

---

---

---

# MotherCare

## Lessons Learned 1989-1993

*Summary Final Report*



MotherCare™

This publication was made possible through support provided by the Office of Health,  
United States Agency for International Development, under the terms of  
Contract No. DPE-5966-Z-00-8083-00.

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.

**MOTHECARE**

**Lessons Learned 1989 - 1993**

*Summary Final Report*

Edited by Deborah Gordis  
with contributions by  
Marjorie Koblinsky  
Colleen Conroy  
Kim Winnard and  
Barbara Kwast

## ACKNOWLEDGMENTS

In 1987 the Safe Motherhood Initiative was launched by representatives from a number of international organizations in collaboration with many from developing countries concerned with the high levels of maternal mortality. In response to the need expressed for this very neglected area in 1989, the United States Agency for International Development planned and launched the Maternal and Neonatal Health and Nutrition Project, a component of which became MotherCare. This subproject has as its goals the reduction of maternal and neonatal mortality and related morbidities, and the promotion of the health of women and newborns. Staff of USAID who took part in the planning, development, and implementation of this effort are to be congratulated for its breadth and depth; particular appreciation goes to Mary Ann Anderson and Ann Van Dusen, plus staff in the USAID missions in countries where MotherCare has focused its efforts: Bolivia, Guatemala, Nigeria, Uganda and Indonesia.

MotherCare's work is the combined effort of many dedicated individuals whose names are listed on the next pages. Equal recognition goes to MotherCare staff, at headquarters, among the subcontractors, and in-country, as well as to the local project teams without whose expertise, commitment and endurance MotherCare would have been left far from its goals.

The time was short, the process of project planning and implementation was not always the easiest, and the funds were always a limiting factor given the immensity of the challenge. What made it so enjoyable was the synergy of spirit among those who worked on the project. The problems are compelling and there exists no silver bullet in this field, but the reward has been great.

Finally gratitude, respect and admiration is given to the women, their families and their health care providers who have donated their perspectives, ideas and efforts to the design and implementation of these projects.

b'

## MOTHERCARE STAFF/DC

Project Director	Marjorie Koblinsky (1989 - 1993)
Deputy Director	Colleen Conroy (1989 - 1993)
Long-term Project Coordinator	Patricia Taylor (1989 - 1992)
Administrative Officer	Mary King (1992 - 1993) Saipin Vongkitbuncha (1989 - 1992)
Women's Health Advisor Women's Health Advisor, Save the Children	Barbara Kwast (1992 - 1993) Usha Shah (1989 - 1990)
Community Training Advisor, Center for Development and Population Activities (CEDPA)	Willa Pressman (1990 - 1991) Carol Carp (1989 - 1990)
Senior Communication Advisor, The Manoff Group	Kim Winnard (1991 - 1993)
IEC Advisor, The Manoff Group	Mona Moore (1989 - 1990)
Research Associate, The Manoff Group	Mary McInerney (1991 - 1993)
Program Associate	Patricia Daunas (1992 - 1993) Marcia Monterosso (1991 - 1992)
Program Assistant	Bernadine Skowronski (1991 - 1993) Anne Helveston (1989 - 1992)
Secretary	Thomas Daniel (1989 - 1991)

- C -

## **MOTHERCARE SUBCONTRACTOR STAFF**

### **The American College of Nurse-Midwives (ACNM)**

Mary Ellen Stanton, MotherCare/ACNM Liaison (1991 - 1993)

Peg Marshall, MotherCare/ACNM Liaison (1990 - 1993)

Cindy Kaufman, MotherCare/ACNM Liaison (1990 - 1991)

### **The Population Council**

Beverly Winikoff, Senior Research Advisor (1989 - 1993)

Nancy Sloan, Research Coordinator (1990 - 1993)

### **The Manoff Group**

Marcia Griffiths, IEC Advisor (1989 - 1993)

### **Save the Children**

Lauren Galvao, Tetanus/Medical Advisor (1991 - 1993)

Katherine Kaye, Epidemiologist (1992 - 1993)

Wendy Slusser, Tetanus/Medical Advisor (1991 - 1992)

Gretchen Berggreen, Tetanus/Medical Advisor (1989 - 1990)

Sharon Gould, Tetanus/Medical Advisor (1990)

### **Other Subcontracts**

The Center for Development and Population Activities

The Western Consortium

The Women's International Public Health Network

- k

**MOTHECARE  
FIELD PROJECT STAFF**

**Bangladesh**

Afzal Hussain, Principal Investigator, SCF, Nasirnagar Upazila Pilot Project

Najma Khatun, Senior Medical Officer, SCF, Nasirnagar Upazila Pilot Project

**Bolivia**

Bill Bower, Resident Director, Columbia University, Cochabamba Reproductive Health Project

Lisa Howard-Grabman, Co-Director, SCF, Inquisivi "Warmi" Health Project

**Ecuador**

Lenín León, Principal Investigator, Isidro Ayora Maternity, Kangaroo Mother Method Project

**Guatemala**

Barbara Schieber, Principal Investigator, INCAP, Quetzaltenango Project

**Indonesia**

Anna Alisjahbana and James Thouw, Principal Investigators, University of Padjadjaran, Perinatal Regionalization Project

Endang Achadi, Principal Investigator, (1992 - 1993), University of Indonesia, Indramayu Project

Budi Utomo, Principal Investigator, (1990 - 1992), University of Indonesia, Indramayu Project

Riduan Joesoef, Principal Investigator, Center for Disease Control, Bacterial Vaginosis Project

Gulardi Wiknjastro, Co-Investigator, University of Indonesia, The Center for Health and Research, Bacterial Vaginosis Project

Hanny Sumampouw, Co-Investigator, University of Airlangga, Bacterial Vaginosis Project

Poedji Rochjati, Principal Investigator, R.S. Soetomo Hospital, East Java Safe Motherhood Project and GDS Iron Trial Project

M. Marsianto, Principal Investigator, R.S. Soetomo Hospital, Gastric Delivery System Iron Trial Project

Mary Jo Hansell, Indonesia Research Coordinator, MotherCare Project, John Snow, Inc.

**Kenya**

Françoise Jenniskens, Principal Investigator, Dept. of Microbiology, WHO Center, University of Nairobi, Congenital Syphilis Project

- 2 -

Maureen Temmerman, Principal Investigator, Department of Microbiology, WHO Center,  
University of Nairobi, Congenital Syphilis Project

Nigeria

Lola Payne, Project Coordinator, John Snow, Inc., Maternal Health Care Project

Data Phido, IEC Program Officer, Population Communication Services, Maternal Health Care  
Project

Uganda

Sandra Buffington, Resident Advisor, ACNM, Uganda Life Saving Skills Project

Anne Otto, Training Coordinator, ACNM, Uganda Life Saving Skills Project



## ACRONYMS

EOF	Essential Obstetric Functions
IEC	Information, Education and Communication
LSS	Life Saving Skills (for midwives)
MCH	Maternal-Child Health
MNH	Maternal-Neonatal Health
NCC	Nairobi City Council
NGO	Nongovernmental Organization
PVO	Private Voluntary Organization
RPR	Rapid Plasma Reagin
SCF	Save the Children Federation
STD	Sexually Transmitted Disease
TBA	Traditional Birth Attendant
USAID	United States Agency for International Development
WHO	World Health Organization

## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY</b> .....	1
--------------------------------	---

### FINAL REPORT SUMMARY

A. Introduction: The Development of MotherCare .....	5
B. The MotherCare Approach .....	7
C. Lessons Learned from the Intervention Strategies .....	13
D. Recommendations .....	32
E. A Comprehensive Program for Women's Health .....	38

### BOXES

BOX 1: Elements of a Program to Improve Maternal and Neonatal Health and Nutritional Status .....	7
BOX 2: What Pregnant Women Can Do for Themselves: Health Promoting Behaviors and Practices .....	23
BOX 3: What Health Care Providers Can Do to Promote Safe Motherhood: Objectives and Audiences for Affecting Behaviors .....	25

### TABLES

TABLE 1: A Comprehensive Health and Nutrition Program for Women and Newborns .....	40
TABLE 2: Possible Priorities in Three Settings Ranging from A, Weakest Health Systems, to C, More Developed Systems .....	A-x

### APPENDICES

APPENDIX A: Strategies for Safe Motherhood in Representative Settings .....	A-i
APPENDIX B: Tools for Programming in Maternal and Neonatal Health and Nutrition ...	B-i

*h.*

## EXECUTIVE SUMMARY

In the 1980's, research data revealing that 500,000 women worldwide (95% in the developing world) died yearly during childbirth shocked policy makers at international and national levels. Over 90% of the causes—hemorrhage, hypertensive disorders of pregnancy, puerperal sepsis, obstructed labor, and septic abortion—were known to be preventable. The World Health Organization estimated that safe motherhood programs could reduce maternal mortality by half by the year 2000. In so doing, infant mortality could potentially decline by one fifth to one third through the reduction of consequent early neonatal deaths. Seven million annual perinatal deaths could be reduced by one third to one half through improved management during delivery. The growth and development of children could be improved by reducing the number—24 million in 1993—of low-birth-weight babies born annually, as well as by reducing the incidence of other problems occurring during the perinatal period (e.g., cerebral palsy, affecting over 2 million children annually). Acute pregnancy-related morbidities suffered by over 50 million women, as well as chronic long-term disabilities (e.g., fistula, prolapse) now burdening millions more women, could also be prevented or reduced in number and severity.

Recognizing the magnitude and seriousness of these problems and the complementarity of safe motherhood programs to on-going projects in family planning and child survival, USAID developed a ten-year maternal and neonatal health project in 1988 to improve the health, nutritional status and survival of women of reproductive age and their children in developing countries. Under this umbrella, USAID inaugurated a five-year (1988-93) contract with John Snow, Inc., known as MotherCare (No. 936-5966.01).

With the completion of the first five-year phase of MotherCare, major conclusions can be drawn about the process of designing and implementing a maternal and neonatal health and nutrition program and the intervention packages that are feasible. Several projects have been successful, yet more analysis is required to understand the causal pathways to the successes that have been observed.

There is no simple recipe for improving maternal and neonatal health. A composite of specific technologies that can reduce maternal and neonatal mortality or prevent related morbidities is gaining wider recognition (see Table 1). However, the foundation for successful programming is not any particular technology but an attitudinal change assigning a high priority to maternal and neonatal health and nutrition and the coordination of care that will address women's needs.

Based on what is now known, after five years of program activity, the following six recommendations are submitted as fundamentals of successful maternal and neonatal health and nutrition programming:

- 1. Put maternal and neonatal health and nutrition on the top of the agenda.**

The Safe Motherhood Initiative began in 1987 with the challenge "Where is the M in the MCH?" Nearly 7 years later, we are still asking the same question. MotherCare's agenda includes the newborn as well as the mother because the two lives are so closely bound. And the target group is not only policy makers, but also includes women, spouses and partners, community leaders

and front line providers as well. Women, often put last and given least by others inside and outside the family, are unaccustomed to speaking out for themselves in many societies. Reaching these women, working with them, "empowering" them through women's groups or other supportive means, has the potential to save many lives, as is implied by the success of the MotherCare project in Inquisivi, Bolivia.

While policy makers may now seem to be familiar with the concept of safe motherhood programming, the gap between knowing and doing remains. Front line providers may still not have the linkages with communities or with referral sites necessary to ensure timely referral of women with complications; the supplies to provide even basic primary health care for women; or the motivation to do so. Getting maternal and neonatal health care and nutrition onto the action agenda of those who need the care and those who provide the care requires strong policies.

## **2. Know and cater to the woman's and her community's needs and constraints.**

A multitude of traditions surround pregnancy and childbirth. Some customs and beliefs may be hazardous, such as the belief that obstructed labor is caused by adultery. In a community sharing this belief, a woman may fail to receive appropriate care if her condition is perceived to be punishment for her misconduct. Other traditions may be beneficial. The squatting position for childbirth is known to cause fewer tears than the supine position typically used in hospital settings. Many traditions could be adapted by health services with few difficulties and major payoffs. For example, in Cochabamba, women did not want hospital deliveries because they could not retrieve the placenta, the burial of which is thought to be crucial to ensuring a good start for the baby. Some hospitals in Cochabamba now provide the placenta to the families, thereby saving themselves the cost of disposal. Understanding the perceptions, needs and constraints of women and others in the community is a major first step in designing a program appropriate for and acceptable to those it addresses.

## **3. Know and address the service providers' needs and constraints.**

Midwives are key to the maternity care team, yet in many places midwives have not received refresher training in years, are overwhelmed by other responsibilities (e.g., child survival, curative care or family planning provision) or may not even exist (in Guatemala, for example, midwifery training was halted about two decades ago.) Making room in health workers' already busy schedules, or giving higher priority to midwifery, takes more than administrative orders or a change in job descriptions. Similarly, delegating authority to midwives to perform essential obstetric functions, such as manual removal of the placenta, requires more than a policy change. Protocols on managing complications, supplies and logistical systems to provide obstetrical first aid, upgraded skills, linkages with medical back-up to follow up obstetrical referrals, supportive supervision, a means to follow up in the communities—all are needed to rejuvenate maternal and neonatal health and nutrition services.

## **4. Move the services closer to the woman.**

Getting well trained midwives into the community has proved a successful strategy, not only in MotherCare's experience in Tanjungsari, Indonesia, but also in other studies in Nigeria, Ethiopia,

Brazil, and in Matlab, Bangladesh, where the maternal mortality ratio was reduced by nearly two-thirds. In all of these projects, midwives assisted TBAs in the villages with prenatal risk assessments and the early recognition of complications, and in both Matlab and Tanjungsari, the means were available to call midwives for assistance with labor and delivery as well.

Where a midwife goes to provide this prenatal and birth assistance may depend on the community's resources. In Tanjungsari, birthing huts with two-way radios and access to an ambulance were established in 10 villages; in Matlab, the midwife was called by a messenger who traveled on foot; the midwife had access to a boat and boatman to transport her to the woman's home. In Nigeria, midwives are setting up community clinics for prenatal care. In Fortaleza, Brazil, the university established obstetrical units for trained TBAs with telephone connection to the hospital; midwives visited the units weekly to work with the TBAs. Several projects have demonstrated the effectiveness of outreach by midwives able to detect complications and provide obstetrical and neonatal first aid early. Although maternal mortality continues to be difficult to measure, the evidence supporting this outreach strategy is accumulating.

#### **5. Move the woman closer to services.**

Knowledge of the danger signs of pregnancy, labor and delivery and of the postpartum/neonatal period and where to go for appropriate services is essential to reducing maternal and neonatal mortality. In the interest of improving timely and appropriate use of services, these signs must not only be recognized by the woman, but also by those who are in a decision making position during the times when she may be disabled. In the rural Andean province of Inquisivi, Bolivia, 30% of families did not know that their newborn was in serious trouble up to the point of death, while 41% knew there was a problem but not that it was life-threatening.

Mobilizing the resources to move the woman or newborn to services once complications are identified may require a community-wide effort, which in itself needs a convincing push. After months of effort made to identify their own priorities among maternal and neonatal health concerns, the women of Inquisivi took their agenda to an open meeting of their community. After hours of discussion, community leaders developed a plan to manage such problems, assigned responsibility, and signed an agreement to effect required actions.

#### **6. Provide a comprehensive package of services to the woman and her newborn.**

What is needed to ensure good maternal and neonatal health and nutrition? A feasible package of services begins in the community, where most deliveries continue to take place (see Table 1). Essential to delivering this package are the targeting of communication strategies to increase awareness of danger signs and complications to multiple audiences (women, families, providers), extending outreach services for obstetrical and neonatal first aid into the communities and strengthening mechanisms for transporting women and newborns from the home/community to referral centers where providers can competently manage the presenting problems. Services at the health center level should be woman-focused, ensure that her privacy and dignity are respected and provide her with care to match her needs during and beyond pregnancy -- gynecological, obstetrical, other health and nutritional. Hospitals are frightening places that must become more woman-friendly, not only in the attitude of staff and their supervisors, but in their

competence to manage the medical problems with which women present. Tying these various levels of care together is policy that values women's lives -- and acts on this belief by permitting the trained provider at the most peripheral level to assist women in need.

Programming for improving maternal and neonatal health care requires a sequencing of components. The process begins with **formative research** to understand the health behaviors of the woman and her family, and the front line providers, especially those who provide prenatal care and those called upon to assist during labor and delivery. Such research provides the basis for a **communications strategy** aimed at putting maternal and neonatal health on the agenda of communities, providers and policy makers. It provides the basis for a program of **training and coordination** of the health services staff at the primary health care level as well as at the referral hospital. But the training of staff and the improvement of coordination between the different levels of the health infrastructure alone cannot guarantee quality care; **equipment, supplies, drugs, logistics systems, supportive supervision, monitoring and evaluation means, backed up by enlightened policy guidelines**, are also indispensable elements of a comprehensive maternal and neonatal health care system. MotherCare has developed many tools that are available to assist with the process of developing maternal and neonatal care programs (see Appendix B). But it cannot be overemphasized that in order for programs to be acceptable to women and their families, not only must the customs that so enrich the event of childbirth be respected, but the cost of services must be within their means and the competence of providers to manage obstetrical and neonatal complications must be incontrovertible.

## FINAL REPORT SUMMARY

### A. Introduction: The Development of MotherCare

In the 1980's, research data revealing that 500,000 women worldwide (95% in the developing world) died yearly during childbirth shocked policy makers at international and national levels. Over 90% of the causes—hemorrhage, hypertensive disorders of pregnancy, puerperal sepsis, obstructed labor, and septic abortion—were known to be preventable. The World Health Organization estimated that safe motherhood programs could reduce maternal mortality by half by the year 2000. In so doing, infant mortality could potentially decline by one fifth to one third through the reduction of consequent early neonatal deaths. Seven million annual perinatal deaths could be reduced by one third to one half through improved management during delivery. The growth and development of children could be improved by reducing the number—24 million in 1993—of low-birth-weight babies born annually, as well as by reducing the incidence of other problems occurring during the perinatal period (e.g., cerebral palsy, affecting over 2 million children annually). Acute pregnancy-related morbidities suffered by over 50 million women, as well as chronic long-term disabilities (e.g., fistula, prolapse) now burdening millions more women, could also be prevented or reduced in number and severity.

Recognizing the magnitude and seriousness of these problems and the complementarity of safe motherhood programs to on-going projects in family planning and child survival, USAID developed a ten-year maternal and neonatal health project in 1988 to improve the health, nutritional status and survival of women of reproductive age and their children in developing countries. Under this umbrella, USAID inaugurated a five-year (1988-93) contract with John Snow, Inc., known as MotherCare (No. 936-5966.01).

The purpose of MotherCare, as stated in the U. S. Agency for International Development's (USAID) Logical Evaluation Framework (1988) is:

**To demonstrate the feasibility of providing a package of effective, appropriate maternal and neonatal care services and education to women and their infants in selected developing country settings.**

MotherCare's specific program objectives are twofold:

**To reduce maternal and neonatal mortality and related morbidities, and**

**To promote the health of women and newborns.**

Due to the paucity of experience, as of 1988, in addressing these problems throughout the developing world, a program to meet these objectives was initiated through a phased approach beginning with small demonstration projects (population level 100-500,000) in the first five years, with the intention of scaling up to comprehensive regional or national efforts in the second five years.

Thus, in Phase I MotherCare was to implement:

**1. Intensive demonstration projects in up to five countries to improve maternal and neonatal health and nutrition and to assist in the development of national or regional capability and commitment to develop and sustain a program of maternal and neonatal health care and nutrition.**

**Outcome:** MotherCare has implemented demonstration projects in five countries, Indonesia, Uganda, Nigeria, Guatemala and Bolivia. All five countries are committed to, and most are capable of, sustaining the programs. Long-term projects were also initiated in Bolivia and Bangladesh through Save the Children Federation, a private voluntary organization.

**2. Short-term technical and training assistance in as many countries as possible with an emphasis on improving tetanus toxoid immunization coverage, preventing and/or treating common health and nutritional problems, and improving acceptability and use of relevant services.**

**Outcome:** MotherCare has provided technical assistance to eleven countries with an emphasis on assessing maternal health status or the prevalence of breastfeeding, and to 14 countries in response to other requests to develop plans or assist implementing interventions aimed at the reduction of maternal and neonatal mortality and related morbidities. Assistance with tetanus toxoid immunization coverage was shifted to REACH, a USAID centrally funded project with such expertise, while MotherCare emphasized training birth attendants and educating women and families in clean and safe delivery as a complementary strategy for preventing neonatal tetanus.

**3. Applied Research in a minimum of three countries to answer critical questions surrounding delivery of maternal and neonatal health and nutrition care.**

**Outcome:** MotherCare carried out several applied research projects in three countries including:

- a clinical trial in Ecuador of the efficacy of the Kangaroo Mother Method (skin-to-skin contact, warming and exclusive breastfeeding for low-birth-weight infants);
- a study in Indonesia of the effectiveness of reducing anemia through village-based distribution by traditional birth attendants of iron/folate tablets, with and without an IEC (Information, Education, Communication) campaign;
- a study of the effectiveness of and compliance with a new gastric delivery system iron supplement in Indonesia;
- a clinical trial of the efficacy of Clindamycin cream on preventing prematurity caused by bacterial vaginosis among pregnant women in Indonesia;
- an assessment of the effectiveness of integrating single-visit syphilis screening and treatment into prenatal clinic services in Nairobi, Kenya to prevent congenital syphilis.

Brief descriptions of projects supported under the first phase of MotherCare and their preliminary results are provided in a companion volume, entitled *MotherCare 1989 - 1993: Country Project Descriptions*.

## **B. The MotherCare Approach**

The fundamental elements of a maternal and neonatal health care and nutrition program, shown in Box 1, are derived from lessons learned from the history of obstetrics in developed countries and from projects carried out in developing countries, including those sponsored by MotherCare.

### **BOX 1: ELEMENTS OF A PROGRAM TO IMPROVE MATERNAL AND NEONATAL HEALTH AND NUTRITIONAL STATUS**

- Information, education and communications designed to create demand for family planning and clinical maternal services, to increase the ability of women and those who assist with delivery to recognize danger signs during pregnancy, childbirth, and the puerperium, and to mobilize communities to become capable of transporting women and newborns with complications to referral sites.
- Community-based family planning and obstetrics with trained nurse-midwife staff at primary health center level to provide family planning and safe abortion management; prenatal care, including tetanus toxoid immunization, detection and treatment of syphilis, provision of micronutrients (iron, folate and iodine); detection of pregnancy and delivery complications and underlying medical problems; normal delivery (including prophylactic application of antibiotics for ophthalmia neonatorum); obstetric first aid, including sedatives for pre-eclampsia and eclampsia, administration of antibiotics, and manual removal of the placenta; counseling women on early detection of complications and effective early referral of severe complications.
- First referral-level facilities to provide essential obstetric services (cesarean section, anesthesia, blood replacement, manual procedures, monitoring of labor, and case management for high risk women) and neonatal resuscitation.

The coordination of services between the community and a referral hospital is essential to bringing services closer to women and their newborns and women and newborns closer to services in a timely fashion when obstetrical or neonatal complications arise. Explicit policies are needed to sanction and regulate this coordination of services. Other inputs include the means to communicate between the levels (e.g., telephones or two-way radios), transportation for women or infants with complications and for providers in order to perform outreach and supervision. Case management protocols and equipment and supplies at each level that support quality services are necessary to this coordination of activities.

Based on experience gained implementing projects in numerous countries representing tremendous variation in local resources and infrastructure, MotherCare has developed three

paradigms, or country "settings," which categorize the salient demographic, geographic, infrastructural and resource-related factors that influence program design and implementation. These settings can best be described as spanning a continuum extending from resource poor to (relatively) resource rich. Criteria for defining settings include health services infrastructure, skills and facilities available to manage obstetrical emergencies, the degree of isolation of women and their families from communications, information and services and receptiveness to policy reform.

Three strategies guide MotherCare's efforts in all settings to improve pregnancy outcomes and promote healthy women and newborns:

- **Improve services** by upgrading the ability of providers to counsel and communicate with clients and to manage obstetrical and neonatal complications through basic and refresher training; fostering supportive management and supervision; ensuring continuous logistics and supplies; and establishing efficient and useful monitoring and evaluation.
- **Affect behaviors** through social marketing by increasing awareness of the health and nutritional problems of women and newborns; promoting positive attitudes among providers towards their clients; and heightening the awareness of managers, program officials and policy makers of the consequences of inaction and options for intervention to improve maternal and neonatal health.
- **Enhance policy formulation** that will strengthen program commitment, including budgetary allocation; improve coordination of the levels of services to respond to women's needs with a more culturally sensitive approach; and insure delegation of responsibility to the staff most appropriately trained at the peripheral level.

Within each setting, the relative emphasis of each of the three major program strategies may shift depending on the strengths and limitations of the setting. Typically, the three strategies have a synergistic effect. The following three project descriptions provide examples of the integrated program approach MotherCare has taken toward program design within each country setting. Each country represents a point on the continuum from resource poor (setting A) to (relatively) resource rich (setting C), with respect to the criteria described above.

#### 1. Setting A

##### Inquisivi, Bolivia: "Autodiagnosis" for Health Problem Identification

Save the Children/Bolivia began MotherCare-assisted activities in fifty communities in the Inquisivi Province of La Paz Department in July 1990. The project area encompasses nearly 5000 square kilometers of mountainous terrain with difficult access to the dispersed population of 15,000. Roads are poor in many parts of the province and several communities can be reached only by foot. Means of transportation are scarce and unpredictable. Women work their own gardens and tend their animals and have little contact with people outside the household, including other women. Births are typically attended to by the spouse; there are no traditional birth attendants and few health facilities available.

The goal of the three year project was to reduce maternal and neonatal mortality and morbidity by affecting the range of behaviors that influence the outcome of pregnancy and the neonatal period. A major strategy used to achieve these objectives was the organization of women's groups to increase women's knowledge and awareness of specific maternal and neonatal health problems and of the locally available resources that could address these problems.

The autodiagnosis is a participatory research process in which women's groups in selected communities hold discussions to explore their maternal and neonatal health problems. It is an on-going activity that allows both the community and the field staff to learn about how women perceive these problems and how they respond to them. In addition to raising women's awareness of specific maternal and neonatal health problems, a major goal of the process is to foster the women's confidence to speak out about their own maternal and neonatal health problems, to explore the commonality of these problems through discussions and interviews with neighborhood women and to learn to prioritize the problems that are identified.

Fifty women's groups were organized. Forty-eight of the groups completed an autodiagnosis to identify and prioritize maternal health problems. Twenty-two communities carried out a "planning together" exercise and arrived at a plan aimed at solving these problems.

Examples of the actions taken by women's groups as a direct result of the autodiagnosis include:

- Women's insistent demand for family planning services was critical to Save the Children/Bolivia's success in establishing an agreement with the Ministry of Health to enable a local NGO to provide these services to the communities that asked for them.
- Since there are no traditional birth attendants, the women's groups selected a total of forty-two women who were trained as *parteras* (community birth attendants) at a private hospital in La Paz in a week-long course. This familiarized them with hospital staff and routines, increasing the probability of referral for complications.
- Some groups began income-generating projects that would provide emergency funds for obstetric complications including the production and sale of safe birth kits.
- Credit and literacy training programs have been initiated as a result of women's demand to improve their own resources.
- Because traditionally women give birth either alone or with their spouse, more than 700 women of reproductive age, 300 husbands, 70 adolescents and other family members were trained in various aspects of maternal and neonatal health and family planning: self-care during pregnancy; clean delivery; healthy postpartum and neonatal care including immediate initiation of exclusive breastfeeding; and recognition of danger signs during these stages.
- Women's groups worked with a local NGO to develop booklets for women on pregnancy, birth, postpartum care and care of the newborn.

## RESULTS:

- 75 cases of perinatal/neonatal mortality (1988-90: 639 total births) were reduced to 31 cases (1991-1993: 708 total births). The perinatal/neonatal mortality rate thus decreased from 117 perinatal/neonatal deaths per 1000 births to 44 per 1000.
- 11 maternal deaths (1988-90) were reduced to 7 (1991-1993).
- Family planning acceptors of modern methods increased from 0.1% to 27% of women of reproductive age between 1992 and 1993 in communities where services were offered (in one community surpassing 60% of women of reproductive age).
- Women have increased their use of *parteras*, the major "new" birth attendants in the area.

## 2. Setting B

### Tanjungsari, Indonesia: Community-Based Birthing Huts

While Indonesia has been successful in lowering fertility through family planning, maternal mortality remains high at 450/100,000 live births. A study conducted in the West Java subdistrict of Tanjungsari (population 90,000) in 1988-89 revealed that most maternal deaths occurred due to delays in obtaining services for obstetrical emergencies. The three most common reasons for delay reported by women and health care staff were 1) delays by pregnant women and their supporters (husbands and traditional birth attendants) in making timely decisions to seek a higher level of care; 2) delays in reaching an appropriate referral facility due to transportation problems, distance and cost and 3) delays in receiving appropriate care at the facility due to inadequate equipment and staff skills.

The University of Padjadjaran, with technical assistance from MotherCare, developed an operations research project to address these issues of referral and attendance for emergencies. Birthing huts were established in 10 of the 27 villages in Tanjungsari, serving a population of 37,000, where women could receive prenatal care, screening, referral and normal delivery services and which had access to emergency care via two-way radios and ambulances.

Formative research was undertaken to assess village women's awareness of and attitudes towards the birthing huts and to provide the basis for developing a health communication strategy to increase timely recognition of danger signs and appropriate use of services. The findings revealed an ambivalence about the birthing huts, a strong preference for home delivery and a high degree of misinformation about the warning signs of obstetrical complications. A health communication campaign was launched to educate the community about the proper response to danger signs and about the benefits offered by the birthing huts.

## RESULTS:

- Even though TBAs consider referring clients to another facility, including a birthing hut which is managed by another TBA, as a discredit to their own professional standing in the

community, referrals from TBAs to birthing huts for prenatal care increased from 20 percent to 64 percent between January 1992 and March 1993 following the initiation of the health communication campaign.

- Referrals from TBAs for labor and delivery increased from 17 percent to 34 percent during the same period.
- Maternal mortality decreased from 508/100,000 to 225/100,000 live births between 1989 and 1993.
- Perinatal mortality decreased from 48/1000 to 36/1000 live births between July 1992 and July 1993.
- This project is being considered as a model for projects in other areas of Indonesia by the Ministry of Health and the Planning Commission.

### 3. Setting C

#### Nairobi, Kenya: Prevention of Congenital Syphilis

The estimated prevalence of syphilis in 1986 among women delivering at Pumwani Maternity Hospital in Nairobi, Kenya was 4%, believed to be a gross underestimate due to unreported abortions and premature births and fetal deaths delivered elsewhere. If pregnant women with syphilis remain untreated, one fourth of their pregnancies will end in miscarriage or stillbirth while another third will result in congenital infection. Prior to the project only 60 percent of clients at urban prenatal care clinics were screened for syphilis (University of Nairobi, 1989), and only 9 percent of those testing positive were treated.

The University of Nairobi and the University of Manitoba, under a grant from the Canadian government, have been working to strengthen sexually transmitted disease prevention and treatment activities in Nairobi City Council (NCC) public health clinics. The Nairobi City Council, Public Health Department is the major health provider in the city of Nairobi operating 54 of the 154 registered health units within the city. Of its 54 health delivery points, 19 provide prenatal care. These are distributed evenly in the periurban and urban areas and collectively serve a population of approximately one million people. Technical assistance from MotherCare has enabled the integration of syphilis counseling, testing and treatment into 10 of the 19 NCC clinics offering prenatal care, chosen on the basis of situation and population served (largest poor population, situated in periurban areas).

Under a subcontract with the University of Nairobi and the University of Manitoba, MotherCare supported staff training in clinical, counseling and supervisory skills and the use of IEC materials that were developed based on formative research conducted by MotherCare in the clinics and the community. MotherCare also supplied diagnostic equipment and drugs to the clinics to enable them to perform on-the-spot syphilis screening for all women attending prenatal care using the Rapid Plasma Reagin (RPR) test. Positive cases are treated immediately. Partner tracking is also a part of this screening and treatment service.

The initial program objectives were to increase the proportion of pregnant women seeking early prenatal care (before 20 weeks gestation); increase the proportion of pregnant women screened for syphilis at the prenatal clinics; raise the percentage of RPR-positive women receiving treatment; increase the numbers of partners notified and treated; and study health-seeking and health providing behaviors during pregnancy and factors that influence these behaviors.

#### RESULTS:

Over the five-month period following implementation, results of the communication effort have been dramatic:

- 100 percent of new prenatal care attenders were actually screened for syphilis;
- 85 percent of those who tested positive were adequately treated;
- 52 percent of their partners (assuming one partner per seropositive pregnant woman) were treated; and
- Training materials for screening, treatment and counseling skills for prenatal care providers at NCC clinics have been piloted and are now being finalized. Accompanying counseling cards for use with clients to promote an understanding of preventing reinfection and notifying partners have also been produced.

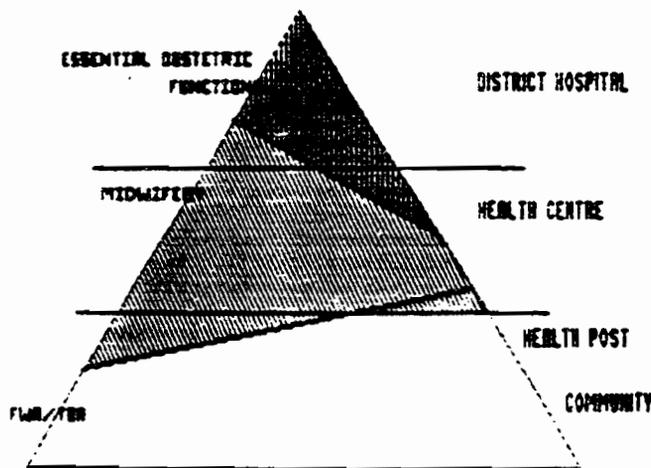
### C. Lessons Learned from the Intervention Strategies

Experience in both long- and short-term country activities as well as knowledge acquired from similar projects supported by other organizations have enabled MotherCare to collect a series of lessons about interventions which can be applied in similar settings. These are described in the following sections by major intervention strategy. The ultimate goal of improved health and nutritional status for women and newborns can be evaluated by changes in health indicators, e.g., maternal, perinatal and neonatal mortality ratios/rates, rates of complications referred appropriately, complications managed appropriately, the prevalence of maternal anemia, and the prevalence of immediate initiation of exclusive breastfeeding. Changes in mortality are difficult to demonstrate due to the large sample sizes required and, in the case of MotherCare, the brief project time frame following implementation. Process indicators have been used at this stage to demonstrate intermediate changes that ultimately affect mortality and morbidity rates, for example, referral rates for complicated cases.

#### 1. Improving Services

The major killers of pregnant women in developing countries are hemorrhage, hypertensive disorders of pregnancy, puerperal sepsis, unsafe abortion, and obstructed labor. The 30-40% of women who encounter complications during pregnancy and delivery need to be attended by doctors and midwives in health centers or referral facilities located as close to the people as possible, with the most serious problems (9 to 15% of all pregnancies) requiring hospital support. Facilities need to have adequate equipment, drugs and supplies along with skilled personnel to provide high quality obstetric care. If these are not available, people simply will not use these services.

The maternity care pyramid (see figure) represents a schematic model of three levels of a country's district health system where specialized midwifery skills extend into the community and some essential obstetric functions (EOF) are available at the health center level.



**The Maternity Care Pyramid**

Essential obstetric functions include surgical obstetrics, anesthesia, medical treatment, blood replacement, manual procedures and monitoring labor, management of women at high risk, family planning support and neonatal special care. All health workers, from specialist to traditional birth attendant, are part of the maternity care team with the registered midwife acting as the linchpin. The active and informed participation of the community is indispensable for the success of a maternal and neonatal health and nutrition (MNH) program. Unfortunately, the distances separating families from the first referral services with EOF are magnified by logistic problems of transportation and communication, as well as cost, cultural differences, and varying perceptions of need.

The complete maternity care pyramid is necessary to reduce mortality. An attempt to make a convincing argument that maternal and child health (MCH) is already an integral part of primary health care and therefore sufficient to address maternal and perinatal mortality is at best an oversimplification and at worst a grave error. While there is ample evidence that maternal mortality is lower among women who receive prenatal care compared with those who do not, prenatal care seems to be increasingly stamped as a passport to an infallibly safe birth both in the clients' and many health professionals' minds. Prenatal care in addition to labor and delivery, postpartum and neonatal care and family planning constitute the most important components of a community obstetric service and must receive balanced attention.

While many complications can be managed at the health center level, 9-15% of pregnancies require treatment at referral facilities, primarily during labor and delivery. Yet, over the last three decades prenatal coverage has risen disproportionately compared to supervised labor and delivery care. The reasons are many and include free prenatal services, the desire to know that the baby is growing well rather than the benefit to the woman's own health, the need to "book," or register, for delivery at a hospital, plus lesser constraints on leaving the house during pregnancy than during labor. The dearth of postnatal and neonatal care services also poses a serious threat to life.

MotherCare has worked with countries at all levels of the maternity care pyramid, depending on the particular setting and priorities identified by individual countries. Improvement of services has been attempted through integration of the following interventions: training at all levels; improving existing facilities; creation of new facilities through community participation; strengthening of referral links; and supervision, monitoring and evaluation.

#### a. Training

Training designs have included five major areas of knowledge and skills:

- competency-based clinical in-service training for registered/licensed midwives to manage obstetrical emergencies (life saving skills [LSS] training in Nigeria and Uganda);
- traditional birth attendant (TBA) training in the recognition and referral of obstetrical and neonatal emergencies (Guatemala, Indonesia and Bangladesh);
- training of health personnel at health posts, health centers and hospitals in the use of case

management protocols for the management of principal obstetric and neonatal emergencies (Guatemala, Indonesia and the Philippines);

- interpersonal communications skills training, including counseling skills training for registered midwives and traditional birth attendants (Nigeria) and syphilis-specific counseling skills for nurses and midwives' use in urban prenatal clinics in Nairobi;
- training of midwives, TBAs and clinic staff in the use of IEC materials (Guatemala, Bolivia, Indonesia, Kenya and the Philippines).

All of the training curricula developed under MotherCare are for in-service (on-the-job) training although two projects—Nigeria and Uganda—have been successful in introducing select in-service sessions into pre-service training curricula for midwives. The in-service training has included courses for master trainers (Training of Trainers) and participatory training for physicians, nurses, midwives and traditional birth attendants.

Lessons learned from these training efforts include:

- i. While TBAs continue to deliver most babies in developing countries, an isolated training intervention at TBA level only cannot have the desired impact upon neonatal and maternal mortality. Referrals may not be timely due to lack of trust, on the part of both TBAs and families, in formal health care providers' skills and attitudes, or management of the complication may be critically delayed by an inadequate referral mechanism and response by the formal system. Similarly, a training effort only at midwifery level, neglecting the community and the referral site, is likely to run into difficulties.
- ii. Involvement of National Nurses and Midwives Councils and midwife tutors (trainers) from the beginning in the endorsement of expansion of life-saving obstetric skills training for midwives can facilitate the eventual integration of in-service skills into pre-service curricula and national standards of practice.
- iii. Midwives have affirmed that counselling training has empowered them and enabled their success in applying life-saving skills and has motivated a change in their attitudes towards clients.

**Statements from midwives:**

"All hospital staff from the cleaner to the Chief Consultant should receive counselling skills training."

"We can do nothing with the practice of life saving skills unless we also have counselling skills."

- iv. By organizing workshops for physicians, matrons and senior midwives on the causes and prevention of maternal mortality and the management of life threatening

emergencies, support was gained for the concept of delegation of responsibilities to midwives.

Statement from a Ghanaian Consultant Obstetrician/Gynecologist who had participated in physician training in Nigeria:

"We cannot deprive the midwives of the right to save lives through acquiring expanded midwifery skills."

- v. The introduction of case management protocols at all health service levels improves case management. This is a long-term process which requires policy dialogue and continuing supportive supervision and training due to staff changes and concomitant factors accompanying such changes.

- In Guatemala, at health center and health post level, case management protocols significantly improved standardized application of procedures. Neonatal mortality at the hospital was reduced from 38/1000 to 32/1000 live births in three years.
- In Uganda and Nigeria, the use of management protocols formed the basis for post-training assessment.
- In Uganda, the approval of protocols also formed the basis for the reform of national policy allowing extended midwifery practice as printed in the midwifery manual, revised with MotherCare support, entitled Midwives Guide and Handbook for Practice.

b. Improvement and Expansion of Facilities

To provide quality services, training efforts must be accompanied by sustainable efforts to assure functioning equipment, adequate supplies and drugs, and logistics systems.

- i. Both in Nigeria and Uganda, the Ministries of Health made a commitment to upgrade existing facilities at their own expense. Written into the memorandum of understanding that detailed respective responsibilities for project implementation was a commitment to renovate wards and equipment and guarantee the supply of drugs and the organization of a blood bank. The establishment of systems for the provision of drugs and supplies as well as the maintenance of an infection control system were factors influencing improved quality of services.
- ii. In Cochabamba, Bolivia, four local NGO facilities were upgraded and equipment purchased so that each could provide comprehensive reproductive health care. A logistics system for contraceptives supplied by USAID was established to ensure continued supply.

Use of services increased in all the NGOs from 17% to over 100% for prenatal care and for family planning after the facilities were upgraded and a communications strategy was implemented to increase awareness of the appropriate use of these services.

- iii. In Indonesia, the Tanjungsari project in West Java, with community participation, established and equipped birthing huts in 10 of the 27 villages. Indonesia's Fifth Development Plan aims to train 33,000 nurse-midwives (called village midwives) who will be posted to villages and will practice in birthing huts. This is a serious effort to bring skilled midwifery care and some essential obstetric functions as near to the people as possible.

The success of such an effort for increased coverage and referral was modest in Tanjungsari, perhaps due to the short observation time following implementation of the birthing huts (up to one year), the duration of the IEC campaign promoting their use (6 months), and the lack of nurse-midwives to staff many of the huts on a continuous basis. More than 70% of women already go to the health center and the TBA for prenatal care. Utilization of prenatal care in a birthing hut depended heavily on the availability of a midwife. Given the prenatal care attendance pattern described above, the absence of midwives in several huts and the limited time to influence behavior change, it is not surprising that a significant shift in favor of birthing hut-based prenatal care did not take place.

Almost 90% of deliveries occur at home. It will take a long time to change delivery practices as families cherish home deliveries with a TBA. However, even though the referrals in Tanjungsari are only 6% from home to any health facility during births, the proportion referred as an emergency to the birthing hut during labor rose from 20% to 64% in 15 months, mainly because the birthing huts have radio links to a midwife, the referral hospital or health center and an ambulance is available from the referral hospital. In Tanjungsari as a whole, only about 1% of births take place in the birthing huts. In the villages where the huts are located, however, approximately 10% of deliveries take place in the huts.

An initiative which has demonstrated even such modest success should continue for a longer time, but a clear focus on policy and management issues is essential if it is to become sustainable and self-sufficient. Posting of nurse-midwives to villages needs community and government support. If the birthing hut cannot become the home of the midwife, because it is situated either in a village headman's or a TBA's house, and it is not feasible for the midwife to reside in that house, then the midwife will not be readily available as support for the TBA in the designated village. Rental of accommodation and transport will then become problems which need to be addressed.

#### c. Establishment of Referral Links

Whether or not referral mechanisms were established depended on the type of setting and the priorities of the country.

- i. In Guatemala, no formal referral system was established through subsidized transportation or the provision of radios and ambulances, nor was a social marketing campaign organized to promote use of improved services. However, TBAs, who continue to deliver the majority of women, were trained to recognize danger signs early during labor and delivery and to refer women to a referral hospital. Hospital personnel simultaneously were trained to improve their management of obstetrical and neonatal complications. Results show that referrals to the hospital by the TBAs increased from 2% to 7% over the project period but this increase was noticeable in both the intervention and comparison communities. This would imply that it was not the training of TBAs which increased referral, but the training of health personnel, particularly in the hospital and the sensitization of hospital personnel to receive patients with or without their TBAs in a more respectful manner. This sensitization, essentially reminding the medical staff that they were all trying to save lives, was done through posters and personal communication between project and hospital staff.
- ii. Also in Guatemala, preliminary results show that trained TBAs were more likely to refer complications requiring emergency treatment efficiently than TBAs in control areas who had not been trained.
- iii. In Tanjungsari, Indonesia, referral rates are still low, but increased significantly for emergencies during labor in villages where birthing homes exist and radios can call an ambulance or a midwife or doctor as compared to the control area. Maternal mortality has decreased from 508/100,000 in 1989 to 225/100,000 live births as of May 1, 1993. Perinatal mortality has decreased from 48/1000 in July 1992 to 36/1000 births in July 1993. It must be concluded that all components of improvement of services (training, facilities, outreach by skilled midwives, provision of radio and ambulance) have had a synergistic effect upon this desired outcome.

#### d. Monitoring and Evaluation

The projects in Indonesia (both Surabaya and Tanjungsari), Guatemala and Bolivia have had community surveillance systems in place to register births, deaths, use of services and complications. In Indonesia, medical audits and verbal autopsies of perinatal and maternal deaths were also carried out.

- i. Medical audits and verbal autopsies are experienced as extremely threatening at first, but have functioned as a useful learning process for staff at all levels of the health service in Indonesia. Continuation of such reporting, however, requires trust between the staff at different referral levels at the "triage" stage if this process is to be kept in place after the end of the project.
- ii. In Guatemala, the Quetzaltenango project staff designed forms to be used for supervision of health center and health post staff that were completed by physician field supervisors during the four visits made during the year at three-month intervals to observe staff after in-service training.

Initially, the health staff and in particular the doctors were resentful of this system of supportive supervision. However, with confidence-building and reinforcement of training following observation sessions, the supervisors were welcomed and performance of health staff improved significantly when the first and fourth visits were compared. Nevertheless, monitoring staff performance without creating an environment of suspicion and distrust remains a challenge.

- iii. Surveillance systems are expensive and take time to analyze. Data should ideally be used for ongoing monitoring of projects in order to make mid-course corrections. These data could also be used for supportive supervisory purposes. Indicators that are useful for monitoring that can accurately reflect events or complications as self-reported by women or noted on clinic records have yet to be developed. MotherCare's efforts with Macro International in the Philippines to validate women's self-report of complications and utilization of services is a major step in this direction.

## 2. Affecting Behavior

The outcome of pregnancy and childbirth is to a large extent determined by the health behaviors and practices of the pregnant woman as well as progress toward an effective interaction between a pregnant woman seeking services and the providers of prenatal, intrapartum, postpartum and emergency obstetrical care. Too often, though, the pregnant woman and the health providers operate under different health care models that may be in conflict.

A woman's health-seeking behavior during pregnancy is influenced by traditional beliefs and practices, the social structure of her community and economic and environmental realities. A health care provider is influenced by two models: the health provider's own traditional community values and the biomedical model promoted by modern medicine. Often a provider's personal environment—class, culture, religion—is similar to the client's but the professional environment is not. Providers' level of education and professional identity may in fact prejudice them against clients coming for services. A formal health service operates on standards, protocols and program incentives or disincentives and is shaped by medical hierarchies and infrastructural inadequacies. Social status issues and other forces may inhibit or motivate the provision of quality care. These realities must be brought into harmony in order for an intervention to be effective.

### a. The Development of Health Communication Messages

Social marketing is a strategy that attempts to link behavior change to an intervention. Based on the idea that an understanding of local attitudes, beliefs and practices will lead to more appropriate interventions, social marketing promotes messages directed at behavior change that is culturally acceptable. Research into the knowledge, perceptions, attitudes and practices of local women provides a basis for designing interventions based on women's own needs and desires. Social marketing directs messages not only to women, but also to health providers, family members and community leaders who influence health-seeking behavior, recognizing that behavior change must occur at all levels. Formative research, program development and

implementation carried out by MotherCare have revealed several universal lessons regarding the attitudes and practices which influence the seeking and provision of maternal and neonatal health and nutrition care:

- i. **PREGNANCY IS CONSIDERED NEITHER A DISABILITY NOR A TIME FOR SPECIAL CARE.** Women commonly tend to use services to verify a pregnancy, possibly to check fetal growth or position, and during emergencies. Although prenatal care coverage has increased over the past 30 years, attendance for other services is not yet widespread.

LESSON:

**Prenatal care is important because it can help to identify problems early in pregnancy. Likewise, use of services during delivery can prevent complications from becoming fatal.** Women attending prenatal care can be counseled to recognize danger signs. Prenatal care providers can link women with appropriate medical support if danger signs do appear. One of the most important messages directed towards women is the need to attend prenatal care routinely even when feeling healthy, at least for the following specific, recognizable events or activities:

- to verify pregnancy and have an initial check-up (including STD and nutrition screening). STD client counseling should include assisting clients to identify ways of negotiating supportive behavior change in their partners. For women, this also means taking realistic measures to prevent reinfection if partners cannot be approached or will not comply.
- to receive adequate immunization for tetanus and iron folate tablets for daily consumption during part or all of the pregnancy. Coverage and compliance are two separate issues and must be treated as such in any social marketing and health communications program.
- to receive a final check-up during the last month of pregnancy to determine the growth and position of the baby, the possibility of twins, and the presence of high blood pressure—all potential signs of a complicated birth.

- ii. **EMERGENCY CARE IS SOUGHT ONLY WHEN SIGNS OF PENDING DANGER OR ACTUAL MALADIES ARE RECOGNIZED AND THEN ONLY IF THEY ARE CONSIDERED SERIOUS ENOUGH.** Edema, for instance, is considered a "normal" experience for most pregnant women; swollen hands and face may be treated with the same ambivalence as swollen ankles and legs. Danger signs and complications are not known by their medical terms and must be described precisely using health education language rather than abstract medical terms. For example, "edema" should be more explicitly described by highlighting swelling of hands or face. "Bleeding" should always be accompanied by a description of the color (e.g., dark or bright), quantity (e.g., soaked through three burlap sheets) and time period (i.e., during pregnancy, during labor, during delivery, after delivery). Even pain at the onset of labor may have a very different description based on the severity, type and location than does pain at the onset of delivery.

### LESSON:

**Messages directed to all pregnant women—both those who attend prenatal care and those who do not—should heighten ability for self-recognition of danger signs and emphasize the need for prenatal care.** Also, the importance of taking the initiative to seek care in a timely manner should be stressed. Women should be told to:

- Attend prenatal care when feeling sick or experiencing any of these conditions, which are danger signs of pregnancy: swelling of face and/or hands; vaginal bleeding of any amount or color; dizziness or convulsions; fever and/or severe headaches; and malpresentation.
- Attend prenatal care if the woman has had a previous history of poor pregnancy outcomes (e.g., stillbirth, cesarean section or any instrumental delivery), for a first pregnancy, or if the woman is very young or short.
- Comply with instructions to return for follow-up or to seek a "higher level" of care if necessary. Of course, the effectiveness of a health provider depends partly on counseling ability, and the need for good communication should be stressed. After an emergency has passed, attending follow-up prenatal care is important, as well as following through with any referrals to a doctor and/or a hospital, even if feeling healthy.

- iii. **KEY CLIENT BEHAVIORS** that can determine the outcome of a complication and influence maternal mortality and morbidity are: recognition by a pregnant woman and/or her supporters and enablers of danger signs during pregnancy and complications during delivery; being able to make timely decisions to seek help; and knowing how to get help immediately. The focus of health communication must be on supporters of the woman in addition to the woman herself since these are most often the people who will need to recognize a complication and make decisions in the middle of an emergency. Messages also need to stress why it is important to follow the advice of the midwife or trained TBA regarding where to deliver and also why attended and institutional deliveries can be safer than delivering at home, alone or with an untrained person.

### LESSON:

**Women and their supporters must know that it is time to "take the first step" to the place where a pregnant woman has decided to deliver when:**

- labor contractions begin;
- water breaks;
- bleeding starts;
- the TBA tells the woman to prepare.

**Health communication messages must stress the importance of recognizing labor and delivery complications. This is important for pregnant women, but equally so for TBAs and often, for husbands, mothers and mothers-in-law. These messages should stress the need to take action when the following occurs:**

- prolonged labor (> 12 hours);
- bleeding;
- prolapse of cord or limb;
- convulsions;
- malpresentation.

**BOX 2: WHAT PREGNANT WOMEN CAN DO FOR THEMSELVES: HEALTH PROMOTING BEHAVIORS AND PRACTICES**

**In the prenatal period, pregnant women should:**

- Increase the quantity and quality of their intake of nutritious foods.
- Reduce their work load and rest more often.
- Consume iron folate tablets daily to prevent anemia.
- Recognize danger signs of pregnancy and follow instructions for referral.
- Community groups should consider emergency funds, blood donations and a transportation system for complicated deliveries.

**In the intrapartum period, pregnant women who deliver at home should:**

- Ensure cleaner and safer delivery by requesting a trained TBA (if there is one) and using a "safe birth kit" (i.e., razor blade, soap, towel, sheets, string, matches).
- Consume as much water as they want during labor and urinate frequently.
- Recognize and seek help for complications, especially retained placenta, obstructed or prolonged labor, excessive bleeding and malposition.
- Immediately put the newborn to the breast and begin exclusive breastfeeding.
- Care properly for the cord and ensure care and warmth of the newborn.

**In the postpartum period, all new mothers should:**

- Increase the quantity and quality of their intake of nutritious foods.
- Reduce their work load and rest more often.
- Recognize that excessive bleeding or prolonged fevers (2 days or more beginning after the first 24 hours after birth) require immediate attention from clinical personnel.
- Breastfeed the newborn exclusively for four to six months, beginning within the first hour of life.
- Consume iron folate tablets daily.
- Seek family planning counseling. If fully or nearly fully breastfeeding, use of family planning may be delayed until any of the following occur: mother begins supplementing infant's diet regularly; menses return; or six months postpartum, whichever comes first. Contraceptives used by breastfeeding women should be low in estrogen or nonhormonal. If not fully breastfeeding then begin a family planning method at six weeks postpartum.
- Ensure the newborn is well nourished by exclusive breastfeeding, warm and clean to prevent such problems as acute respiratory infections and diarrhea.

- iv. **KEY PROVIDER BEHAVIORS** that influence maternal and perinatal morbidity and mortality are: recognizing danger signs during pregnancy and complications during delivery and the postpartum period; providing timely and quality care; and making prompt decisions

to refer. For both TBAs and midwives, several steps are crucial for the survival of a woman and newborn: a) responsible case management, b) adequate supplies and drugs, and c) the timely and appropriate use of referral to a higher level of care where obstetrical and neonatal emergencies can be handled (c.g., Cesarean section, vacuum extraction, resuscitation). Furthermore, improved case management by staff of referral hospitals also significantly influences maternal and neonatal survival.

**LESSON:**

**Health communication messages must target health personnel** as well as pregnant women and their families. Changes in behavior within the health care system should be stimulated by and responsive to the needs of the client and the community. Changing the behavior of clients toward the use of services is usually dependent to some extent on the provision of less intimidating and more culturally appropriate services. This requires behavior change by the provider and begins with an attitude of respect for the client.

The following points should be taken into consideration when designing these messages:

- Interpersonal communication and counseling training for TBAs, midwives, physicians and other health care workers is the key mechanism for affecting service provider behavior.
- Along with upgrading the obstetrical and neonatal management skills of health personnel, the following activities should be undertaken: a) service site improvements, including facility, supplies, drugs and equipment; b) transportation improvements and outreach; c) pricing improvements, including incentives and package services; d) improvements in linkages between TBAs and midwives and between referral sites, such as the community, the health center and the district hospital; e) policy improvements; f) management and supervision improvements; g) specific health communication campaigns promoting the quality of services rendered by the service provider.
- Delivery sites outside the home should try to create a sense of the values and feelings attached to home delivery. Whether birthing sites are close to home, such as community birthing huts, or far away, such as the hospital, they should respect the client's desire and need for family members to be present or nearby, for privacy, and for a setting that the client regards as comfortable and safe.

**BOX 3: WHAT HEALTH CARE PROVIDERS CAN DO TO PROMOTE SAFE MOTHERHOOD: OBJECTIVES AND AUDIENCES FOR AFFECTING BEHAVIORS**

**Interaction With Household/Community**

(PREGNANT WOMEN, THEIR HUSBANDS OR PARTNERS, THEIR MOTHERS OR MOTHERS-IN-LAW AND/OR ELDER SISTERS, THEIR POLITICAL, TRADITIONAL AND RELIGIOUS LEADERS):

1. Prepare community to react quickly to reduce delays in seeking care;
2. Increase provision of, demand for and utilization of products and services;
3. Strengthen counseling skills of service providers and midwives;
4. Strengthen appreciation by health care system of beneficial or non-harmful practices of the community;
5. Improve formal health linkages and outreach with communities and traditional health networks (e.g., placement of obstetrical emergency personnel, equipment and supplies in primary health care settings).

**Within the Health Care System**

(TBAs AND TRADITIONAL HEALERS, COMMUNITY-BASED HEALTH CARE PROVIDERS, CLINIC-BASED HEALTH CARE PROVIDERS (E.G., MIDWIVES AND NURSES), OB/GYN PHYSICIANS, MEDICAL ADMINISTRATIVE OFFICERS):

1. Motivate use of safer birthing techniques and materials;
2. Recognize and comply with timely referral of pregnant women with danger signs, complications during delivery and danger signs in newborns;
3. Decrease harmful practices;
4. Strengthen follow-up counseling for postpartum complications;
5. Strengthen management and supervision, case management and infrastructure of services to comply with needs of clients.

b. MotherCare Communication and Social Marketing Experiences

i. Dhaka, Bangladesh

In Bangladesh, motivational materials were designed to address the need for pregnant women, their families, TBAs and women's savings groups to be more proactive in complying with routine prenatal care recommendations and recognizing and responding to danger signs during pregnancy, labor and delivery and the puerperium. Messages and materials were designed to stimulate interaction between pregnant women, husbands and mothers-in-law on maternal health and nutrition issues. Save the Children's village development workers deliver these messages with the aid of illustrated counseling booklets; female workers communicate with women and mothers-in-law and male workers with husbands. The household keeps the book as well as four reminder posters reinforcing messages on taking iron folate tablets, eating more frequently, safer, cleaner delivery, and postpartum/neonatal care. These posters are given to pregnant women at appropriate times during the pregnancy.

Counseling by health workers is improved through their use of communication materials. Flipcharts, with illustrations and captions from the counseling booklets, are used during prenatal care sessions to reinforce messages to mothers. TBA action cards are designed to remind TBAs of steps needed for safer delivery and of danger signs which warrant referral; these cards are retained by TBAs. Once trained, TBAs are provided with TBA kits, medications and supplies, and receive refresher training every three months.

Recognition of conditions which require early referral is emphasized, as is seeking emergency care. In order to reduce financial obstacles that will continue to preclude follow-through on recommendations for referral to a hospital, SCF is now in the process of establishing emergency referral funds in its women's savings groups.

Pretest surveys revealed that 75% of mothers had at least one prenatal care check-up during their last pregnancy; only 12% started prenatal care in their first trimester. Only 29% of mothers ate more than usual during their last pregnancy; 87% knew they should have eaten more. Sixty-six% of husbands said that women should eat more during pregnancy. Forty-three percent of women surveyed sought treatment for bleeding; 56% of women with facial edema sought treatment.

Although 77% of mothers started breastfeeding on day one after delivery, 83% gave additional liquids or foods as well. Seventy-three percent were aware that only breast milk was needed in the first five months of life, but 40% felt their breast milk was not sufficient.

Thirty percent of mothers, 35% of husbands and 42% of mothers-in-law identified two or more years as the optimal interval to "rest" between pregnancies.

Pre-test post-test survey research will evaluate the results of the health communication intervention in mid-1994.

## ii. Cochabamba, Bolivia

Working with the local public health authority and several local nongovernmental organizations (NGOs) offering health services in Cochabamba, MotherCare's program sought to increase the public's demand for reproductive health services, improve the quality of those services and, consequently, contribute to an eventual decline in maternal and neonatal mortality. A formative study of women's reproductive health knowledge, attitudes and practices was conducted to understand better the population's perceptions of and behavior with respect to the formal health care system. The findings of the study were used to develop intervention strategies to improve home practices, increase the appropriate use of formal health services and to train health care providers to offer services more respectful of women's needs and wishes.

A health communication plan was initiated in three phases: *sensitization*, aimed at creating awareness among policymakers, health providers and others of the problems of maternal and neonatal health and the differences in perspectives on health care between the Quechua-Aymara peoples and the formal health system employing the biomedical model; *prenatal care*, to create

an awareness of the importance of routine and emergency prenatal care; and *safer/cleaner home delivery*, promoting the use of sterile materials to cut and tie the umbilical cord, the recognition of and response to obstetrical complications, the avoidance of labor augmenters and safe delivery of the placenta.

Each phase employed educational video and radio programs covering the general theme, with an accompanying TV and radio spot for each major subtheme and one flipchart per subtheme (with instructional guides) to be used by health care workers and one educational leaflet for each subtheme to be provided to families.

An inter-agency information, education and communication (IEC) committee with representatives of each participating agency was established in Cochabamba and health communications skills workshops were provided to all represented agencies to ensure an institutionalized capability to develop and implement the various phases. Training was conducted with providers to upgrade their skills as well as to adapt case management procedures to the needs of clients brought to light by the formative research.

While no significant changes in prenatal care attendance for Cochabamba as a whole were detected in a population-based survey, increases in attendance from 17% to over 100%, compared to a six-month period two years earlier, were documented from clinic records at four participating clinics. The proportion of women who saw or heard a message about prenatal care rose from 42% to 71%; the proportion who saw or heard a message about danger signs during pregnancy rose from 24% to 57%. Women who could identify one of the danger signs increased from 26% to 43%; those who remembered edema as a danger sign, traditionally thought to be a positive sign promising an easy birth, rose from 2% to 64%.

### **iii. Indramayu, Indonesia**

Pregnant women in Indonesia have the lowest hemoglobin levels in Southeast Asia; studies estimate that 70% of pregnant women are anemic. In Indramayu, West Java, Indonesia, MotherCare conducted operations research to investigate ways to improve pregnant women's consumption of iron folate tablets. The project was initiated with formative research, including focus group discussions, in-depth interviews and behavioral trials to assess women's understanding of anemia during pregnancy and use of iron folate tablets, the acceptability by women and TBAs of having TBAs distribute the tablets in the community in addition to the existing system of health post distribution, and the appropriate channels of communication to distribute information about the importance of iron folate tablets and how to get them.

A multi-media communication campaign was designed to promote an understanding among pregnant women, their families, and traditional and formal health providers of the importance of iron folate tablet consumption. The materials and approaches used included: a counseling flipchart for midwives, TBAs and community health volunteers; improved packaging of the tablets for distribution by TBAs; take-home action cards for pregnant women to remind them to take tablets daily; promotional posters, banners, stickers, tin plates and balloons; markers for distribution points (health centers, health posts, TBA homes); radio advertisements featuring a

pregnant woman named "Ibu Sehat" (Madame Health) and her supportive husband; "Iron Folate Tablet Awareness Days"; and periodic community meetings with men and community leaders on maternal health and iron folate tablet consumption.

In the treatment area, making iron folate tablets more accessible to pregnant women via the TBAs in the community, and ensuring an adequate supply of tablets significantly increased the availability, coverage and consumption of iron folate tablets. Health communication to increase use of services and iron folate tablets did not significantly increase coverage and compliance above and beyond the effect of the more accessible TBA distribution system. However, in the control area, where adequate supplies of tablets were available but the distribution was only through the regular health post, both coverage and compliance with the iron folate regime were significantly increased after the health communication campaign.

Before the communication campaign, women in the control area reported taking a total of approximately 28 tablets during pregnancy, compared to 45 tablets after exposure to the campaign. In the treatment area, the incremental increase (with the addition of IEC, above and beyond the increase already achieved by TBA distribution) was minimal, approximately 70 tablets after the communication campaign compared to 65 tablets before, a change which was not significant. However, even in the treatment area with the combined interventions (communication and community-based TBA distribution), the number of iron folate tablets taken throughout pregnancy (70 on average) is still far below the number needed to prevent anemia (300 tablets, according to WHO guidelines, each containing 60 mg elemental iron at a dose of 2 per day from the fourth to fifth month of pregnancy).

In terms of the proportion of women reporting iron folate tablet consumption during pregnancy, only 53% of the women in the control area reported taking iron folate tablets during their pregnancy before exposure to the communication campaign. This increased significantly to 86% after exposure to the campaign. The incremental difference again was minimal in the treatment area (92% before the communication programs but after enhanced TBA distribution; 98% after the communication program), as coverage was almost universal prior to the campaign as a result of the new TBA distribution system. Focusing the communications more on compliance than on coverage might have resulted in more significant effects.

Social marketing methods for directing and reinforcing behavior change are applicable not only to the development of health communication campaigns, but also to strengthening training, developing policy and improving service delivery. For these purposes, a broader message is targeted at different audiences who can influence policy change and improvements in service delivery.

### 3. Policy Reform

Policy reform begins with advocacy, such as a "call to action" for the implementation of problem-oriented interventions, and moves to policy dialogue, including information exchange to explore specific programmatic issues. Given no barriers, actual reform could be achieved with a government endorsement and with resource allocations to support implementation. Prior to the

point of reform, however, a considerable amount of time is usually required to overcome barriers, clarify and state objectives, identify and rally constituents. The road to policy reform is often long and tedious, with some reforms taking years to enact, particularly when strategy refocus or reallocation of resources is involved.

Once policy reform has occurred, assessing its influence on bringing about the desired outcome(s) is essential. In some cases, movement stops after policy is in place because inadequate attention is given to the implementation plan and the allocation of technical and financial resources or because objectives are poorly articulated, understood and accepted. Often, more than one policy is required to achieve the desired outcome. Certainly there is a net benefit, when striving to improve maternal and neonatal health by strengthening the quality of maternal services, to putting forward interrelated policies within the same time frame.

MotherCare's long-term demonstration and PVO projects have systematically approached the process of policy reform and/or formulation within this conceptual framework. In all the long-term demonstration project countries efforts have been made to promote endorsement for the delegation of authority in the provision of maternal services. This has involved upgrading of skills for the front line provider and tightening the referral and supervisory networks. One country (Uganda) actually achieved policy reform, and most are proceeding toward reform but many require additional replication on a broader scale with a wider dissemination of project findings (Indonesia, Bolivia, Nigeria). Examples of some of these activities are highlighted below:

**Uganda (Uganda Life Saving Skills Project).** The Ministry of Health has acknowledged that the quality of maternal services can be strengthened by training all clinical midwives and trainers in life saving skills (LSS) and has endorsed as policy the expanded role of midwives in Uganda including manual removal of the placenta (but not vacuum extraction). To that end, the Ministry of Health has allocated funds for this training to continue over the next five years and approved funds to establish a third training center in 1993-1994. (MotherCare had supported the establishment of two training sites.) Portions of the LSS in-service curriculum have also been adapted for use in the midwifery pre-service curriculum.

**Nigeria (Maternal Care Project, Oyo, Osun, Bauchi States).** There is a strong potential for the formulation of policy to support the expanded role of clinical midwives at the state level. This was brought about through considerable efforts to rally constituents to support the role of midwives prior to the initiation of LSS training nationally and in both states. The state governments and other policy makers were invested from the outset of the project, allocating funds for state level meetings and upgrading, at their own expense, the targeted hospitals to meet the criteria for inclusion in the project as training centers.

**Indonesia (Regionalization and Surabaya Projects).** The government is considering the Tangjungsari maternal care model for replication as one mode of programming from the national level. If approved by Parliament, this model will be incorporated into the national five-year plan. The government has also allocated funds to expand the community-based Safe Motherhood model in Surabaya from the district to the provincial level. MotherCare

demonstration projects have been endorsed as viable models for the World Bank/Government of Indonesia Community Health and Nutrition III Project.

**Bolivia (Cochabamba and Inquisivi Projects).** Service statistics from the Cochabamba project indicate that utilization of both private and public prenatal and family planning services has increased through focused training and increased availability of comprehensive maternal and family planning services complemented by an IEC strategy, though population-based coverage has not increased significantly. The results provide a model for the government to consider for improving services by working with both public and private providers of maternal care in urban areas. The same can be said of the model developed by Save the Children in Inquisivi, reaching women in remote rural areas through women's groups. Both the government and other PVOs are eager to replicate the community participation aspects of this model in the rural areas. However, adaptation of this model as a national standard for Bolivia will require significant resource allocation on the part of the government combined with utilization of PVOs to mobilize communities to upgrade the rural health-care infrastructure.

The ability of the MotherCare long-term demonstration projects to move from advocacy towards policy reform in a relatively short period of time can be attributed to several essential factors:

- The majority of the countries have a functioning health infrastructure—public and private services, trained providers of various levels and potential for a communications network. While it is possible to move towards policy reform in settings with little public service infrastructure, it requires considerable time for an adequate policy dialogue to occur with local private groups coalescing to spearhead the movement. Also, models must be developed with an eye towards country resource capability. Ultimately, governments with sparse health services infrastructure will require additional resources and assistance to upgrade their health infrastructure and train and assign personnel.
- There are political environments, such as a decentralized system for providing health services, which enable a more efficient procedure for the process of policy reform. This is the case in Nigeria where states are able to adopt their own initiatives and formulate their own policies. The decentralized model works well when adequate time has been given to policy dialogue, including an assessment of resources to support policy change.
- In most countries, MotherCare projects build on existing research, government priorities and constituents' interests. The international efforts advocating for Safe Motherhood have been a major stimulant.
- There is a role for donor agencies, PVOs and NGOs in assisting governments along the continuum from advocacy to policy reform and implementation. However, these groups must involve governments at the outset of the planning process so that designs are consistent with government priorities and capabilities and government takes ownership. Political will on the part of the government to move and sustain these projects is essential to policy reform and institutional development.

- **Constituents are at the heart of the policy process. They must be identified early in the process. Endorsement must be sought of special interest groups who might function as barriers to policy reform. Continued advocacy efforts and dissemination of information to all constituents is essential.**

## **D. Recommendations**

MotherCare began in 1989 with the aim to improve pregnancy outcomes, for women as well as for newborns, through a community-based approach. Through its work in field projects and providing technical assistance, commonalities have emerged across projects and within settings that relate to the three major intervention strategies – *improving service delivery*, *affecting behaviors*, and *policy reform*. Formative research has revealed fairly universal motivating, enabling and inhibiting factors that influence health-seeking and healthcare-providing beliefs and practices. Training activities have identified the utility of strengthening life-saving skills including counselling and interpersonal communication skills for both formal and informal healthcare providers. Management and supervision of the process of referral have been found to be critical to saving women's lives as well as the lives of babies. Policy strategies have formalized processes of consensus-building and establishing fiscal obligations while highlighting the importance of collaborating with the private and non-governmental sectors. IEC campaigns have underscored the vitality of a holistic health program by sharing the responsibility for behavior change among the pregnant woman, her family, her community and her service providers. And monitoring and evaluation of safe motherhood programs have demonstrated that such interventions must be well integrated to have a lasting effect on health care.

Based on lessons learned from the MotherCare experience, a number of recommendations are offered under the following three headings:

- programming for the health of women and newborns;
- scaling up; and
- program emphasis by setting.

### **1. Programming for the Health of Women and Newborns**

There is no simple recipe for improving maternal and neonatal health. A composite of specific technologies that can reduce maternal and neonatal mortality or prevent related morbidities is gaining wider recognition (see Table 1). However, the foundation for successful programming is not any particular technology but an attitudinal change assigning maternal health and neonatal and nutrition a high priority and the coordination of care that will address women's needs.

Based on what is now known, after five years of program activity, the following six recommendations are submitted as fundamentals of successful maternal and neonatal health and nutrition programming:

#### **1. Put maternal and neonatal health and nutrition on the top of the agenda.**

The Safe Motherhood Initiative began in 1987 with the challenge "Where is the M in the MCH?" Nearly 7 years later, we are still asking the same question. MotherCare's agenda includes the newborn as well as the mother because the two lives are so closely bound. And the target group is not only policy makers, but also includes women, spouses and partners, community leaders and front line providers as well. Women, often put last and given least by others inside and

outside the family, are unaccustomed to speaking out for themselves in many societies. Reaching these women, working with them, "empowering" them through women's groups or other supportive means, has the potential to save many lives, as is implied by the success of the MotherCare project in Inquisivi, Bolivia.

While policy makers may now seem to be familiar with the concept of Safe Motherhood programming, the gap between knowing and doing remains. Front line providers may still not have the linkages with communities or with referral sites necessary to ensure timely referral of women with complications; the supplies to provide even basic primary health care for women; or the motivation to do so. Getting maternal and neonatal health care and nutrition onto the action agenda of those who need the care and those who provide the care requires strong policies.

## **2. Know and cater to the woman's and her community's needs and constraints.**

A multitude of traditions surround pregnancy and childbirth. Some customs and beliefs may be hazardous, such as the belief that obstructed labor is caused by adultery. In a community sharing this belief, a woman may fail to receive appropriate care if her condition is perceived to be punishment for her misconduct. Other traditions may be beneficial. The squatting position for childbirth is known to cause fewer tears than the supine position typically used in hospital settings. Many traditions could be adapted by health services with few difficulties and major payoffs. For example, in Cochabamba, women did not want hospital deliveries because they could not retrieve the placenta, the burial of which is thought to be crucial to ensuring a good start for the baby. Some hospitals in Cochabamba now provide the placenta to the families, thereby saving themselves the cost of disposal. Understanding the perceptions, needs and constraints of women and others in the community is a major first step in designing a program appropriate for and acceptable to those it addresses.

## **3. Know and address the service providers' needs and constraints.**

Midwives are key to the maternity care team, yet in many places midwives have not received refresher training in years, are overwhelmed by other responsibilities (e.g., child survival, curative care or family planning provision) or may not even exist (in Guatemala, for example, midwifery training was halted about two decades ago.) Making room in health workers' already busy schedules, or giving higher priority to midwifery, takes more than administrative orders or a change in job descriptions. Similarly, delegating authority to midwives to perform essential obstetric functions, such as manual removal of the placenta, requires more than a policy change. Protocols on managing complications, supplies and logistical systems to provide obstetrical first aid, upgraded skills, linkages with medical back-up to follow up obstetrical referrals, supportive supervision, a means to follow up in the communities—all are needed to rejuvenate maternal and neonatal health and nutrition services.

## **4. Move the services closer to the woman.**

Getting well trained midwives into the community has proved a successful strategy, not only in MotherCare's experience in Tanjungsari, Indonesia, but also in other studies in Nigeria, Ethiopia,

Brazil, and in Matlab, Bangladesh, where the maternal mortality ratio was reduced by nearly two-thirds. In all of these projects, midwives assisted TBAs in the villages with prenatal risk assessments and the early recognition of complications, and in both Matlab and Tanjungsari, the means were available to call midwives for assistance with labor and delivery as well.

Where a midwife goes to provide this prenatal and birth assistance may depend on the community's resources. In Tanjungsari, birthing huts with two-way radios and access to an ambulance were established in 10 villages; in Matlab, the midwife was called by a messenger who traveled on foot; the midwife had access to a boat and boatman to transport her to the woman's home. In Nigeria, midwives are setting up community clinics for prenatal care. In Fortaleza, Brazil, the university established obstetrical units for trained TBAs with telephone connection to the hospital; midwives visited the units weekly to work with the TBAs. Several projects have demonstrated the effectiveness of outreach by midwives able to detect complications and provide obstetrical and neonatal first aid early. Although maternal mortality continues to be difficult to measure, the evidence supporting this outreach strategy is accumulating.

#### **5. Move the woman closer to services.**

Knowledge of the danger signs of pregnancy, labor and delivery and of the postpartum/neonatal period and where to go for appropriate services is essential to reducing maternal and neonatal mortality. In the interest of improving timely and appropriate use of services, these signs must not only be recognized by the woman, but also by those who are in a decision making position during the times when she may be disabled. In the rural Andean province of Inquisivi, Bolivia, 30% of families did not know that their newborn was in serious trouble up to the point of death, while 41% knew there was a problem but not that it was life-threatening.

Mobilizing the resources to move the woman or newborn to services once complications are identified may require a community-wide effort, which in itself needs a convincing push. After months of effort made to identify their own priorities among maternal and neonatal health concerns, the women of Inquisivi took their agenda to an open meeting of their community. After hours of discussion, community leaders developed a plan to manage such problems, assigned responsibility, and signed an agreement to effect required actions.

#### **6. Provide a comprehensive package of services to the woman and her newborn.**

What is needed to ensure good maternal and neonatal health and nutrition? A feasible package of services begins in the community, where most deliveries continue to take place (see Table 1). Essential to delivering this package are the targeting of communication strategies to increase awareness of danger signs and complications to multiple audiences (women, families, providers), extending outreach services for obstetrical and neonatal first aid into the communities and strengthening mechanisms for transporting women and newborns from the home/community to referral centers where providers can competently manage the presenting problems. Services at the health center level should be woman-focused, ensure that her privacy and dignity are respected and provide her with care to match her needs during and beyond pregnancy – gynecological, obstetrical, other health and nutritional. Hospitals are frightening places that must become more woman-friendly, not only in the attitude of staff and their supervisors, but in their

competence to manage the medical problems with which women present. Tying these various levels of care together is policy that values women's lives — and acts on this belief by permitting the trained provider at the most peripheral level to assist women in need.

Programming for improving maternal and neonatal health care requires a sequencing of components. The process begins with **formative research** to understand the health behaviors of the woman and her family, and the front line providers, especially those who provide prenatal care and those called upon to assist during labor and delivery. Such research provides the basis for a **communications strategy** aimed at putting maternal and neonatal health on the agenda of communities, providers and policy makers. It provides the basis for a program of **training and coordination** of the health services staff at the primary health care level as well as at the referral hospital. But the training of staff and the improvement of coordination between the different levels of the health infrastructure alone cannot guarantee quality care; **equipment, supplies, drugs, logistics systems, supportive supervision, monitoring and evaluation means, backed up by enlightened policy guidelines**, are also indispensable elements of a comprehensive maternal and neonatal health care system. MotherCare has developed many tools that are available to assist with the process of developing maternal and neonatal care programs (see Appendix). But it cannot be overemphasized that in order for programs to be acceptable to women and their families, not only must the customs that so enrich the event of childbirth be respected, but the cost of services must be within their means and the competence of providers to manage obstetrical and neonatal complications must be incontrovertible.

## 2. Scaling Up

Capitalizing on lessons learned as briefly described above (and more extensively in the text), the second phase of MotherCare could expand the focus of its maternal and neonatal health and nutrition activities. At least four general ways to expand or scale up interventions have been identified:

### 1. **Geography**

More people can be involved and affected if activities can be replicated at a larger administrative unit through:

- expanding activities from a district to a state level; state to region; region to national-level;
- increasing the number of administrative units involved in the interventions.

### 2. **Audience segmentation**

Different audiences can be included by changing or adding to the participants and beneficiaries of a project:

- Include husbands and mother-in-laws in campaigns to change attitudes;

- Target pregnant adolescent women with maternal services and interventions;
- Provide all women of reproductive age with services to improve their nutritional and health status before they become pregnant;
- Involve non-medical policy makers, doctors, medical supervisors and traditional birth attendants in midwifery service support;
- Enlist private sector and non-governmental services as providers of care.

### **3. Integration**

More comprehensive and coordinated interventions can extend the breadth and scope of a program:

- In addition to a clinical midwifery training activity, provide proactive supportive management and supervision assistance to midwives, create demand for improved midwifery services through an IEC campaign, and re-examine policy implications, including standards of practice and possibilities for outreach and referral to allow midwives to deliver more appropriate "humanized" services on demand;
- Involve more or different types of agencies in the program:
  - enlist resources from the international and indigenous private and non-governmental sector;
  - integrate activities into existing health programs (i.e., malaria and worm eradication with iron deficiency anemia control; family planning with postpartum services; a well-woman package of services with child survival programs);
  - co-opt public sector programs related to but outside of the health sector (e.g., planning, agriculture, education, information).

### **4. Sustainability**

Increasing resources through cost-sharing and technological transfer can strengthen the capabilities of implementers to do more during a longer period of time:

- Establish clear and lasting policies, legislation and budgetary commitments for women's health issues and health care delivery;
- Provide services through self-sustaining private sector agencies and professional associations;
- Institutionalize upgrading of skills through pre-service and on-the-job curricula development and training.

Institutional development is an underlying theme in "scaling up," requiring a strategy for strengthening public and private sector counterpart agencies. How an agency works with its staff, how it serves its clients, and how it relates to and interacts with the political and professional environment within which it must perform must be assessed and improved. Policy reform, technical training, management development, and monitoring and evaluation are some of the range of activities needed to ensure that "scaling up" takes place.

Long-term country programs as well as short-term intervention areas can use any combination of the four general categories of "scaling up" to derive the design and implementation of intervention strategies:

For example, the Cochabamba project in **Bolivia**, an urban-based project promoting utilization of selected NGO and public health services, could expand into other urban areas, co-opt other NGO and private sector service providers, incorporate more culturally sensitive quality of care into existing standards of practice, adapt existing IEC materials for use by other indigenous populations and integrate family planning.

Similarly, the Inquisivi project in a remote area of the Bolivian Andes could build upon its women's empowerment strategy by expanding community-based "autodiagnosis" and "planning together" activities to numerous other rural communities through other NGOs. Simultaneously, policy changes at the national and regional public sector levels in health, education and planning could be adapted in the norms for more appropriate use in rural isolated communities.

The expansion **Kenya's** congenital syphilis prevention project throughout the NCC network as well as to other urban areas has already been requested by the Ministry of Health and the Nairobi City Commission (NCC). With this expansion could come a deeper penetration of interventions into the private sector with linkages through a social marketing campaign in the community. Training modules and counseling cards could also be adapted for use in screening, treatment and counseling for other STDs, including HIV/AIDS, gonorrhea and chlamydia. The Kenya project could also become a magnet for study tours by representatives from other African nations interested in addressing STDs in an integrated program.

**Nigeria** could continue to focus on strengthening two states' capabilities to provide maternal health services to its citizens as well as to become a model program for other states in their respective health zones. Training could continue, along with IEC campaigns fashioned to generate demand for services. But management and supervision, management information systems, pre-service curriculum development and fiscal policy issues could also be addressed in order to institutionalize interventions. At the same time, maternal health projects (e.g., partograph training) of proven value could be offered to other states which have politically and fiscally committed themselves to improving maternal health care services. Concurrently, the integration of micronutrient and STD components into on-going services could be explored in areas where infrastructure and policy is in place to support provision of such services.

In **Indonesia**, lessons learned from the social marketing campaigns for iron folate consumption in Indramayu and community birthing hut utilization in Tanjungsari, along with risk assessment activities in Surabaya, could be applied in six provincial maternal health programs funded by the World Bank and the Asia Development Bank. A variety of technical assistance could be provided in the design and implementation stages to ensure integrated, comprehensive maternal health programs based on results from the MotherCare demonstration projects.

### 3. Program Emphasis by Setting

Program planning should continue to be based on the country setting criteria described in Section B, The MotherCare Approach. Strategies for safe motherhood in representative settings may be found in Appendix A and have been reprinted with permission from the World Bank from Tinker and Koblinsky, *Making Motherhood Safe*, Chapter 3, World Bank Discussion Paper No. 202, 1993.

In addition, some thought should be given to defining a fourth setting to describe the situation of Eastern Europe and the newly independent states (NIS) of the former Soviet Union: Setting D. Seventy years of political philosophy have shaped and promoted a centralized system determining services and policy implementation and intervention behavior. Now, rapid political, economic and social decentralization have outpaced the capacity of the health infrastructure and informational systems to deal with current and future health needs. In this respect, setting "D" merits interventions which are directed towards a structural refocus – salvaging what works and introducing proven interventions which can strengthen the existing health infrastructure. In this situation, interventions will be directed towards strengthening and improving the health delivery system and education/communication capabilities and to assess the needs of providers at all levels so that training interventions can be well targeted.

Financial concerns cut across all settings, that is, how much programs and specific interventions cost and how they can be financed. Although MotherCare began to collect some relevant data, primarily in setting B countries, more data need to be collected and analyzed in all settings in order to prepare the way for program sustainability.

#### **E. A Comprehensive Program for Women's Health**

Given the MotherCare experience, we recommend a comprehensive maternal and neonatal health and nutrition program (see Table 1) that brings two initiatives together:

1. The prevention of maternal and neonatal mortality and related morbidities through the development of community-based maternity care (within the primary health care-family planning program) with linkages to a referral site for managing obstetrical complications;
2. The promotion of a healthy woman (during and outside of pregnancy) and newborn through enhancing this primary health care program (including community-based family planning and maternity care) with nutrition (e.g., identifying underweight, and nutritionally deficient women, treating or educating underweight women about appropriate and available foods, reduced workload and providing micronutrients as appropriate), and infection prevention and control (e.g., syphilis and malaria screening and treatment where needed, other parasite screening and treatment, AIDS prevention).

Information, Education and Communication (IEC) forms a necessary part of the comprehensive program; it will aim to enhance the understanding of the problems and possible solutions available for both initiatives within a comprehensive program. It will focus on building awareness

of danger signs during pregnancy, labor and delivery, and the puerperium/neonatal period, and the appropriate response to make in case of such occurrences, plus create awareness of healthy and hygienic practices for all women (e.g., use of available preventive services, eating for enhanced energy, eating for two during pregnancy and lactation, understanding why to take iron/folate tablets, how and why to have a clean delivery, why to provide early and exclusive breastfeeding, care of the newborn).

A comprehensive program must include all components—nutrition and infection prevention, screening and management, routine and essential maternal/neonatal health services, and IEC—in order to improve pregnancy outcomes for the woman and the newborn. The improvement in maternal/neonatal health services will impact most on preventing maternal and neonatal death during the labor/delivery and postpartum periods, while improvements in women's health and nutrition prior to and during pregnancy will primarily impact on the survival and development of the fetus/infant and the quality of life of the woman and infant. Together, these components should have a lasting effect on the health of the population.

TABLE I

## COMPREHENSIVE HEALTH AND NUTRITION PROGRAM FOR WOMEN AND NEWBORNS

	Maternity Period				Inter- and Pre-pregnancy		
	PRENATAL	DELIVERY	POSTPARTUM	NEONATAL	NUTRITION	INFECTION	FAMILY PLANNING
<b>Woman/Community</b>	<b>Counseling for Motivation and Education</b>						
via community workers (e.g. traditional birth attendant, health worker, agricultural extension worker)	<ul style="list-style-type: none"> <li>• Home-based Mothers' Record*</li> <li>• Iron Folate</li> <li>• Education               <ul style="list-style-type: none"> <li>- Danger signs and use of services</li> <li>- Clean delivery</li> <li>- Neonatal care (warning, hygiene)</li> </ul> </li> <li>• Breastfeeding counselling</li> </ul>	<ul style="list-style-type: none"> <li>• Normal Delivery</li> <li>• Education               <ul style="list-style-type: none"> <li>- Hygiene</li> <li>- Danger signs</li> </ul> </li> <li>• Safe birth kits *</li> </ul>	<ul style="list-style-type: none"> <li>• Family Planning: Community-based Distribution (CBD)</li> <li>• Neonatal Care               <ul style="list-style-type: none"> <li>- Exclusive Breastfeeding</li> <li>- Warming</li> <li>- Hygiene</li> </ul> </li> <li>• Obstetrical-check for:               <ul style="list-style-type: none"> <li>- Fever</li> <li>- Hemorrhage</li> <li>- Convulsion</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Exclusive Breastfeeding</li> <li>• Warming</li> <li>• Hygiene</li> </ul>	<ul style="list-style-type: none"> <li>• Mid-upper Arm Circumference</li> <li>• Weight</li> <li>• Iron Folate</li> <li>• Vitamin A</li> <li>• Iodine</li> </ul>	<ul style="list-style-type: none"> <li>• Malaria Prophylaxis</li> <li>• Education               <ul style="list-style-type: none"> <li>- AIDS</li> <li>- Other STDs</li> </ul> </li> <li>• AIDS/STD Prevention               <ul style="list-style-type: none"> <li>- Condom distribution</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Oral contraceptives, condoms (Community-Based Distribution)</li> </ul>

\* Home-based Mothers' Record and Safe Birth Kits link women more closely to services, and use of formal services typically increases where these materials have been made available to women. Their direct impact on maternal mortality is under investigation.

TABLE 1, cont.

	Maternity Period				Inter- and Pre-pregnancy		
	PRENATAL	DELIVERY	POSTPARTUM	NEONATAL	NUTRITION	INFECTION	FAMILY PLANNING
<b>Health Center</b>	<b>Counseling for Motivation and Education</b>						
via midwives, general physicians, includes outreach to communities and links with a referral site.	<ul style="list-style-type: none"> <li>• Tetanus Toxoid Immunization</li> <li>• Risk Assessment*                             <ul style="list-style-type: none"> <li>- previous poor outcome</li> <li>- short, primiparous, and young</li> </ul> </li> <li>• Education                             <ul style="list-style-type: none"> <li>- Danger signs and use of services</li> <li>- Clean delivery</li> <li>- Neonatal care</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Obstetric First Aid</li> <li>• Manual procedures</li> <li>• Medical Treatment</li> <li>• Obstetric Curative Care (e.g., sepsis, secondary PPH, anemia after PPH, follow up pre-eclampsia)</li> </ul>	<ul style="list-style-type: none"> <li>• Obstetric First Aid (i.e., hemorrhage, sepsis, convulsions)</li> <li>• Family Planning (Non-clinical, barrier, IUD, implants, plus tubal ligation)</li> <li>• STD screening, treatment, partner tracking</li> </ul>	<ul style="list-style-type: none"> <li>• Neonatal First Aid</li> <li>• Promotion of Early and Exclusive Breastfeeding</li> </ul>	<ul style="list-style-type: none"> <li>• Prevention and treatment of anemia, iodine, vitamin A deficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Malaria Prophylaxis</li> <li>• STD screening, treatment, partner tracking</li> <li>• AIDS/STD prevention</li> <li>• Condom distribution</li> <li>• Urinary tract infections (UTI)</li> </ul>	<ul style="list-style-type: none"> <li>• Family planning</li> <li>• Management of unwanted pregnancies</li> </ul>

\* Risk assessment tools must be based on local assessments of risk for maternal and neonatal mortality and on the resources available to respond to such risks.

TABLE 1, cont.

	Maternity Period				Inter- and Pre-pregnancy		
	PRENATAL	DELIVERY	POSTPARTUM	NEONATAL	NUTRITION	INFECTION	FAMILY PLANNING
Referral Hospital	Counseling for						
(e.g., obstetrician anesthesiologist, neonatologist, general physician, nurse-midwives)	<ul style="list-style-type: none"> <li>• Management of high risk women (e.g., previous poor obstetric outcomes, associated medical problems, short and first pregnancy, twins, or malpresentation)</li> </ul>	<ul style="list-style-type: none"> <li>• Surgery</li> <li>• Medical treatment</li> <li>• Blood replacement</li> <li>• Manual procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Surgery</li> <li>• Medical treatment</li> <li>• Blood replacement</li> <li>• Manual procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Resuscitation</li> <li>• Oxygen</li> <li>• Warmth</li> </ul>	<ul style="list-style-type: none"> <li>• Curative Care</li> </ul>	<ul style="list-style-type: none"> <li>• Curative Care - Antibiotics (IV; IM)</li> <li>• Pelvic abscess</li> </ul>	<ul style="list-style-type: none"> <li>• Family planning support for sterilization, IUD, implant, oral contraceptives</li> <li>• Management of unwanted pregnancies</li> </ul>

## **APPENDIX A**

### **Strategies for Safe Motherhood in Representative Settings**

## APPENDIX A: Strategies for Safe Motherhood in Representative Settings

### *Setting A: Expanding Family Planning and Deliveries Attended by Trained Providers—Initial Safe Motherhood Activities Where Resources Are Scarce*

In this setting, families and communities, mostly rural, are largely illiterate and have little access to information. Women are particularly isolated, uneducated, and powerless, valued mainly for their role as mothers—particularly of sons—and have limited income. Thus women's nutritional and health status tends to be poor and their use of services limited, resulting in high fertility and high maternal mortality rates. Breastfeeding is almost universal and commonly continues for well over one year; it is likely to be the most important proximate variable for reducing fertility. No doctor, nurse, or nurse-midwife is readily accessible, as health centers are either unavailable or nonfunctioning. Family planning is essentially unavailable, unsafe abortion is common, and deliveries are performed outside the formal service structure by traditional birth attendants or relatives. A district hospital may exist but lacks the capacity—skills, equipment, and supplies—to respond to obstetric complications or provide supervision and backup for lower levels of the health system. Reaching the services that do exist is difficult because of lack of transport, geographic barriers, cost, traditions, language, poor education, ethnicity, or the community's negative perception of these women's nutritional and health status tends to be poor and their use of services limited, resulting in high fertility and high maternal mortality rates. Breastfeeding is almost universal and commonly continues for well over one year; it is likely to be the most important proximate variable for reducing fertility. No doctor, nurse, or nurse-midwife is readily accessible, as health centers are either unavailable or nonfunctioning. Family planning is essentially unavailable, unsafe abortion is common, and deliveries are performed outside the formal service structure by traditional birth attendants or relatives. A district hospital may exist but lacks the capacity—skills, equipment, and supplies—to respond to obstetric complications or provide supervision and backup for lower levels of the health system. Reaching the services that do exist is difficult because of lack of transport, geographic barriers, cost, traditions, language, poor education, ethnicity, or the community's negative perception of these services.

These conditions apply to much of South Asia and Sub-Saharan Africa, and to the rural Andean areas of South American countries—although there also are major distinctions among particular settings. In some, the population is widely dispersed (for example, Bolivia), whereas in others (for example, Bangladesh) the population is very dense. This distinction should influence program options, particularly for communications and referral transport. Given high fertility, high mortality, and limited infrastructure and resources—which may prevent the development of comprehensive maternity care in the short term—community-based distribution of a limited range of contraceptives probably would be one of the most feasible and cost-effective initial steps in reducing maternal mortality.

*Policy issues.* Policy changes should focus on developing family planning and abortion management services as a first priority. Such measures might include:

- Promoting delayed age of marriage and fertility, improved education for girls, and better employment opportunities for women.

- Reaching a consensus to initiate or expand family planning services through community-based distribution, social marketing, and existing health facilities.
- Reaching a consensus on the need to educate women and men about optimum timing and spacing of pregnancies, the dangers of unsafe abortion, and the need to improve abortion management services—for complications of unsafe abortion and, where abortion is legal, the safe delivery of services.
- Revising regulations to enable family planning and maternity care providers to perform necessary tasks.
- Expanding the role of midwives through training and community-level deployment, with responsibility delegated for the medical treatment of obstetric complications.
- Helping to develop a communications program to raise awareness of danger signs and appropriate responses.
- Mapping the coverage of existing first-referral facilities and institutionalizing accountability for back-up support, supervision, and referral for designated geographic areas.
- Developing strategies for emergency transport to referral facilities.
- Facilitating the work of the private sector to complement the work of the public health system.
- Bringing the perspective of community leaders especially women—into planning services and designing appropriate communications strategies.

*Improved services.* Improved family planning and maternity care services should include:

- Developing community outreach to identify women of reproductive age and providing them with family planning information and a variety of methods that can be obtained through community-based distribution—for example, condoms and oral contraceptives.
- Improving health communications capabilities.
- Training traditional birth attendants to use hygienic practices, refrain from harmful practices, and recognize women with demonstrated risk factors or danger signs and refer them to trained providers.
- Training outreach workers in family planning education about maternal health and nutrition, and breastfeeding promotion.
- Enabling health and community workers—once they are identified and trained—to provide some types of contraceptives (such as oral or injectable contraceptives and condoms); safe birth kits; iron and folate tablets; home-based mothers' records; and tetanus toxoid immunization.
- Linking community health workers with health center and first-referral-level staff who could meet with them periodically to assist with problem solving and be available to provide advice and backup.
- Upgrading skills of district-level—and, if available, health-center-level—medical officers, nurses, and nurse-midwives through refresher training and changes in basic training curriculums to enable them to provide family planning information and services and manage obstetric complications, including incomplete abortions.
- Equipping health centers or district hospitals to provide clinical contraception and manage obstetric complications (for example, vacuum aspiration, vacuum extraction, and blood transfusion).

*Behavioral change.* Policy changes and improved services—particularly information, education, and communication activities—should work to:

- Educate women and influential family members—such as husbands and mothers-in-law—about the benefits of family planning, especially the timing and spacing of births, sources of further information and contraceptive supplies, danger signs and demonstrated risk factors during pregnancy, labor and delivery and the postpartum period, dangers of AIDS and sexually transmitted diseases, and the appropriate use of services. In dispersed populations, this may require working through community organizations, such as women’s organizations; mobile teams; and radio. In densely populated areas, community workers who go house to house, print media, and posters may be added channels.
- Educate women and families on the importance of prenatal care, especially early and late in the term, trained assistance at delivery, referral options, and healthy practices during pregnancy, delivery and the postpartum period—such as use of safe birth kits, hygienic delivery, and adequate intake of micronutrients and calories during pregnancy and lactation.
- Mobilize communities to organize for transport and referral in response to complications associated with pregnancy and delivery, including emergencies such as postpartum hemorrhage. In dispersed populations, a private car, taxi, boat, or animal may need to be available, but in densely populated areas, public transport may be usable.

In summary, cost-effective interventions can be implemented that will meet any latent demand for family planning—reducing mortality related to pregnancy, childbirth and abortion by preempting unintended pregnancies. Family planning strategies need to take into account existing patterns of breastfeeding—not using high-dose oral contraceptives that may interfere with lactation—and should be built on up-to-date analyses of the risks and benefits of oral contraceptives and injectable contraceptives, including the risks of pregnancy. In setting A, for example, for all women, the choice of oral or injectable contraceptives will be much safer than having an unintended pregnancy.

The interventions that can make pregnancy and delivery safe are limited but important. Infections can be greatly reduced by teaching hygienic birth practices and providing tetanus immunization, but the sudden and partly unpredictable catastrophe of severe hemorrhage will be more difficult to solve. Educating the community on the need for an early response to danger signals and establishing an emergency transport system will help, but referral facilities (perhaps limited to a provincial capital) will also be needed to improve delivery services. For example, all medically qualified staff at referral centers who undertake surgery should be able to perform a cesarean operation. Clinical research in local settings may demonstrate the usefulness of an increased delegation of clinical responsibilities—for example, the routine use of oxytocic medicines immediately after delivery by a trained birth attendant at the community level. Where possible, increasing the numbers of trained midwives and deploying them to provide backup and supervision to traditional birth attendants—and a link to referral services—is likely to be cost-effective in these settings.

Technically, providing safe abortion services and treating abortion complications are similar procedures. In both cases it is essential to completely empty the uterus by surgical means, although doing so is often much more difficult in the case of abortion complications, where blood loss and infection are common. Treatment by vacuum aspiration can be conducted without local anesthetic and, if needed, by trained nonphysicians. Post-abortion family planning counseling and access to services should be a priority to help prevent repeat unwanted pregnancies.

Policymakers will have to try to assess the true dimensions of unsafe motherhood, listen to the perspectives and perceptions of women and families, and involve a resource-poor community in the solution of its own problems, largely building on existing skills or infrastructure including retail outlets—for the distribution of contraceptives, iron tablets, or safe delivery kits. Social marketing can promote the subsidized sale of contraceptives, iron tablets, and safe delivery kits. It can help make the strategy cost-effective, if backed up by messages on radio and other media.

*Setting B: Upgrading Provider Skills and Strengthening the Referral System—Emphasizing the Use of Improved Services*

Public maternal health and family planning services are available in rural areas but are rarely used. Similarly, in periurban and urban areas, public and private services are available, but are underutilized. In rural areas—for example, in Indonesia and Zimbabwe—most deliveries are performed by birth attendants, trained or untrained, who remain isolated from referral services. The average duration and extent of breastfeeding may be falling. Sexually transmitted diseases and HIV/AIDS are often increasingly important problems. The health system does provide rural communities with primary health services—child immunization, for example that are well-utilized. Family planning services are available, but the use of contraceptives is low or unsystematic and fertility remains high.

Health centers are generally staffed by a medical assistant and a licensed nurse-midwife. Health centers can provide routine care for normal pregnancies and deliveries, but screening, early case detection of obstetric complications, management of complications, and referral remain ineffectual because of poor-quality care. The infrequent use of maternal services may also be because of the cost of care, a lack of awareness of the benefits of care, a lack of awareness of danger signs of certain complications of pregnancy, or other factors such as traditions, language, and poor health education, despite widely disseminated health messages. Those most needing services are least likely to seek care. Many women, especially the young and unmarried, resort to unsafe abortion. As a result, and because of the low use of obstetric services and poor quality of these services, pregnancy-related deaths remain relatively high.

*Policy issues.* Policy measures should enhance and formally coordinate available services. This would mean:

- Reaching consensus to enhance family planning coverage and choice by providing a wide range of reversible and permanent methods through social marketing, community-based distribution, and clinical methods at health centers and hospitals.
- Reaching a policy consensus on the provision of abortion services and the provision of care for incomplete and septic abortions and postabortion family planning.

- Ensuring referral and supervisory linkages between the community, health center, and hospital levels and developing protocols detailing responsibilities for family planning services and obstetrics, including the management of complications at each level of care.
- Considering developing maternity waiting homes near referral facilities for women from rural areas.
- Authorizing the delegation of medical responsibilities, such as IUD insertion, manual removal of the placenta, or symphysiotomy, to accessible skilled staff and training and licensing staff to carry out associated tasks.
- Ensuring logistical support for referral—for example, communications and transport—through inter- and intra-sectoral coordination of public service organizations in rural areas and of public and private organizations in urban or periurban areas.
- Bringing women's perspectives into service planning and communications design and engaging men and health providers in this dialogue.
- Encouraging the work of the private sector and expanding the resources provided to nongovernmental organizations to encourage cost recovery and build on the competitive advantage of each sector, including provision of subsidized services to marginalized groups.

*Improved services.* Improved services should include:

- Enhancing the quality of family planning programs by making available a variety of methods, appropriate counseling, and follow-up through several distribution channels.
- Ensuring the availability of services to treat abortion complications; provide safe services, where legal; and provide postabortion family planning services.
- Enhancing primary health care to ensure provision of tetanus immunization to all women of reproductive age; strengthen health, nutrition, and family planning education; and provide iron and folate supplementation, home-based mothers' records, and safe birth kits for all pregnant women.
- Improving the basic training and using refresher training to upgrade the skills of providers—at health centers and district hospitals—in family planning; management of abortion, if legal, and treatment of abortion complications; prenatal screening; early case detection of obstetric problems; and management, treatment, counseling, and appropriate referral.
- Equipping and staffing referral facilities based on mapping to assure geographic coverage, 24-hour service, and accountability.
- Improving the access of rural women to referral care, possibly through use of maternity waiting homes near district hospitals.
- Strengthening the distribution system for drugs, supplies, and equipment.
- Designing special programs for adolescents and other neglected groups—such as prostitutes and the very poor and isolated.

*Behavioral change.* Interventions to improve health behavior should include:

- Designing and implementing a communications program that aims to expand use of family planning and maternity care services, as well as improve awareness of pregnancy-related danger signs and the dangers of AIDS and sexually transmitted diseases.

- Mobilizing communities to organize appropriate transport and referral systems for maternal complications.
- Educating mothers, husbands, and families about healthy practices during pregnancy, delivery, and the postpartum period, specifically about family planning, safe birth kits, hygienic labor and delivery, the need for tetanus toxoid immunization, and nutrition.
- Enhancing health providers' awareness of the cultural, psychological, and social aspects of family planning and reproductive health.
- Improving providers' attitudes and practices.

Opportunities for social marketing and cost recovery for services are greater in this setting than in setting A, but charges for curative health care for services other than maternal and child health and family planning should be instituted first. Caution is also needed to ensure that fees do not reduce the use of essential safe motherhood services. Compared with setting A, the over-the-counter trade, particularly through pharmacies, becomes more important. At the same time, community-based distribution or special outreach programs may remain the only way of helping poor and isolated populations or most socially disadvantaged in expanding urban areas.

Educating families about breastfeeding and monitoring the marketing of milk formula in accordance with the WHO Milk Formula Code become especially important, as rapid and unnecessary changes in breastfeeding practices jeopardize the health of infants and undermine any rise in contraceptive prevalence. And as clinical family planning services achieve a wider coverage, methods requiring higher levels of skill and equipment—such as IUDs and surgical contraception—are more widely used. So, the appropriate delegation of clinical services, such as insertion of IUDs by midwives, often remains a key to success. Without a strong commitment to expanding and improving family planning services, abortion rates are likely to rise as more and more women resort to whatever means available to control their fertility for the first time.

The challenge to provide safe, accessible family planning, abortion management, and maternal care services is augmented in this setting. Life-saving interventions, such as cesarean operations for obstructed labor and blood transfusions for hemorrhage, become more frequent. Nevertheless, the pressure on maternity services still makes it worthwhile to explore other possibilities, such as symphysiotomy, which may be delegated to lower levels of the health system. Policymakers should regularly review clinical practices and should never allow perfection to become the enemy of the achievable.

Logistics are likely to be uneven because of the differences in infrastructure across the country, and special attention must be given to ensuring that ruptures do not occur in the supply lines for medicines, disposable equipment needed for obstetric care, and contraceptives. Communications strategies will be more sophisticated than in setting A because of more diverse and widespread media coverage, and commercial advertising agencies that have proven skills might be appropriately subcontracted by governments and nongovernmental organizations to provide related services.

### *Setting C: Maximizing Women's Access to and Efficient Use of Reproductive Health Services*

In urban settings, women may not have a high level of education but tend to be mobile and have access to information—for example, in Brazil, Jamaica, and Mexico. Fertility and mortality levels are relatively low. Public and private maternal health services are widely available for most sectors of the population, and institutions—primarily hospitals—are the venue of choice for delivery and selected family planning services. This is in contrast to setting B. Despite widely available general practitioners and nurse-midwives, a high proportion of women elect to deliver in hospitals, because the hospital can provide the highest level of care. Thus, referral hospitals tend to be over-used by those at low risk and under-used by those at high risk: the most socioeconomically disadvantaged women tend to deliver at home without adequately trained assistance, as in settings A and B.

Contrary to women's beliefs, however, medical facilities, which have become overstretched by demand, fail to provide high-quality, supportive care for family planning, routine deliveries, abortion management, or obstetrical emergencies. Furthermore, the overuse of certain procedures in hospitals, such as fetal monitoring and cesarean section, carries unnecessary health risks and costs. Prenatal screening is poorly linked to action, and referral is generally weak. The failure to provide adequate family planning or maternal care often stems from inadequate training, a lack of supportive supervision, and a lack of job descriptions and standardized protocols. Options for changing the venue or person providing family planning, safe abortion management, or routine delivery care are strongly tied to policy and the organization of health services. Although many methods of family planning are available through the public and private sectors, the poor may still lack access to services and—in those countries where abortion is not legal—the use of unsafe abortion remains high, especially among adolescents and recent migrants living in periurban areas. Given relatively high rates of contraceptive prevalence and consequent low fertility, improving the quality of maternity care is likely to be the priority intervention for further improvement in maternal health. In the states of the former U.S.S.R. and Eastern Europe, however, excessive reliance on abortion—as virtually the only method available for birth prevention—creates an additional problem. In those countries, expanding access to contraceptive methods should be a priority.

*Policy issues.* Policymakers should expand the focus beyond family planning and basic maternity care to decentralize services and redirect women to appropriate levels of care. Policymakers should thus:

- Reach a consensus on the provision of abortion services, ensuring effective care for incomplete and septic abortions and post-abortion counseling and services.
- Establish a systematic continuum of care, with routine services decentralized to the community level, referral services provided at appropriate facilities, and hospital care reserved for those whose health conditions require it most.
- Institute provider accountability for maternity outcomes.
- Authorize delegation of medical responsibility—for example, IUD insertion or manual removal of the placenta—to more accessible providers, such as midwives, and train and license such providers.

- Develop a more comprehensive strategy for women's health, including expanding prenatal care to provide other reproductive health services, such as the prevention and treatment of AIDS and reproductive tract infections, and expanding nutritional screening and treatment.
- Promote policies to encourage breastfeeding in hospitals and the workplace.
- Emphasize diversification of family planning programs to meet the varying needs of women of different ages by providing services through a variety of channels—including private sector advertising and distribution, postpartum programs, and outreach to adolescents.
- Determine how to improve the cost-efficiency of programs through, for example, the establishment of cost-recovery schemes or cross-subsidization programs for public sector services, the institution of fees to discourage use of higher-level facilities when not needed, or privatization of services at all levels for those able to pay.
- Encourage the development of responsible private sector and nongovernmental organization services and provide regulatory monitoring.
- Bring women's perspectives into strategies for redirecting services and promoting healthy maternity care and reproductive health practices.
- Improve women's status through female education, employment, and the promotion of overall gender equality.
- Remove restrictions on private sector advertising of contraceptives and implement the Code of Marketing of Breastmilk Substitute promoted by WHO and other international agencies.

*Improved services.* Better services, tied to policy changes, should include:

- Using changes in basic training and refresher training to upgrade providers' skills in a full range of family planning services, management of abortion or complications from abortions, and comprehensive obstetric and broader reproductive health care.
- Strengthening and integrating broader services for women's health, to address other problems of nutrition, sexually transmitted diseases, AIDS, other infections, and cancers, as appropriate.
- Improving the efficiency of service management, instituting maternal and perinatal death audits, and coordinating feedback and systematic supervision between the hospital and community levels to ensure the quality of all available maternal services.
- Shifting provider focus toward enhanced quality of care, such as case management and counseling, for family planning and maternal care, with special attention to marginalized groups, such as adolescents.
- Reducing excessive medical intervention—such as cesarean section.

*Behavioral change.* Desired behavioral changes include:

- Promoting awareness and the use of alternative prenatal care and birthing facilities to divert women needing only routine care from hospitals.
- Influencing providers toward the preventive and promotive perspective of safe motherhood and away from more advanced technologies for treatment.

- Developing community-oriented messages to redirect the use of services and to inform adolescents and other vulnerable groups about family planning, health practices during pregnancy, labor and delivery and the postpartum period, and the dangers of AIDS and sexually transmitted diseases.

In setting C, all women should have access to cesarean sections and blood transfusions, when needed. Unhygienic, traditional deliveries should practically disappear. A key issue facing policymakers and program managers is to ensure that services are not overloaded; this usually means encouraging the use of private practitioners and private clinics, possibly introducing fees for certain public services, and instituting quality assurance mechanisms in the health profession, such as confidential enquiries into maternal deaths. Establishing birthing centers with close access to hospitals has proven cost-effective in countries such as Mexico. More reliable vital statistics should be available than in settings A and B, although abortion deaths may continue to be underestimated.

A higher proportion of family planning and health costs are likely to be met by consumers, who now benefit from a wider variety of distribution channels and a full range of contraceptive choices. Abortion policies and techniques can be expanded beyond those found in setting B. The private and public sectors may need to review and upgrade the quality of outreach and preventive education and condom distribution through sexually transmitted disease clinics and other channels, particularly because the heterosexual spread of HIV/AIDS is becoming more common.

Health communications strategies are also likely to involve complementary public and private sector activities. Policymakers should ensure that no arbitrary rules restrict the commercial advertising of contraceptives. The public sector will need to maintain scientifically informed education on the nutrition of infants and pregnant women, and health practices related to pregnancy, breastfeeding, sexually transmitted diseases, and AIDS—sometimes in the face of false information from the media or misinformed public perceptions in a modernizing society. (See Table 2 in the appendix for a summary of possible interventions in the three settings.)

**TABLE 2: Possible Priorities in Three Settings Ranging from A, Weakest Health Systems, to C, More Developed Systems**

	<i>Possible intercessions</i>	<i>Setting</i>		
		A	B	C
<i>Family planning</i>	Reach consensus to initiate	X		
	Develop outreach or provide services	X		
	Establish community-based distribution	X	X	
	Establish social marketing	X	X	
	Increase coverage and choices of methods		X	X
	Enhance quality and follow-up		X	X
	Enhance efficiency of service delivery			X
	Promote breastfeeding	X	X	X
<i>Linkages with related health services</i>	Strengthen linkages between maternal health and family planning	X	X	X
	Integrate maternity care with broader health services			X
	Enhance overall quality of care		X	X
<i>Extension of maternity services</i>	Determine a strategy to extend coverage of prenatal and obstetric services (midwives, maternity waiting homes, first-referral facilities)	X	X	
	Implement special programs for marginalized groups		X	X
	Broaden resources for NGO participation in programs for under-served groups	X	X	
	Develop maternity waiting homes		X	
	Decentralize services (maternal and child health clinics, birthing centers)			X
<i>Family planning and maternal care training</i>	Train outreach workers for case identification and referral	X		
	Upgrade providers' skills at all levels (traditional birth attendants, midwives, nurses, physicians)	X	X	X
<i>Essential obstetric services</i>	Equip and supply district hospitals or health centers to manage obstetric complications	X	X	
	Ensure services for abortion and/or abortion complications	X	X	X
	Reduce excessive surgical procedures (such as cesarean section)			X
	Upgrade providers' skills at all levels	X	X	X
<i>Distribution of medical supplies</i>	Strengthen drugs and equipment distribution system	X	X	X
	Provide safe birth kits for all deliveries	X	X	
	Provide iron and folate tablets to all pregnant women	X	X	X

53

TABLE 2, cont.

	<i>Possible interventions</i>	<i>Setting</i>		
		A	B	C
<i>Immunization program</i>	Extend tetanus toxoid immunization, particularly to pregnant women	X		
	Enhance tetanus toxoid immunization coverage to all women of reproductive age		X	X
<i>Organization and management</i>	Establish phased planning, needs assessments	X	X	X
	Assure functioning referral systems	X	X	X
	Develop or strengthen vital statistics registration system	X	X	X
	Establish and strengthen linkages—health centers and hospitals	X	X	X
	Train, license, and delegate to health provider staff	X	X	X
	Coordinate referrals through public, private, and NGO structures		X	X
	Incorporate women's perspectives into service structure	X	X	X
	Establish home-based mothers' records	X	X	
	Improve management, supervision, and efficiency		X	X
<i>Resource mobilization</i>	Mobilize communities for transport and referral	X	X	
	Encourage commercial marketing and cost-recovery		X	X
	Privatize routine services			X
<i>Behavior change</i>	Enhance provider understanding of complications	X	X	X
	Educate mothers, men, and families and other decisionmakers to the danger signs and the importance of seeking care	X	X	X
	Educate mothers and families in promoting healthy practices	X	X	X
	Redirect service demand to appropriate level facility			X

-54

**APPENDIX B**

**Tools for Programming in Maternal and  
Neonatal Health and Nutrition**

## APPENDIX B: Tools for Programming in Maternal and Neonatal Health and Nutrition

- Assessment**
- Assessing Maternal and Peri-Neonatal Health: Tools and Methods. The MotherCare Experience. April 1994, Abigail Harrison. Includes national situational assessments, community level tools (e.g., question areas for focus groups, in-depth interviews; "autodiagnosis; ethnographic means, quantitative surveys – longitudinal, case-control, case review, and training needs assessment instruments.
  - The "Autodiagnosis": A Methodology to Facilitate Maternal and Neonatal Health Problem Identification and Prioritization in Women's Groups in Rural Bolivia. Working Paper 16A, May 1993, Lisa Howard-Grabman
- IEC**
- Applying Social Marketing to Maternal Health Projects: The MotherCare Experience, September 1993, The Manoff Group
- Training**
- Traditional Birth Attendant Training Manual, August 1993, INCAP, Guatemala
  - Life Savings Skills Manual, July 1991, American College of Nurse-Midwives, Sandra Buffington, Margaret Marshall (support to ACNM received from MotherCare for the development of the manual)
  - Interpersonal Communication and Counseling Curriculum for Midwives, August 1993, Nigeria
  - The Warmi Project: A Participatory Approach to Improve Maternal and Neonatal Health, An Implementor's Manual (Bolivia), August, 1993, Lisa Howard-Grabman, Guillermo Seoane, Cheri Ann Davenport
- Services**
- Management of Life Threatening Obstetrical Emergencies: Protocols and Flow Diagrams for Use by Registered/Licensed Nurse-Midwives in Health Centers and Private or Government Services, August 1993, Barbara Kwast, Suellen Miller, Colleen Conroy
  - Protocols for Management of the Principal Obstetric and Neonatal Emergencies for Community Health Centers and Health Posts (Guatemala), August, 1993, INCAP, Guatemala
  - Protocols for Management of the Principal Neonatal Complications for Regional Hospitals (Guatemala), August, 1993, INCAP, Guatemala (Draft).

- Protocols for Management of the Principal Obstetric Complications for Regional Hospitals (Guatemala), August, 1993, INCAP, Guatemala

**Monitoring  
Tools**

- Perinatal/Maternal Audit (Draft)
- Postnatal Audit, Save the Children/Bangladesh (Draft)

**STD**

- "Women, Infants and STDs: Opportunities for Action in Developing Countries." Reports of the Conference held in Rosslyn, Virginia. November 1991. Joe Coyle and Sally Di Paula. Washington, DC: MotherCare Project, 1992.
- Preventing Congenital Syphilis. Participants' Manual in Congenital Syphilis Prevention. August 1993. University of Nairobi, University of Manitoba. Kenya.

**Nutrition**

- Maternal Nutrition and Pregnancy Outcome: Anthropometric Assessment. Katherine Krasovec and Mary Ann Anderson (eds). 1991. Washington, DC: PAHO. Scientific Publication No. 529.
- Guide for Country Assessment of Breastfeeding Practices and Promotion, 1993, Marcia Griffiths, Mary Ann Anderson.

**Programming  
Guidelines**

- "Making Motherhood Safe." World Bank Discussion Paper 202, May, 1993, Anne Tinker, Marjorie Koblinsky, Patricia Daly, Cleone Rooney, Charlotte Leighton, Marcia Griffiths, A.A. Zahidul Huque, Barbara Kwast.