hypertensive disorders of pregnancy. The appropriate management of PIH and pre-eclampsia is critical to preventing the complications of pre-eclampsia. Appropriate management may include the following:

- Close monitoring to identify progression to pre-eclampsia—women with PIH require weekly monitoring of blood pressure, urine and fetal condition.
- Health messages and counseling for the woman and her family—education can increase social support for women with PIH when hospitalization or a decrease in workload is necessary. Women with

PIH should be encouraged to eat a normal diet with no restrictions on calorie, fluid or salt intake; such restrictions do not prevent pre-eclampsia and may be harmful to the fetus.

- Treatments to prevent convulsions, coma, stroke and other serious complications.
- Special arrangements for childbirth—for women with pre-eclampsia, a decision must be made about timing of delivery, based on the health of the mother and baby and the gestational age of the pregnancy.

The onset of severe pre-eclampsia or eclampsia can be very sudden and occur without warning. For this reason, all pregnant women and their families should be able to recognize the danger signs of pre-eclampsia—severe headache, blurred vision, abdominal pain or swelling—and have a plan for how to reach the hospital if a danger sign arises.

Managing Severe Pre-eclampsia and Eclampsia

Because severe pre-eclampsia and eclampsia are life-threatening complications, women suspected of having either condition should receive immediate and continuous attention at a hospital. Appropriate management of these complications may include the following:

- Giving magnesium sulfate to the woman to prevent the occurrence/recurrence of convulsions. Diazepam is not as effective for preventing convulsions.
- Controlling the woman's blood pressure using drugs such as hydralazine, labetalol or nifedipine.
- Delivering the baby after the woman's condition is stabilized, regardless of fetal maturity. Delaying delivery to allow the fetus to mature only risks the lives of the mother and fetus. Delivery should take place within 24 hours of initiation of management in severe pre-eclampsia and within 12 hours of initiation of management in eclampsia.
- Monitoring the woman closely to detect and facilitate the management of complications in the renal (kidneys), hepatic (liver), circulatory (blood) or respiratory (lungs) systems.

MNH Program Activities in Support of This Best Practice

The MNH Program is currently working to train and update healthcare providers in the early detection and skilled and timely management of hypertensive disorders of pregnancy. Specifically, these activities include:

- Developing global, regional and national standards and guidelines for the detection and management of hypertensive disorders of pregnancy. *Managing Complications in Pregnancy and Childbirth*—a manual developed by WHO with technical assistance from the MNH Program—sets the standards for diagnosing and managing these conditions and related complications. The manual *Basic Maternal and Newborn Care*—currently in development by the MNH Program with input from the American College of Nurse-Midwives (ACNM) and BASICS (Basic Support for Institutionalizing Child Survival)—provides more detailed information on detecting signs and symptoms of hypertensive disorders during the

antenatal period and on educating women and their families on associated danger signs and complication readiness.

- Conducting technical knowledge updates—for maternal healthcare providers, trainers and policymakers—that review the latest evidence for the appropriate management of hypertensive disorders of pregnancy, including specific treatment protocols such as the use of magnesium sulfate for the prevention and treatment of convulsions.
- Conducting training in preservice programs to teach nursing, midwifery and medical students how to detect and manage hypertensive disorders of pregnancy and related complications.
- Conducting training for clinicians: clinical skills standardization courses to teach them to detect and manage hypertensive disorders of pregnancy and related complications; and clinical training skills courses to enable them to share this knowledge with other clinicians.
- Developing job aids that provide critical information on managing/detecting hypertensive disorders of pregnancy in a concise format for easy use in clinical settings.

The MNH Program also supports social mobilization efforts to educate community members on taking appropriate actions when a woman presents with danger signs of a hypertensive disorder of pregnancy.

Finally, the MNH Program is currently assessing the impact of hospital protocols for managing hypertensive disorders of pregnancy. For example, one study compares the care of women before and after management protocols were implemented in two hospitals in Honduras; it will determine how implementation of a standardized protocol has affected the outcomes of women with hypertensive disorders of pregnancy. The results of this study will guide the development and implementation of additional protocols for the management of other maternal and neonatal complications.

Developing Experts for Maternal and Neonatal Health

The MNH Program’s Regional Expert Development Initiative contributes to a sustainable regional capacity to train providers to competency in maternal and newborn healthcare.

By developing a core group of experts in three regions—Africa, Asia, and Latin America and the Caribbean—the MNH Program is helping to establish a sustainable regional capacity to meet the need for strengthened maternal and newborn healthcare providers and services.

The Maternal and Neonatal Health (MNH) Program is dedicated to helping ensure that women and newborns survive pregnancy, childbirth and the postpartum period. The Program focuses on interventions known to have the greatest impact on reducing maternal and newborn mortality—including the provision of skilled care. Although many factors contribute to skilled care, the single most critical intervention in saving the lives of women and newborns is the presence of a skilled provider during childbirth and the immediate postpartum/newborn period. Thus, training healthcare providers to competency in maternal and newborn healthcare is a key component of the Program’s overall strategy.

In 2001, in order to develop a sustainable capacity to meet regional needs for skilled providers, the MNH Program started the Regional Expert Development Initiative (REDI). The initiative establishes core groups of maternal and neonatal healthcare experts and trainers in Africa, Asia, and Latin America and the Caribbean (LAC).

The Program “develops” experts by updating their evidence-based maternal and newborn healthcare practices, standardizing their clinical skills and enhancing their training skills. Recognizing the need to prepare participants for their role as change agents, the MNH Program also addresses leadership skills in this expert development process.

After training, the experts should be able to do the following:

- Advocate for changes in maternal and newborn healthcare practice
- Articulate the evidence basis for such changes
- Perform the required clinical skills
- Teach at the preservice level and train at the inservice level
- Provide leadership in an institution, country and region to improve maternal and newborn healthcare

As part of their participation in the initiative, the experts commit to an action plan to change selected maternal and newborn healthcare practices at their respective institutions. They also serve as technical experts for other organizations and institutions working to improve the quality of maternal and newborn healthcare services in the region.

Training Process and Content

The MNH Program uses a competency-based training approach, focusing on developing clinical and training skills as well as updating knowledge. Throughout the training process, the MNH Program continually assesses participants’ performance, providing them with mentoring and appropriate

feedback. Following the training, the MNH Program monitors participants' performance in their service delivery sites and during their training activities to assess the transfer of training. The Program uses information gathered from followup visits to plan further training efforts and improve the training process itself.

The training process comprises the following activities:

- A 1-week **Technical Update**: Through presentations and discussion on normal childbirth and management of complications, participants have the opportunity to examine and discuss the evidence for suggested changes in maternal and newborn healthcare practices.
- A 2-week **Basic Clinical Skills Standardization**: This practical, hands-on clinical experience covers normal childbirth and nonsurgical management of complications and allows participants to work in clinical service areas.
- **Followup visits in participants' worksites** to assess ongoing development and implementation of strengthened clinical skills and identify areas that need improvement.
- A 2-week **Clinical Training Skills Course**: Participants learn how to effectively transfer their updated knowledge and clinical skills to other clinicians using a competency-based training approach.
- **Clinical Training Skills Practica**: Participants conduct a knowledge update and/or clinical skills standardization for healthcare providers in their own institution or country, with the assistance of an experienced trainer.
- A 1-week **Advanced Training Skills and Change Leadership Workshop** designed to develop more effective skills for teaching problem solving and clinical decision-making as well as the skills needed to train new trainers. The "change leadership" component is included to further prepare the participants for their role as change agents.

At the end of this training series, participants become qualified MNH Program clinical trainers.

The manual *Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors* (MCPC) is one of the primary resources used for REDI training activities. Published by the World Health Organization as part of its Integrated Management of Pregnancy and Childbirth series, the manual provides evidence-based guidelines and specifies the continuum of care necessary to improve maternal and neonatal outcomes. The MNH Program has developed a complementary learning resource package that embodies international standards of clinical practice and competency-based training.

MNH Program Experts: Criteria for Selection

To ensure the effectiveness of the regional expert initiative, the MNH Program selects individuals for the program who have both personal willingness and institutional support to participate in the expert development process. Individuals must be available to participate in all

required expert development activities over a 12-month period, and they must be committed to future involvement as MNH Program experts and available to serve as experts several times a year after they have completed their training. Moreover, supervisors and/or organizations must actively support these individuals to participate in training activities and conduct subsequent training events.

The individuals selected for participation in the expert development process in the Africa, Asia and LAC regions all met the following criteria:

- 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, or have the potential to be, leaders in the field of maternal and newborn care

Current Training Activities

The MNH Program has completed expert training activities in Africa and has begun the series in both Asia and the LAC region, with participants representing more than 19 countries. As of December 2001, approximately 45 regional healthcare providers have completed both the MNH Program technical update and clinical skills standardization.

In Africa, the MNH Program held an advanced training skills and change leadership workshop in August 2001—its final event of the series—in Nairobi, Kenya. A total of 17 individuals from Burkina Faso, Ghana, Kenya, Malawi, Tanzania, Uganda, Zambia and Zimbabwe have completed the full series of training activities and have been assessed as clinically competent. The MNH Program has published a directory of these expert trainers in maternal and newborn healthcare for the Africa region and is distributing this directory globally, regionally and within the experts' respective countries.

In Asia, 13 participants, including midwives and doctors from Bangladesh, Indonesia and Nepal, completed a technical update and basic skills standardization in July–August 2001. The MNH Program is providing followup and will offer a clinical training skills course in early 2002. And in the LAC region, 14 nurses, doctors and ob/gyns representing Bolivia, Chile, Guatemala, Haiti, Honduras, Paraguay, Peru and Uruguay participated in a technical update and basic clinical skills standardization course in Guatemala in August–September 2001; they are scheduled to receive a clinical training skills course in February 2002 in Peru.

The MNH Program is enthusiastic about the contribution that these experts will make to improving maternal and newborn health globally. Their expertise promises to advance training and leadership in making pregnancy safer throughout the world.

Focused Antenatal Care: Planning and Providing Care During Pregnancy

The MNH approach emphasizes quality over quantity in antenatal visits.

At the core of the MNH Program's approach to antenatal care are focused visits with a skilled provider, aimed at ensuring the healthiest possible outcome for every mother and baby.

Antenatal care, the care a woman receives throughout her pregnancy, is important in helping to ensure that women and newborns survive pregnancy and childbirth. The traditional approach to antenatal care, which is based on European models developed in the early 1900s, assumes that more is better in care for pregnant women. Frequent routine visits are the norm, and women are classified by risk category to determine their chances of complications and the level of care they need. Many developing countries have adopted this approach without adjusting the interventions to meet the needs of their particular populations, taking into account their available resources or evaluating the scientific basis for specific practices.

The Maternal and Neonatal Health (MNH) Program promotes an updated approach to antenatal care that emphasizes quality over quantity of visits. The approach, focused antenatal care, recognizes two key realities: First, frequent visits do not necessarily improve pregnancy outcomes, and in developing countries they are often logistically and financially impossible for women. Second, many women who have risk factors never develop complications, while women without risk factors often do. So, when antenatal care is planned using a risk approach, scarce healthcare resources may be devoted to unnecessary care for “high-risk” women who never develop complications, and “low-risk” women may be unprepared to recognize or respond to signs of complications.

Following the World Health Organization's lead, the MNH Program takes the view that every pregnant woman is at risk for complications and that all women should therefore receive the same basic care and monitoring for complications. The Program does not recommend relying on certain measures and risk indicators that are routine in traditional antenatal care (such as height, ankle edema and fetal position before 36 weeks), because they have not been proven to be effective in improving pregnancy outcomes.

Goal-Directed Interventions

The MNH Program's approach focuses on evidence-based interventions that address the most prevalent health issues that affect mothers and newborns. Each focused antenatal care visit includes interventions that are appropriate to the woman's stage of pregnancy and that address her overall health and preparation for birth and care of the newborn.

Detection and Prevention

The skilled provider interviews and examines the woman to detect problems that might affect the woman's pregnancy and require additional care. Conditions that could severely affect the mother or baby if they are left untreated include HIV, syphilis and other sexually transmitted diseases,

malnutrition and tuberculosis (especially in populations where HIV is common). Also, conditions such as severe anemia, vaginal bleeding, pre-

best practices

eclampsia/eclampsia, fetal distress and abnormal fetal position after 36 weeks may cause or be indicative of a life-threatening complication. Early treatment of these conditions can mean the difference between death and survival for the woman and her newborn.

In addition to early detection and treatment of problems, two simple preventive interventions have proven effective in reducing maternal and neonatal deaths. The first, tetanus toxoid, is a stable, inexpensive vaccine that helps to prevent neonatal and maternal tetanus. Tetanus causes about 500,000 neonatal deaths and 30,000 maternal deaths each year. The second intervention, iron and folate supplementation, helps to prevent iron deficiency, the single most prevalent nutritional deficiency affecting pregnant women. Iron deficiency can lead to severe anemia, which is associated with preterm delivery, inadequate intrauterine growth, and maternal and fetal deaths.

The MNH Program also supports the following preventive

treatments in areas where the diseases or deficiencies are common: intermittent preventive treatment for malaria, presumptive treatment for hookworm, vitamin A supplementation and iodine supplementation.

Counseling and Health Promotion

Focused antenatal care visits should include time for providers and women to talk about important issues related to nutrition and health during pregnancy, including the following:

- Danger signs of complications during pregnancy and labor: how to recognize them, what to do and where to get help
- Nutrition: the importance of good nutrition to the health of the mother and baby; how to get enough calories and essential nutrients for a healthy pregnancy; micronutrient supplements; importance of iron intake
- Risks of using tobacco, alcohol, medications and local drugs
- Rest and avoidance of heavy physical work
- Family planning: benefits of child spacing to mother and child; options for family planning services following the baby's birth
- Breastfeeding: health and practical benefits; exclusive breastfeeding; importance of immediate breastfeeding after birth
- HIV and other sexually transmitted diseases: the use of condoms for dual protection from pregnancy and disease; other measures for prevention; availability and benefits of testing; and specific issues related to mother-to-child transmission and living with AIDS (after a positive test result)

Birth Preparedness and Complication Readiness

Focused antenatal care includes attention to a woman's preparations for childbirth, such as getting the support she will need from her provider,

When the Kasongo Project Team studied 14 women in an antenatal clinic in Kasongo, Zaire, in 1994, they found that 75% of the women who developed obstructed labor were not identified as "at risk," while 90% of women who were identified as "at risk" did not develop obstructed labor.

family and community, and making arrangements for her newborn. The skilled provider and the woman should plan for the following:

- A skilled provider to be at the birth
- The site for the birth and how to get there
- Items needed for the birth, whether it will be at home or in a healthcare facility
- Money to pay for the skilled attendant and any needed medications
- Support after the birth, including someone to accompany the woman during the birth and someone to take care of her family while she is away

In addition, since 15 percent of all pregnant women develop a life-threatening complication and most of these complications cannot be predicted, every woman and her family must be ready to respond to such a problem. Every woman should have a plan for the following:

- A person designated to make decisions on her behalf, in case she is unable to make them
- A way to communicate with a source of help (skilled attendant, facility, transportation)
- A source of emergency funds
- Emergency transportation
- Blood donors

Focused Antenatal Care in the MNH Program

The MNH Program promotes focused antenatal care as one of a group of essential maternal and neonatal care interventions that are evidence-based and that build on global lessons learned about what works to save the lives of mothers and newborns. Focused antenatal care is an integral part of the Program's learning materials, including two technical manuals endorsed by the global health community: *Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors* (published by the World Health Organization) and *Basic Maternal and Newborn Care* (forthcoming from JHPIEGO with substantial contributions by the American College of Nurse-Midwives and BASICS). The important role of antenatal care in helping women prepare for birth and possible complications is illustrated in the MNH Program's behavior change intervention aid, Birth Preparedness and Complication Readiness: A Matrix of Shared Responsibility (available on the MNH Program website).

Newborn Health

The first week after delivery is the most critical time for both newborns and mothers. Much progress has been made in improving child survival after one month of age, but death rates in the first 28 days of life (newborn deaths) are still too high. Basic interventions can reduce this risk.

Most newborn deaths occur at home, often after childbirth without a skilled provider. As the proportion of births with a skilled provider increases, fetal and newborn deaths decrease.

The Truth about Newborn Deaths

9.3 million babies die every year during the last months of pregnancy or the first month of life

Approximately 3.4 million newborns die within the first week of life

Of those deaths, 66% occur during the first 24 hours

More than 98% of fetal and newborn deaths occur in developing countries; the risk of newborn death is almost 100 times higher in sub-Saharan Africa than in Northern Europe

Information on the numbers and causes of fetal and newborn deaths is often unavailable or unreliable. The most important direct causes of late fetal and newborn deaths are infections, birth asphyxia and congenital abnormalities. More than half of these occur in babies with low birth weight (LBW)—i.e., under 2.5 kg. The gestation and birth weight of the baby are, therefore, the strongest predictors of whether the baby will live or die. A full-term baby who is growth restricted during pregnancy (commonly due to poor maternal nutrition or infection) has about a three times greater chance of dying than a normal birth weight, full-term baby. A preterm baby (born before 37 weeks of gestation) has a 9 to 20 times greater chance of dying than a full-term baby.

It has been estimated that up to 70% of newborn deaths could be prevented by interventions for the mother during pregnancy and childbirth and by simple, low-technology newborn care such as cleanliness (following recommended infection prevention practices), breast-feeding and warmth. The SEARCH project in rural India, for example, was able to reduce neonatal mortality by over 60% by simply addressing neonatal infections in the community.

Interventions During Pregnancy

Several interventions need to be implemented during pregnancy to increase newborn survival, including high-quality antenatal care with standards for care and timely recognition and management of complications. Good nutrition during pregnancy is promoted, including macronutrition, the balancing of protein-energy nutrition and reduced physical workload. Micronutrition is also supported, including:

- iron and folate supplementation where anemia is common;
- vitamin A supplementation where vitamin A deficiency is prevalent; and
- iodization of salt and treatment of iodine deficiency with iodized oil.

Infections during pregnancy can have a serious effect on newborn survival. Newborn health requires the prevention and treatment of infections in pregnancy, including presumptive treatment of malaria and hookworm in endemic areas, identification and treatment of syphilis (ideally within one visit) and tetanus toxoid immunization (twice during pregnancy or a lifetime total of five). Another important intervention is the promotion of

voluntary counseling
and testing for
HIV/AIDS for
mothers, with locally
feasible options to
reduce the risk of
mother-to-child
transmission of

best practices

HIV/AIDS. Proper eye care at birth protects the newborn from gonococcal eye infections.

Newborn care includes birth preparation and complication readiness planning. Expectant mothers receive support to learn about newborn care and are encouraged and prepared to breastfeed their newborns.

Interventions During Childbirth and the Immediate Postpartum Period

Every woman should have access to a skilled provider for the birth of her child and timely access to emergency obstetric care services, with standards of care, competent staff, safe blood and sustainable provisions of supplies. All newborns should be provided essential basic care, including the following:

- Clean chain—ensuring a clean birthing area, especially the surface, the provider’s hands, the blade for cutting the umbilical cord and the cord tie
- Warm chain—immediately drying and wrapping the newborn in a clean cloth and

keeping the newborn with the mother in a warm room

- Breastfeeding—promoting early initiation of breastfeeding (within 30 minutes after birth) and exclusive breastfeeding (only breastmilk) for the first 4 to 6 months

Newborns with low birth weights require special care and support. Low birth weight newborns need extra support for warmth, including the use of kangaroo care for stable LBW newborns. Providers are encouraged to pay particular attention to timely identification and management of complications such as jaundice and infections. Mothers receive extra support for breastfeeding, including counseling for expression of milk and feeding by cup or spoon.

Sick newborns require prompt emergency care. The parents of newborns are counseled on complication readiness, including knowledge of newborn danger signs and plans for how to respond (funds, transport). MNH Program interventions include mobilizing facilities, providers, communities and families around birth preparedness and complication readiness for both the mother and the newborn. The Program also works to ensure access to high-quality emergency care services for the newborn, including standards for care of the sick newborn, competent staff and sustainable supplies and drugs.

Preventing Postpartum Hemorrhage: Active Management of the Third Stage of Labor

The Truth about Maternal Death and PPH

515,000 women die during pregnancy and childbirth every year

99% of maternal deaths occur in developing countries

130,000 women bleed to death each year while giving birth

2/3 of women with PPH have no identifiable risk factors

90% of cases of PPH are due to uterine atony

Percentage of Maternal Deaths Due to PPH

Sub-Saharan Africa: 25%

West Africa: 27%

Indonesia: 45%

There are numerous definitions of postpartum hemorrhage (PPH). The most widely recognized definition is blood loss after childbirth in excess of 500 mL. Because it is often difficult to accurately measure blood loss, the true incidence of PPH may be underestimated by up to 50%.

The majority of cases of PPH occur in the immediate postpartum period (within 24 hours after birth) and are due to uterine atony, a failure of the uterus to properly contract after the child is born. As a result, bleeding from the blood vessels in the uterus is not controlled. Without immediate and proper medical attention, a woman with PPH will probably die. Anemic women are particularly susceptible to such blood loss.

Maternal mortality due to PPH is highest where there is poor access to skilled providers, transport systems and emergency services. This is not surprising considering that a woman will die within two hours, on average, after the onset of PPH if she does not receive proper treatment (e.g., appropriate drugs, blood transfusion or surgical intervention).

Consequences of Postpartum Hemorrhage

Women who survive PPH are likely to suffer from anemia and other complications. These women often must receive blood transfusions and are susceptible to the associated risks of transfusion reactions or infection with HIV or hepatitis. Bleeding that cannot be controlled using drugs often requires surgery, including hysterectomy. Such procedures are costly and painful and may be emotionally devastating to the woman and her family. In addition, they carry the risk of infection, reactions to anesthesia and other complications.

Risk of Postpartum Hemorrhage

Although some factors have been associated with an increased incidence of uterine atony leading to PPH, two-thirds of the women who hemorrhage after childbirth have no identifiable risk factors. Therefore, every woman must be closely monitored after childbirth for signs of hemorrhage.

Preventing Postpartum Hemorrhage: Active Management of the Third Stage of Labor

The third stage of labor is the period of time from the birth of the child until the placenta is delivered. A series of procedures, conducted during the third stage and collectively called active management, enhance the ability of the uterus to contract after the child is born. By decreasing the amount of time necessary to deliver the placenta, active management can prevent PPH by preventing uterine atony. Active management consists of:

- giving a drug (uterotonic), within one minute of birth, that causes the uterus to contract;
- early clamping and cutting of the umbilical cord; and
- applying controlled traction on the umbilical cord while applying counter-traction on the uterus.

Following the delivery of the placenta, the uterus is massaged through the abdomen to ensure that it remains contracted.

Uterotonic Drugs

Giving women oxytocin immediately after childbirth is probably the single most important intervention used to prevent PPH. Women given oxytocin lose less blood, resulting in a decreased incidence of PPH and anemia. A woman receiving oxytocin delivers her placenta faster and is less likely to require manual removal of her placenta, a painful procedure that increases the risk of infection.

Timing of Administration

Oxytocin is most effective when administered within one minute after the birth of the baby. Waiting to give oxytocin until after the placenta is delivered increases the woman's risk of uncontrolled bleeding.

Oxytocin and Ergometrine

Oxytocin alone and oxytocin plus ergometrine are generally equally effective in reducing the incidence of PPH. Giving oxytocin alone, however, is associated with fewer side effects (e.g., nausea, vomiting and increased blood pressure). In addition, ergometrine cannot be given to women with high blood pressure (a common problem in pregnancy).

Misoprostol

Prostaglandins are effective in controlling hemorrhage but most have the disadvantages of being more expensive and having increased side effects (e.g., diarrhea, vomiting and abdominal pain). One notable exception is misoprostol, a prostaglandin analogue currently being investigated as a potential uterotonic drug for use in active management of the third stage of labor. Studies to date indicate that misoprostol is effective in reducing the incidence of PPH without the side effects associated with other uterotonic drugs. Furthermore, misoprostol is inexpensive, stable at room temperature and can be given orally—all of which are tremendous advantages over currently available uterotonic drugs.

A Few Simple Procedures Save Lives

Active management of the third stage of labor can substantially decrease the following:

- Incidence of PPH due to an atonic uterus
- Length of the third stage of labor
- Need for additional drugs to treat excessive bleeding
- Need for a blood transfusion
- Need for surgical intervention
- Incidence of anemia and other problems associated with excessive blood loss

Performing just a few simple procedures—giving an uterotonic drug, clamping and cutting the umbilical cord, applying traction on the umbilical cord while applying counter-traction on the uterus and massaging the uterus through the abdomen—has the potential to prevent more than 130,000 maternal deaths every year.

The Skilled Provider: A Key Player in Saving the Lives of Women and Newborns

Inexpensive, low-technology measures could prevent or effectively manage the majority of maternal and newborn deaths in developing countries.

The majority of maternal and newborn deaths are caused by complications or conditions that could be prevented or more effectively managed through inexpensive, low-technology measures. The single most critical intervention in saving the lives of women and newborns is the presence of a skilled provider during childbirth and the immediate postpartum/newborn period. The skilled provider can assist in normal deliveries and also manage or stabilize and refer for complications—all of which are critical interventions in reducing maternal and newborn mortality. Although most deaths occur during the immediate postpartum/newborn period, skilled care is also beneficial during the antenatal and postpartum/newborn periods. The Maternal and Neonatal Health (MNH) Program is committed to promoting the training and accessibility of skilled providers.

Approximately 515,000 women die annually during pregnancy, childbirth or the postpartum period.

An estimated 9.3 million late fetal and neonatal deaths occur annually.

Skilled Attendance During Pregnancy and Childbirth

Skilled attendance is a system of services that function together to provide essential care to women and newborns from pregnancy through the postpartum/newborn period. In order for skilled attendance to have the greatest impact in reducing maternal and newborn mortality, all elements of this system must be in place. Key elements are the support of a policy environment that promotes the provision of and access to skilled care, existence of a functioning system for stabilization and referral, the availability of essential equipment and supplies and the presence of a skilled provider.

Providing the Care Women and Newborns Need to Stay Alive

A skilled provider is a healthcare provider with the knowledge, skills and qualifications necessary to deliver essential maternal and newborn care. The settings in which care may be delivered include the home, community health post, health center and district hospital. The exact qualifications necessary to be considered a skilled provider differ from country to country. And the term skilled provider is not specific to any one profession; rather it designates a person (midwife, doctor, nurse or other healthcare provider with midwifery skills) who provides women and newborns the care they need to stay alive and healthy.

Skilled Provider Competencies and Responsibilities

The core competencies described below include midwifery and life-saving skills. They reflect the minimum skill set of the skilled provider. The skilled provider also has core responsibilities in helping to establish and maintain safe and effective healthcare services.

Core Competencies*Management of the normal pregnancy, childbirth or postpartum/newborn period*

- Gathers relevant information about the woman or newborn through targeted history taking, physical examination and screening
- Ensures that the pregnancy, childbirth or postpartum/newborn period is progressing normally and anticipates potential problems
- Provides preventive care and promotes healthy practices to maintain a normal pregnancy, childbirth or postpartum/newborn period
- Helps the woman and her family prepare for birth and possible emergencies
- Assists in normal labor and childbirth and performs essential postpartum/newborn interventions

Early detection and diagnosis of major complications/conditions

- Recognizes signs and symptoms of complications/conditions
- Further investigates abnormal signs and symptoms when needed
- Makes an accurate diagnosis

Skilled and timely management or stabilization and referral for major complications/conditions

- Performs life-saving interventions
- Manages complications/conditions or
- Facilitates stabilization and referral of woman or newborn to a higher level of care as appropriate

Demonstration of key skills in all aspects of maternal and newborn healthcare

- Approaches clinical care in an organized and rational manner
- Individualizes care to meet the needs of the woman and her newborn and family
- Shows courtesy and respect for the woman and her newborn, family and culture
- Effectively communicates with the woman and her family
- Uses standard maternal and newborn practices (including infection prevention practices)
- Keeps careful records

The MNH Program is committed to developing a cadre of skilled providers throughout the countries where it has projects.

Core responsibilities*In helping to establish and maintain safe and effective healthcare services, the skilled provider*

- uses all available and appropriate means to protect and promote the health and survival of the woman and newborn
- pursues continuing education and further development of skill set
- provides care that is in accordance with national policies and standards and clinical care guidelines, and is appropriate to available resources
- continually assesses existing services
- builds on strengths, identifies gaps and works on practical solutions to fill any gaps

best practices

- supports activities that advocate or facilitate linkages among providers, facilities, communities and other key stakeholders in the care provision system

Skilled Providers Key to Saving Lives

The MNH Program is committed to developing a cadre of skilled providers throughout the countries where it has projects. The projects are working to develop these core competencies and responsibilities through collaborative training and standard-setting with local service providers and collaboration with policymakers. Advocacy, community and social mobilization, and behavior change are other important components in this effort. The skilled provider is a key player in saving the lives of women and newborns, and bringing about sustainable change is a complex process that requires awareness, commitment and action at all levels of decision-making and care provision.

Woman-Centered Care

In a woman-centered approach, women are not only the recipients of care; they are also active participants in addressing their healthcare needs.

“Health services can be considered women-friendly when they...empower users and satisfy their needs by respecting their rights to information, choice, safety, privacy and dignity and by being respectful of cultural and social norms.”¹

The Maternal and Neonatal Health (MNH) Program strives to reduce maternal and newborn mortality through implementing evidence-based clinical practices, ensuring the presence of skilled and motivated personnel during labor and birth, and strengthening policies that promote maternal and newborn survival. A technical intervention may be needed to save a woman’s or newborn’s life in the case of a maternal complication; however, it is often **how** that intervention is delivered that determines whether a woman will seek those services or recommend them to others. In other words, the existence of a clinically sound healthcare provision system may not necessarily ensure the use of healthcare services if the client is not pleased or satisfied with the way care is provided. Moreover, basic human rights dictate that a woman receive high-quality care, which includes treatment with dignity and respect.

A woman-centered approach to healthcare incorporates practices that support a woman’s preferences and maintain her dignity. In this approach, women are not only the recipients of care; they are also **active** participants in forming a partnership with the provider to address their healthcare needs. Moreover, a woman-centered approach places emphasis on the human element of the childbirth process—a frequently forgotten perspective in today’s “medicalized” cultural context.

The MNH Program fosters a woman-centered approach by emphasizing the treatment of women with respect and dignity, facilitating companionship during birth, encouraging continuous support by caregivers, offering choice of position for labor and birth, and implementing culturally sensitive practices.

Treating Women with Respect and Dignity

The way in which a healthcare provider communicates with a client can demonstrate respect and empower her toward self-care and informed choices. The MNH Program works with healthcare providers to help facilitate woman-centered communication practices among caregivers, the woman and her companions. In a woman-centered approach, women are:

- Greeted with respect and kindness
- Given privacy while awaiting and receiving healthcare
- Asked permission before a procedure is performed
- Given an explanation of what will happen during a visit or a procedure (and prior to each step of a procedure)

Often, minimal efforts are required to implement change. For example, healthcare providers can keep doors closed or locked during medical exams; if this is not possible, they can create a private space with a curtain or room divider. They can help ensure that women are draped or covered

¹ “Woman-friendly health services: Experiences in maternal care.” Report of a WHO/UNICEF/UNFPA Workshop, Mexico City, January 1999.

during the physical exam, and they can conduct counseling out of earshot of other clients or family members.

The MNH Program has encouraged positive change in various healthcare facilities. In Ghana, a MNH Program-trained physician initiated the renovation of the antenatal care clinic in the Tema Hospital so that women's visits occur in private cubicles to help guarantee privacy. And in the hospitals Rumah Sakit Ujung Berung and Rumah Sakit Astana Anyar in Bandung, Indonesia, midwives and doctors have purchased and installed divider curtains for all of the labor and delivery ward beds—not only ensuring privacy for a laboring woman, but also enabling her family members to be present without disturbing the privacy of neighboring women in the ward.

Facilitating Companionship During Birth

Ensuring the presence of a birth companion (female relative, traditional birth attendant [TBA] or husband) during labor and birth is another low-cost intervention with proven benefits. Consistent with cultural norms in many traditional societies, the practice is promoted through a wealth of anecdotal evidence that highlights the positive effect of a birth companion throughout labor and birth. A randomized controlled trial in Botswana also concluded that the presence of a female relative improved birth outcomes.² Other studies have demonstrated that continuous empathetic and physical support is associated with shorter labor, less medication and epidural analgesia, and fewer operative deliveries.

The MNH Program incorporates this particular practice into its efforts in global and regional initiatives. For instance, as part of its culturally adaptive hospital initiative in Guatemala, the MNH Program has strengthened links between TBAs and the formal healthcare facilities, providing a room in the hospital for TBAs to wait with the women they accompany. And though the Hospitals Rumah Sakit Ujung Berung and Rumah Sakit Astana Anyar in Indonesia have allowed the presence of female family members during labor, childbirth and the postpartum period, midwives and doctors now encourage a woman to choose whether she would also like her husband to coach her during the process.

Encouraging Continuous Support by Caregivers

The MNH Program emphasizes the importance of continuity of care for women during pregnancy, labor and the childbirth process. Many women prefer to have one caregiver during labor rather than a number of caregivers from one intervention or examination to the next. Moreover, a Cochrane review of 14 trials concluded that continuous support during labor from caregivers appears to have a number of benefits for mothers and their babies, including reduced likelihood of medication for pain relief, reduced operative vaginal delivery and reduced cesarean delivery.

² Madi BC et al. Effects of Female Relative Support in Labor: A Randomized Controlled Trial. *Birth* 26(1), March 1999, 4–8. Also Kennel J and S McGrath. Commentary: Practical and Humanistic Lessons from the Third World for Perinatal Caregivers. *Birth* 26(1), March 1999, 9–10.

In its clinical skills standardization courses, the MNH Program trains participants about the benefits of continuity of care. In the Tema Hospital in Ghana, a MNH Program-trained physician helped modify the process of antenatal care provided at the facility so that each woman now receives antenatal care from one midwife from the beginning to the end of the visit, contrasting with the previous “assembly line” approach in which a woman used to move from midwife to midwife for blood pressure readings, blood tests, abdominal exams, and so on.

Offering Choice of Position for Labor and Birth

During labor, women should be offered the choice to walk or move about as they desire; during birth, women should be able to choose the position in which they feel most comfortable. For centuries, there has been controversy in the medical community about whether being upright or lying down is better for women giving birth. However, evidence suggests that the use of upright positions, as compared with the supine position (lying on the back), is associated with a shorter second stage of labor, fewer assisted births, fewer episiotomies, fewer reports of severe pain, less abnormal heart rate patterns for the fetus, fewer operative vaginal births, better non-pharmacological pain relief during labor (massage, relaxation techniques, etc.) and less postpartum depression.

In medicalized healthcare facilities, the supine position is most commonly implemented for women giving birth because it is easier for the provider. In most traditional societies, however, women give birth in an upright position. This upright position allows freedom in movement throughout labor and childbirth and can be any non-supine position, such as squatting, sitting on hands and knees, lying on one’s side, semi-sitting or sitting.

Although each position has its advantages and disadvantages, the important element of woman-centered care is that a woman has a choice as to how she would like to give birth. In the Patan Hospital in Nepal, as a result of the MNH Program’s clinical skills standardization efforts, women are now allowed to move around throughout labor and choose the position they prefer for labor and childbirth.

Implementing Culturally Adapted Practices

The MNH Program recognizes that practices considered women-friendly in some cultures may not be appropriate in other cultures. To that end, the MNH Program works in concert with local healthcare providers and the community to determine which practices are culturally accepted and preferred by women in those settings so that local healthcare services can be adapted accordingly.

For instance, MNH/Guatemala has worked to identify and change practices that have been rejected by the culture, while simultaneously identifying culturally appropriate hospital practices to take their place. Hospitals across Guatemala are now incorporating culturally accepted and non-harmful practices into their maternal and newborn care services.

A woman-centered approach to maternal healthcare emphasizes the provision of high-quality, evidence-based care that is culturally sensitive,

best practices

empowers the woman for informed self-care, and treats the woman with dignity and respect. The MNH Program supports a woman-centered approach throughout efforts to promote maternal and newborn survival.

PUBLICATIONS AND PRESENTATIONS

Information Sheets

Best Practices – summaries of the core interventions and strategies advocated by the Program

- Addressing Gender in Maternal and Newborn Healthcare
- Detection and Management of Hypertensive Disorders of Pregnancy
- Developing Experts for Maternal and Neonatal Health
- Focused Antenatal Care: Planning and Providing Care during Pregnancy (English and French)
- Mother-to-Child Transmission of HIV/AIDS: Reducing the Risk
- Newborn Health
- Performance and Quality Improvement (English and French)
- Preventing Postpartum Hemorrhage: Active Management of the Third Stage of Labor (English and Spanish)
- The Skilled Provider: A Key Player in Saving the Lives of Women and Newborns (English and Spanish)
- The Traditional Birth Attendant: Linking Communities and Services
- Woman-Centered Care

Country Profiles – descriptions of the focus and activities of country programs

- Bolivia
- Burkina Faso (English and French)
- Guatemala (English and Spanish)
- Honduras
- Indonesia
- Nepal
- Tanzania
- Zambia

Making a Difference – profiles of MNH Program experts and advocates

- Ambassador of Quality: An Interview with Sylvia Deganus
- An Ambitious Agenda: Regional Expert Responds to Call for Training in Burkina Faso
- Beyond the Call of Duty: Midwives Work to Improve Care in Ugandan Hospitals
- Change Agents in Bangladesh, Uganda and Uruguay: Extending beyond MNH Program Countries
- Nurse and Ob/Gyn Work to Improve Women's Healthcare Practices in Guatemala

Technical Area Profiles – overviews of the MNH Program technical components

- Behavior Change Interventions (also in Spanish)
- Maternal and Neonatal Health (MNH) Program (overview) (also in Spanish)
- Monitoring and Evaluation (also in Spanish)
- Policy and Finance (also in Spanish)
- Service Delivery (also in Spanish)
- Social Mobilization for Safe Motherhood

MNH Program Highlights, Case Studies and News – highlights of global and country-level strategies and interventions

- Changing Facility-Based Practices: Experiences from Burkina Faso, Nepal and Guatemala
- Developing and Implementing a Hospital-Based Surveillance System for Maternal and Newborn Health
- Guatemala: Developing and Implementing Community-Based Life-Saving Plans
- Guatemala District Conducts First Forum on Safe Motherhood
- Helping Families Worldwide (also in Spanish)
- Implementing a Performance and Quality Improvement Approach at the Country Level
- Promoting Focused Antenatal Care at the Country Level (also in French)
- Simple Approaches Save Newborns in Respiratory Distress
- Social Mobilization in the Maternal and Neonatal Health Program: Global and Country Activities

Other Publications and Resources

- Birth Preparedness/Complication Readiness: A Matrix of Shared Responsibility (also in French and Spanish)
- MNH Program Expert Trainer Directory, Africa Region
- Guidelines for Technical Adaptation and Translation of *Managing Complications in Pregnancy and Childbirth*
- “Implementing Global Maternal and Neonatal Health Standards of Care.” 2001. A JHPIEGO Workshop Report. Published in English and Spanish.
- R Johnson. 2001. “Implementing Global Standards of Maternal and Neonatal Healthcare at the Provider Level: A Strategy for Disseminating and Using Guidelines.” JHPIEGO Strategy Paper no. 10. Baltimore: JHPIEGO.
- *MNH Update*, a monthly newsletter about MNH Program activities
- MNH Program Website: <http://www.mnh.jhpiego.org/>

MNH Program-Supported Publications

- World Health Organization (WHO). 2000. *Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors*. Geneva: WHO.
- Program for Appropriate Technology in Health. 2001. “Preventing Postpartum Hemorrhage: Managing the Third Stage of Labor.” *Outlook* 19, no. 3 (September): 1–8.
- KM Perreira et al. 2002. “Increasing Awareness of Danger Signs in Pregnancy through Community- and Clinic-Based Education in Guatemala,” *Maternal and Child Health Journal* (forthcoming).
- White Ribbon Alliance for Safe Motherhood. *Awareness, Mobilization, and Action for Safe Motherhood: A Field Guide*. 2000. Washington: White Ribbon Alliance for Safe Motherhood. Supported publication in English and translation into French and Spanish.
- Child Health Research Project. 1999. *Reducing Perinatal and Neonatal Mortality: A Special Report*.
- “What’s New in the Media/Materials Clearinghouse: Maternal and Neonatal Health.” 2000. Baltimore: Johns Hopkins University Center for Communication Programs.

Staff Presentations, 2001

Barbara Kinzie, "Antenatal Care: Old Myths, New Realities," MAQ Mini-University, Washington, 20 April.

Harshad Sanghvi, "Medical Treatment of Incomplete Abortion," MAQ Mini-University, Washington, 20 April.

Robert Johnson, "Implementing Global Maternal and Neonatal Health Standards of Care," panel presentation, Global Health Council, Washington, 31 May.

Cindy Stanton, "Performance Measurement of Provider-Oriented Interventions in Maternal Health," panel presentation, Global Health Council, Washington, 31 May.

William Terry, "Met Need: Issues in Measurement and Decision Making," poster presentation, Global Health Council, Washington, 31 May.

Sreen Thaddeus, "Indonesia's SIAGA Campaign: Reducing Delays in Obstetric Emergencies," Global Health Council, Washington.

Barbara Kinzie, "Review of Partograph use and Antenatal Risk Approach and Their Influence on Care in Nsambya Hospital, Uganda," USAID, Washington, 8 June.

Barbara Kinzie, "Antenatal Care: Old Myths, Current Realities," Office of Population, USAID, Washington, 21 June.

Barbara Kinzie and Cindy Stanton, "Antenatal Care: Old Myths, New Realities," USAID, Washington, 4 October.

Cindy Stanton, "Current Issues in the Measurement of Maternal Mortality," Population Reference Bureau, Washington, 17 October.

Nancy Russell, "Social Mobilization: Building Alliances to Promote Maternal and Neonatal Health," CEDPA, Washington, 5 December.

Nancy Russell, "Social Mobilization: Building Alliances to Promote Maternal and Neonatal Health," USAID, Washington, 6 December.