

MATERNAL HEALTH ISSUES

A. *Why Address Maternal Health?*

- There are an estimated 170 million pregnancies every year around the world,¹ and every time a woman is pregnant she risks a sudden and unpredictable complication that could result in her death or injury and the death or injury of her infant.
- At least 40 percent of all pregnant women will experience some type of complication during their pregnancies. For about 15 percent, the complication will be potentially life-threatening and will require prompt obstetric care (Koblinsky et al., 1993).
- About 60 million women suffer from some complications from pregnancy, also known as maternal morbidity. For more than 15 million women, these morbidities are long-term and often debilitating (Ashford, 2002).
- About 500,000 women die of pregnancy-related causes each year (Hill et al., 2001).
- Safe motherhood is a human right and must be underpinned by laws and policies that support effective action to increase women's access to basic education, adequate nutrition, economic resources, as well as appropriate health services.

B. *What Is Safe Motherhood?*

Safe motherhood refers to a woman's ability to have a safe and healthy pregnancy and delivery. The goal of safe motherhood is to ensure that *every* woman has access to a full range of high-quality, affordable sexual and reproductive health services—especially maternal care and treatment of obstetric emergencies to reduce deaths and disabilities.²

C. *What Do Maternal Health Programs Try to Do?*

Maternal health programs typically focus on achieving the following three outcomes:

- Preventing unwanted pregnancy
- Reducing maternal mortality and morbidity
- Reducing neonatal mortality and morbidity

¹This figure is calculated based on estimated global number births for 2000 (133,284,000) as cited in the UN's World Population Prospects: The 2002 Revision Population Database and assumes 20 percent pregnancy wastage.

²Based on commitments made at the World Summit for Children, International Conference on Population and Development, World Summit on Social Development, Fourth World Conference on Women, and the Convention on the Elimination of All Forms of Discrimination Against Women.

These outcomes can be achieved through:

- Meeting the need for family planning;
- Increasing the percentage of births attended by skilled attendants;
- Increasing access to essential obstetric care;
- Preventing unsafe abortion and managing postabortion complications; and
- Increasing access to effective antenatal care.

D. *What Is the Magnitude of Maternal Health Issues?*

- About 500,000 women die each year due to pregnancy-related causes (Hill et al., 2001).
- Ninety-nine percent of pregnancy-related deaths occur in the developing world (WHO/UNICEF, 1996).
- Globally, there are an estimated 170 million pregnancies each year.³
- Nearly 123 million women want to stop having children or postpone their next pregnancy but are not using contraception (Ross and Winfrey, 2002).
- Approximately 75 million pregnancies are unwanted each year (UNFPA, 1997).
- A woman's lifetime risk of dying from pregnancy-related complications or during childbirth is one in 48 in the developing world versus one in 1,800 in the developed world (Population Reference Bureau, 1998).
- At least 35 percent of women in developing countries receive no antenatal care during pregnancy, and 70 percent receive no postpartum care during the six weeks following delivery (WHO, 1997b).
- In 1996, only 53 percent of deliveries in developing countries took place with a skilled birth attendant (WHO, 1997b).
- In some countries, as many as 95 percent of deliveries are performed with no skilled birth attendant (WHO, 1997b).
- About 40 percent of all pregnant women will experience some type of complication during their pregnancy (Koblinsky et al., 1993).
- An estimated 1 in 12 women die of pregnancy-related causes in West Africa compared with 1 in 4,000 in Northern Europe (United Nations, 1995).
- There are remarkable similarities in the main causes of maternal deaths in developed and developing countries, including hemorrhage, sepsis, and hypertensive disorders such as eclampsia (Maine, 2000).
- Abortion-related complications result in nearly 80,000 maternal deaths and hundreds of thousands of disabilities (WHO, 1997a).
- Abortion-related causes of maternal death account for 13 percent of maternal deaths in developing countries (Maine, 2000).
- Obstructed labor accounts for about 8 percent of maternal deaths in developing countries but is almost unknown as a cause of death in developed countries due to the use of cesarean sections (Maine, 2000).

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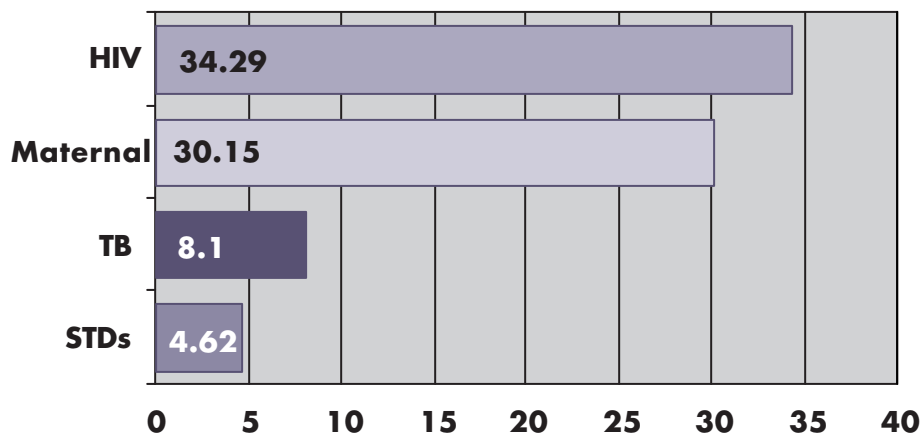
E. What Are the Consequences of Poor Maternal Health?

The consequences of poor maternal health are widespread, affecting women, families, communities, and society.

Unwanted pregnancies. Without adequate access to family planning information and services, women may have unplanned and unwanted pregnancies. Unwanted pregnancies can threaten a woman’s health or well-being, and many unwanted pregnancies are terminated using unsafe procedures that can lead to death or disability.

Long-term maternal morbidities. Limited access to antenatal care and skilled attendance at birth can lead to long-term maternal morbidities. About 60 million women suffer from some maternal morbidity, and these morbidities are long-term and often debilitating for more than 15 million women (Ashford, 2002). Women of reproductive age in the developing world lose more disability-adjusted life years (DALYs)⁴—30 million—to maternal causes than to any other cause other than HIV/AIDS (see Figure 1)⁵ (WHO, 2001a). The number of DALYs due to HIV/AIDS has almost tripled in just ten years, from 12 million in 1990⁶ to over 34 million in 2001.

Figure 1. Number of DALYs Lost to Women Aged 15-44 Due to Maternal Causes, HIV, STDs, and TB



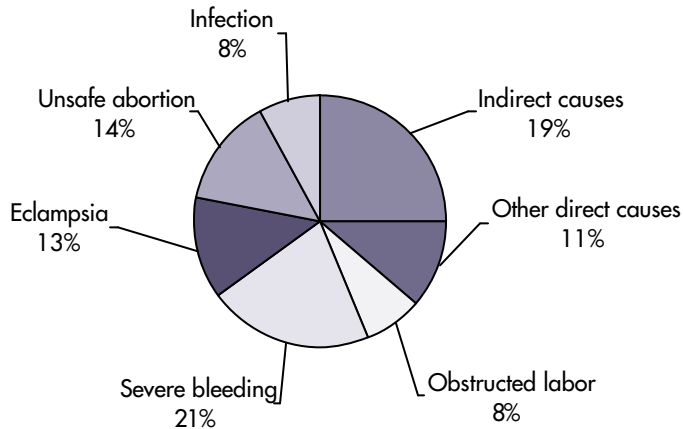
⁴DALYs is the measurement used by the World Bank and WHO to express how a healthy person is affected by disease. This measurement combines years of life lost because of premature death and disability.

⁵To estimate DALYs for women in the developing world, data for three WHO regions: AMRO A, EURO A and WPRO A were subtracted from global DALYs for women of reproductive age (15-44).

⁶DALYs for 1990 were presented in the World Development Report 1993.

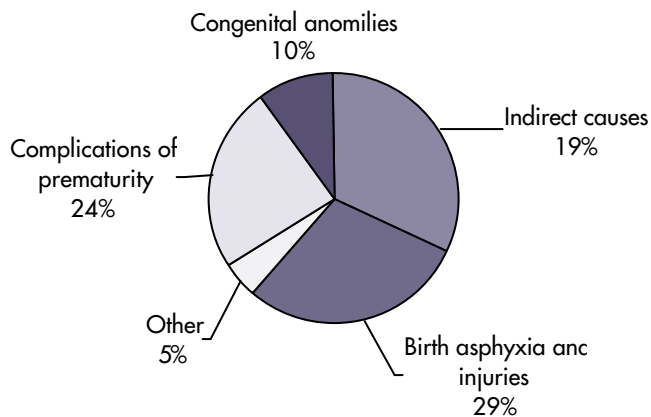
Maternal mortality. Lack of antenatal and postnatal care and assistance during delivery can lead to maternal death. Maternal deaths have both direct and indirect causes (see Figure 2) (UNFPA, 2001). About 80 percent of maternal deaths are due to direct causes, which include obstetric complications such as severe bleeding, infection, unsafe abortion, hypertensive disorders (eclampsia), and obstructed labor. Women also die of indirect causes, such as malaria, diabetes, hepatitis, heart disease, and anemia; these diseases or causes of ill health can be exacerbated during pregnancy.

Figure 2. Medical Causes of Maternal Death



Neonatal mortality. Some of the same factors that cause maternal mortality and morbidity, such as complications of pregnancy and childbirth and poor management of those complications, also cause or contribute to a significant proportion of stillbirths and newborn deaths. There are more than 7 million infant deaths per year (WHO, 2001). Approximately half of infant deaths occur during the neonatal period (the first month of life) (WHO, 2001). Of neonatal deaths, nearly 75 percent occur in the first week (WHO, 2001). Almost 30 percent of neonatal deaths are due to birth asphyxia and injuries, and another 24 percent due to complications of prematurity (see Figure 3) (JHU, 1999). Significant additional reductions in infant mortality can be achieved with interventions designed to improve the health of the mother and her access to care during labor, birth, and the critical hours immediately afterward (World Bank, 1999).

Figure 3. Medical Causes of Neonatal Death



Child mortality. A mother’s death has profound consequences for her family. In some developing countries, if the mother dies, the risk of death for her children younger than five is doubled or tripled. In Bangladesh, children up to age 10 whose mothers die have three to five times the mortality rate of children whose mothers are alive or whose fathers die (World Bank, 1999).

Increased poverty, weakened households, and communities. A woman suffering long-term disabilities from pregnancy or childbirth may not be able to participate in the workforce or be economically productive. Children of disabled or sick mothers may have inferior nutrition, hygiene, and health than children of healthy mothers. Also, some children drop out of school to work, further contributing to the cycle of poverty. Losing productive members of society affects governments because of the loss of investments made in education, health care, and job training. A study in Uganda estimated the productive years lost due to various maternal disabilities, assuming a total work life of 65 years per woman (Table 1). Postpartum hemorrhage (severe bleeding), hypertensive disorders (eclampsia), and obstructed labor each can lead to 35 productive years lost per woman (SARA Project, 2000).

Table 1: Productive Years Lost Per Woman Due to Maternal Morbidity, Uganda

Complication	Productive Years Lost Per Woman
Postpartum Hemorrhage (Severe bleeding)	
-Severe anemia	2.5
-Sheehan’s Syndrome	35.5
Sepsis (Infection)	
-PID/PPP	0.04
Hypertensive disorder (Eclampsia)	
-Neurosequalea	35.5
Obstructed labor	
-Stress incontinence	36.5
-Fistula	46
Abortion	
-Severe anemia	2.5
-PID/PPP	0.04
Maternal malaria/anemia	0.75

F. Why Should Countries Invest in Maternal Health?

Good maternal health is an economic investment. A healthy mother can be highly productive and contribute to the well-being of her family and community. Poverty increases at the family level when a woman is sick and cannot work. Consequently, less money is available for health care and education for children, which in turn has an impact on the greater society. Increasing access to maternal health services will help ensure that women remain vital participants in the economic well-being of their country. A model application in Uganda projected that implementing a set of

interventions described in the “mother-baby package” would, in 10 years, save 250,000 women from disability and avert 12,000 maternal deaths, resulting in productivity gains of US\$90 million (Burkhalter, 2000).

Maternal health interventions are highly cost-effective. Safe motherhood interventions, which are designed to reduce maternal death and disability, are highly cost-effective. Basic maternal care costs in low-income settings have been estimated to be as little as US\$3 per person per year. This includes health care during pregnancy, delivery, and after birth; postpartum family planning; and newborn care (WHO, 1997c). However, a review of available costing information indicates that antenatal care costs typically range from US\$2-\$15 per visit (Borghi, 2001). On average, the cost of a normal delivery at a health center ranges between US\$3-\$15 in African, Asian, and Latin American countries. Costing studies in these countries indicate that a normal delivery in a hospital costs between US\$12-US\$81 (Borghi, 2001).

“Women are the mainstays of families, the key educators of children, healthcare providers, carers of young and old alike, farmers, traders, and often the main, if not the sole, breadwinners. A society deprived of the contribution made by women is one that will see its social and economic life decline, its culture impoverished, and its potential for development severely limited.”

-*Reduction of Maternal Mortality: A Joint WHO/UNFPA/UNICEF/World Bank Statement, WHO, Geneva, 1999.*

International consensus support maternal health. In the last 10 years, international forums, conferences, and corresponding agreements support the inclusion of the right to safe pregnancy and childbirth as an integral part of reproductive health. The Safe Motherhood Initiative (1987), Convention on the Rights of the Child (1990), Convention on the Elimination of all Forms of Discrimination Against Women (1992), the World Conference on Human Rights *Programme of Action* (1993), the International Conference on Population and Development (ICPD) *Programme of Action* (1994), the Fourth World Conference on Women *Platform of Action* (1995), the World Summit on Social Development (1995), and the Joint WHO/UNFPA/UNICEF/World Bank Statement on Reduction of Maternal Mortality (1999) all helped institutionalize the need to set priorities and address the needs of women and their families before and during the childbearing years. These international forums and agreements also identify roles for different sectors, help identify linkages, and create common goals with a unified language to address the problem. (For details on specific agreement language see Maternal Health Handout II.1.3.)

G. What Are Factors that Influence Maternal Health?

Inadequate health care. Maternal deaths are strongly associated with substandard health services and a lack of available medical equipment and supplies at the time of labor, delivery, and immediately after birth. For example, a community-based investigation to assess the preventability of maternal deaths in rural and urban areas of Zimbabwe, identified the lack of appropriately trained personnel as contributing significantly to maternal deaths (Fawcus et al., 1996). Suboptimal clinic and

hospital management was identified in 67 percent of rural and 70 percent of urban deaths (Fawcus et al., 1996).

Inaccessible health care. There is a strong correlation between maternal death and disability and distance to health services. Most rural women (80 percent) live more than five kilometers from the nearest hospital. In Zimbabwe, unavailability of transport contributed to 28 percent of the rural maternal deaths in a study of 105 maternal deaths (Fawcus et al., 1996). Vehicle shortages and poor road conditions mean that the main mode of transportation, even for women in labor, includes walking, being carried in hammocks, or traveling via rickshaw or motorcycle. A study in Maputo, Mozambique, compared 133 consecutive eclamptic patients with 393 non-eclamptic referent women. Eclamptic cases occurred more often among women without access to transport who had to walk to reach antenatal clinics (Bugalho et al., 2001). However, successful transportation systems linked to essential obstetric care have decreased the numbers of deaths. For example, in Uganda a tricycle-radio program funded by UNFPA enabled TBAs and midwives to arrange transportation for pregnant women to the hospital 24 hours a day. Maternal deaths were more than halved in the first year of the project (Amooti-Kaguna, 2000).

Costs for services are prohibitive. Recent estimates from a study costing maternal health care services show that user fees (in US dollars) ranged from \$0.97 to \$2.79 in Uganda, \$0.15 to \$8.70 in Malawi, and \$0.62 to \$3.15 in Ghana per visit for antenatal care at a health center or hospital. For vaginal delivery at a health center or hospital, women were asked to pay from \$2.26 to \$22.75 in Uganda, \$0.35 to \$7.86 in Malawi, and \$12.52 to \$20.64 in Ghana. Fees for midwife services were lower for both antenatal care, at an average cost of \$1.05 in Uganda and \$2.08 in Ghana, and vaginal delivery, at an average of \$7.80 in Uganda and \$8.99 in Ghana (Levin et al., 2000). Even when formal fees are low or nonexistent, women often face expenses for transport, drugs, food, and lodging for themselves or their family members. The same costing study found that travel fees to obtain antenatal care services ranged from \$0.56 to \$1.26 in Uganda, \$0.12 to \$1.13 in Malawi, and \$0.08 to \$0.64 in Ghana. Travel fees to obtain vaginal delivery services were higher, ranging from \$0.52 to \$4.06 in Uganda, \$0.30 to \$2.37 in Malawi, and \$0.75 to \$1.35 in Ghana (Levin et al., 2000).

Poor quality of care. Poor quality of care is one of the most common reasons women provide for choosing *not* to use available maternal health services. Health facilities in developing countries face chronic shortages of equipment, drugs, and basic supplies, including blood for transfusion. Health facility staff are often poorly trained, may lack essential clinical skills, and may not observe hygienic practices. Also, health workers may be rude, unsympathetic, and uncaring; thus, women prefer to use the services of traditional birth attendants (TBAs) and healers. Other factors that result in non-use include the lack of privacy, run-down physical facilities, inconvenient operating hours, and restrictions on who can stay with a woman at the health facility (AbouZahr et al., 1996).

Lack of skilled care at childbirth. Skilled care at childbirth refers to “the process by which a pregnant woman is provided with adequate care during labor, birth, and the postpartum and immediate newborn periods. [To give skilled care], the

attendant must have the necessary skills and must be supported by an enabling environment at the domiciliary, primary (health center), or first referral (hospital) levels, which includes adequate supplies, equipment, and infrastructure as well as an efficient and effective system of communication and referral/transport” (“Saving Lives: Skilled Attendance at Childbirth,” 2000). Skilled care during childbirth is important because millions of women and newborns develop serious and difficult-to-predict complications during or immediately after delivery. A critical component of skilled care in childbirth is the skilled birth attendant. “The term ‘skilled attendant’ refers to people with midwifery skills (for example, doctors, midwives, nurses) who have been trained in the skills necessary to manage normal deliveries and diagnose, manage, or refer obstetric emergencies. They must be able to manage normal labor and delivery, recognize the onset of complications, perform essential interventions, start treatment, and supervise the referral of mother and baby for interventions that are beyond their competence or not possible in the particular setting” (WHO et al., 1999).

Low status of women. Socioeconomic and cultural norms contribute to women’s unequal access to resources, including health care, food, and preventive services. Social expectations and pressures define what is or is not acceptable for a woman to do, making it difficult for a woman to protect herself from unwanted pregnancy or seek timely care in labor in order to prevent death. Furthermore, in many settings, women often lack decision-making power in families, communities, and societies (WHO et al., 1999). Thus, social taboos and unequal power relations between men and women often prevent women from using contraceptives, for example. Opposition from husbands is one of the most common reasons women give for not using contraception.

Gender-based violence. Between 20 and 50 percent of women and girls report having been subject to sexual coercion, abuse, or rape (Heise, 1995). These women are at high risk for unwanted pregnancy and other sexual and reproductive health problems. Globally, as many as one in every four women is physically or sexually abused during pregnancy, usually by her partner (Heise, 1999). Violence before and during pregnancy seriously impacts pregnancy outcomes and health consequences for women and their children. Pregnant women who have experienced violence are more likely to delay seeking prenatal care and gain insufficient weight. They are also more likely to have unwanted or mistimed pregnancies and bleeding during pregnancy. Violence has been linked with increased risk of miscarriages and abortions, premature labor, fetal distress, and low birth weight (Heise, 1999). In India, verbal autopsies from a surveillance study of all maternal deaths in over 400 villages and 7 hospitals in three districts of Maharashtra revealed that 16 percent of deaths during pregnancy were due to domestic violence (Ganatra, 1996).

Delays in seeking services. Women may delay or not seek treatment because of lack of recognition of a problem or because of logistical, social, or cultural barriers. Most births in developing countries take place in locations other than health facilities. If a woman’s family and her birth attendant can recognize the signs of labor and delivery complications and if complications occur, the family should move the woman to a facility where trained professionals can provide adequate care. In far too many cases, women are not brought to facilities in time. The

warning signs of complications may not be recognized, or families may fear being treated badly, being charged high fees, or receiving substandard care at such health facilities. Indeed, even deliveries in health facilities may be needlessly risky because the quality of obstetric care is insufficient (Population Reference Bureau, 1998). The “Three Delays Model” groups delay-related barriers to obtaining emergency obstetric services into three major categories: 1) delay in deciding to seek care, 2) delay in reaching a medical facility, and 3) delay in receiving treatment (Maine et al., 1997). This model has been expanded into the “Four Delays Model” by dividing the first delay into two: 1) delay in recognizing danger signs, and 2) delay in seeking care (Ransom and Yinger, 2002). (See Maternal Health Handout III.5.7: The Four Delays Model for more information.)

H. What Can Be Done to Improve Safe Motherhood?

Building political commitment. Providing information on the extent of maternal health issues creates an environment of enhanced problem recognition and focuses attention on the need for action. Advocates can use information to raise awareness, increase knowledge and motivation, and build capacity. Data such as national statistics (e.g., percent skilled attendance at birth) as well as single events (e.g., a law prohibiting early marriage) can demonstrate to what extent a government is adequately addressing maternal health. Reports can also provide data on the activities of a government to address safe motherhood as a component of reproductive health. Maternal health advocates can use data to hold governments accountable for government-signed documents, such as the 1994 ICPD *Programme of Action* and the 1995 Fourth World Conference on Women in Beijing *Platform of Action*. (See Section F for a list of international meetings, and Maternal Health Handout II.1.3: Key Language from International Agreements Related to Maternal Health for specific agreement language.)

The protection and promotion of the human rights of women can help ensure that all women have the right to

- Make decisions about their own health, free from coercion or violence and based on full information; and
- Have access to quality services and information before, during, and after pregnancy and childbirth.

-Safe Motherhood Fact Sheet: A Matter of Human Rights and Social Justice, 1998

Developing and implementing national policies. A positive policy environment is crucial to the promotion of maternal health and the reduction of maternal deaths. If a country does not have a national policy on safe motherhood, one could be developed. For the many countries that have such policies in place, advocacy could focus on developing implementation plans and committing necessary resources to programs and services.

The policy environment can be improved to protect maternal health in many ways, such as the following:

- Ensure inclusion of maternal health programs in national policies.
- Advocate for allocation of resources for maternal health.

- Advocate for financing policies to promote access (e.g., health insurance for pregnancy, birth and family planning, or transport for emergencies)
- Reform policies that contribute to maternal mortality (e.g., laws that require husband's authorization).
- Implement policies to protect women's health interests (e.g., laws regarding rape).
- Amend policies to promote the role of midwives, nurses, and community physicians in providing life-saving interventions and prescribing medicine.
- Eliminate policies that limit contraceptive delivery to young adults or unmarried women.
- Promote midwifery training for more personnel.
- Develop and use protocols for the management of obstetrical complications.
- Set standards for service delivery.
- Develop and use tools for improving quality of care.
- Establish or strengthen mechanisms to evaluate the quality of services.
- Address regulatory, social, economic, and cultural factors that limit women's control over their sexuality and reproduction, including their access to contraception.

Changing social norms. The low status of women and gender disparities leave women powerless over sexual relations and contraceptive use in many settings. Advocates can promote women's rights and empower women to make informed choices. They can also work to empower women economically through microcredit or increasing employment opportunities. Literacy and increased educational opportunities for girls and women are imperative to improving women's status.

Involving men. With the permission of the pregnant woman, the man's participation can be welcomed at each stage of pregnancy, labor, delivery, and postpartum. Men who understand the risks of pregnancy are more likely to obtain emergency obstetric care to save the mother's life. "Research suggests that... improving awareness of obstetric complications among members of a pregnant woman's immediate and wider social network is an important step in improving her chances of survival when ... complications occur" (Roth and Mbitvo, 2001). A study of 211 women in Uganda who had given birth in the previous year found that educating fathers about safe delivery discouraged home deliveries (Nuwaha and Amooti-Kaguna, 1999). Focus-group discussions in Moldova revealed that both women and men said that they were given little information about birth, yet both desired more information about these topics and about newborn care (Mercer, 2000). Initial results from a Population Council research project in India found that training physicians on involving men in maternity care has led to more husbands accompanying their wives to antenatal clinics (Varkey, 2001). Including male partners during antenatal care, with the knowledge and consent of pregnant woman, has been shown to increase supportive behavior for mothers and infants. In India, the provision of antenatal education to prospective fathers resulted in a significantly higher frequency of antenatal visits (Bhalero et al., 1984).

Providing access to quality information and services. Access means that information and services are available and within the reach of women who need them. Clients need to receive information and counseling on their health and health needs in order to make timely informed decisions about their reproductive health. Solid information and positive interaction between client and provider can contribute to client confidence and compliance. Evidence supports the idea that women who are given the power and information to make decisions can save their own lives in cases of obstetric emergencies. For example, in India, the Rural Women's Social Education Centre undertook an intensive health education campaign covering more than 20,000 rural, poor agricultural laborers. The campaign identified pregnant women, who were then given health advice and encouraged to deliver in the hospital. A series of workshops and pamphlets explained the process of childbirth, appropriate self-care, and danger signals in pregnancy. As a result, three-quarters (76 percent) of those with complications, such as prolonged or obstructed labor, heavy loss of blood during labor or postpartum, and hypertensive disorders of pregnancy, delivered in the hospital (Sundari, 1993). In rural Bangladesh, pictorial cards were used to raise community awareness about the complications of pregnancy and childbirth and encourage women to use health facilities in emergencies. Pregnant women who received a pictorial card were more likely to use institutional facilities for the management of their obstetric complications compared with those who did not receive the card (Khanum et al., 2000).

Good quality services require that health care providers have adequate clinical skills and are sensitive to women's needs, facilities have necessary equipment and supplies, and referral systems function well enough to ensure that women with complications get essential treatment. Advocates can work to increase women's access to information or work to remove operational constraints in providing effective services.

Services for safe motherhood should include:

- Family planning counseling, information, and services;
- Health care before, during, and after childbirth;
- Skilled assistance during delivery;
- Care for obstetric complications, including emergencies;
- Health education for women, adolescents, and communities; and
- Services to prevent and manage the complications of unsafe abortion.

Improving financial coverage for the poor. Cost is often a barrier to accessing skilled maternal health care. Advocacy for financial coverage for the poor, such as pooled funds for transportation, mutual help organizations, insurance coverage, and vouchers, can improve access and ultimately health outcomes for mothers and newborns. For example, the Indonesian Ministry of Health implemented a voucher program for low-income women for maternal health care services provided by government trained midwives. An evaluation of the program indicates that more women are using midwives' services (Ransom and Yinger, 2002). The Government of Bolivia established a national insurance program for pregnant women. As a result, antenatal visits increased by 80 percent, and deliveries at public facilities increased by almost 50 percent (Ransom and Yinger, 2002).

I. *Can maternal health outcomes improve?* Yes! Good quality health care during the critical periods of labor and delivery is the single most important intervention for preventing maternal and newborn mortality and serious morbidity (WHO, 1997b). Most maternal deaths could be prevented if women had access to basic medical care during pregnancy, childbirth, and the postpartum period. This implies strengthening health systems and linking communities, health centers, and hospitals to provide care where women need it (WHO, 1994).

For example:

- In Honduras, maternal deaths decreased from 182 per 100,000 live births in 1990 to 108 in 1997. The decrease was attributed to making emergency obstetric care available in more health centers and district hospitals. Birth centers were established in remote areas and the number of health personnel was increased. Emergency transportation, roads, and communication were also improved (UNFPA, 2000).
- Egypt's maternal mortality declined from 174 to 84 per 100,000 live births between 1992 and 2000 through building and equipping more hospitals in rural areas, creating access to skilled attendance, and teaching TBAs and communities to seek prompt care for emergency obstetric care. By 2000, even in rural areas, 99 percent of women live within 30 kilometers of a hospital. The proportion of births attended by a doctor or nurse increased. Even among the 36 percent of women who had home deliveries with TBAs, 93 percent sought medical care when they experienced problems (Ministry of Health, 2001).
- In Thailand, the introduction of 18,314 certified trained midwives was correlated with the reduction of maternal mortality levels from more than 400 per 100,000 live births in the 1960s to 98 in 1980 (Wilbulpolprasert, 2000).
- In Egypt, the reported number of neonatal tetanus cases dropped from 6,000 per year to fewer than 400 because of increases in routine tetanus toxoid coverage of pregnant women (UNICEF et al., 2000).
- A study in Guatemala trained hospital staff to be supportive and understanding of TBAs and mothers referred by TBAs. Referrals increased by more than 200 percent (O'Rourke, 1995).

J. *Continuous advocacy is critical.* More follow-up and continuous advocacy for educational and service delivery programs are critical even *after* the enactment of positive maternal health policies. Implementation of policies has often proved more difficult than enacting the policy in the first place. For example, in Lao People's Democratic Republic, a national safe motherhood policy was approved in 1998 but has still not been implemented, and a strategic plan has not been formulated to meet the policy's goals (Regional Technical Assistance 5825, 2002).

Despite these challenges, advocates for maternal health can count a number of victories at the international, national, and local levels. Advocacy networks have played and will continue to play a key role in replicating and building on those successes.

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- There are an estimated 170 million pregnancies every year around the world,¹ and every time a woman is pregnant she risks a sudden and unpredictable complication that could result in her death or injury and the death or injury of her infant.
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- Abortion-related complications result in nearly 80,000 maternal deaths and hundreds of thousands of disabilities (WHO, 1997a).
- Abortion-related causes of maternal death account for 13 percent of maternal deaths in developing countries (Maine, 2000).

³This figure is calculated based on estimated global number births for 2000 (133,284,000) as cited in the UN's World Population Prospects: The 2002 Revision Population Database and assumes 20 percent pregnancy wastage.

- Obstructed labor accounts for about 8 percent of maternal deaths in developing countries but is almost unknown as a cause of death in developed countries due to the use of cesarean sections (Maine, 2000).

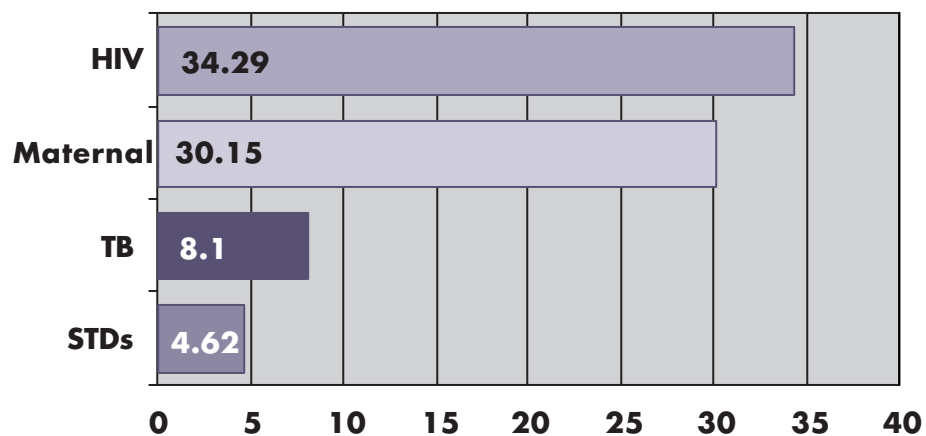
E. What Are the Consequences of Poor Maternal Health?

The consequences of poor maternal health are widespread, affecting women, families, communities, and society.

Unwanted pregnancies. Without adequate access to family planning information and services, women may have unplanned and unwanted pregnancies. Unwanted pregnancies can threaten a woman's health or well-being, and many unwanted pregnancies are terminated using unsafe procedures that can lead to death or disability.

Long-term maternal morbidities. Limited access to antenatal care and skilled attendance at birth can lead to long-term maternal morbidities. About 60 million women suffer from some maternal morbidity, and these morbidities are long-term and often debilitating for more than 15 million women (Ashford, 2002). Women of reproductive age in the developing world lose more disability-adjusted life years (DALYs)⁴—30 million—to maternal causes than to any other cause other than HIV/AIDS (see Figure 1)⁵ (WHO, 2001a). The number of DALYs due to HIV/AIDS have almost tripled in just ten years, from 12 million in 1990⁶ to over 34 million in 2001.

Figure 1. Number of DALYs Lost to Women Aged 15-44 Due to Maternal Causes, HIV, STDs, and TB



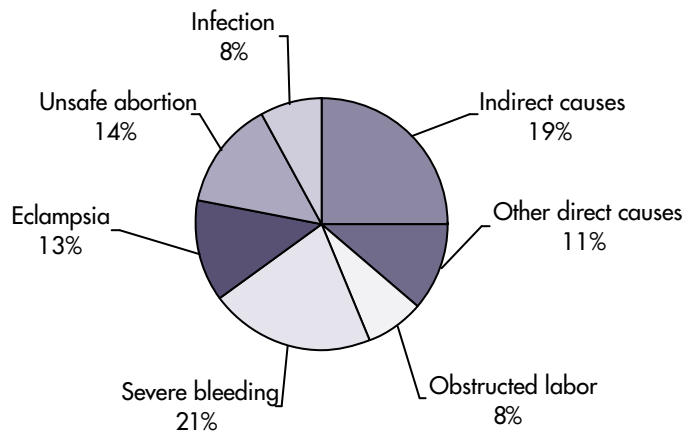
⁴DALYs is the measurement used by the World Bank and WHO to express how a healthy person is affected by disease. This measurement combines years of life lost because of premature death and disability.

⁵To estimate DALYs for women in the developing world, data for three WHO regions: AMRO A, EURO A and WPRO A were subtracted from global DALYs for women of reproductive age (15-44).

⁶DALYs for 1990 were presented in the World Development Report 1993.

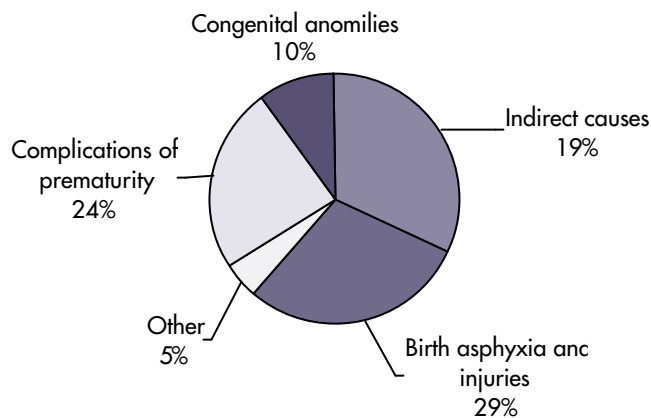
Maternal mortality. Lack of antenatal and postnatal care and assistance during delivery can lead to maternal death. Maternal deaths have both direct and indirect causes (see Figure 2) (UNFPA, 2001). About 80 percent of maternal deaths are due to direct causes, which include obstetric complications such as severe bleeding, infection, unsafe abortion, hypertensive disorders (eclampsia), and obstructed labor. Women also die of indirect causes, such as malaria, diabetes, hepatitis, heart disease, and anemia; these diseases or causes of ill health can be exacerbated during pregnancy.

Figure 2. Medical Causes of Maternal Death



Neonatal mortality. Some of the same factors that cause maternal mortality and morbidity, such as complications of pregnancy and childbirth and poor management of those complications, also cause or contribute to a significant proportion of stillbirths and newborn deaths. There are more than 7 million infant deaths per year (WHO, 2001). Approximately half of infant deaths occur during the neonatal period (the first month of life) (WHO, 2001). Of neonatal deaths, nearly 75 percent occur in the first week (WHO, 2001). Almost 30 percent of neonatal deaths are due to birth asphyxia and injuries, and another 24 percent due to complications of prematurity (see Figure 3) (JHU, 1999). Significant additional reductions in infant mortality can be achieved with interventions designed to improve the health of the mother and her access to care during labor, birth, and the critical hours immediately afterward (World Bank, 1999).

Figure 3. Medical Causes of Neonatal Death



Child mortality. A mother’s death has profound consequences for her family. In some developing countries, if the mother dies, the risk of death for her children younger than five is doubled or tripled. In Bangladesh, children up to age 10 whose mothers die have three to five times the mortality rate of children whose mothers are alive or whose fathers die (World Bank, 1999).

Increased poverty, weakened households, and communities. A woman suffering long-term disabilities from pregnancy or childbirth may not be able to participate in the workforce or be economically productive. Children of disabled or sick mothers may have inferior nutrition, hygiene, and health than children of healthy mothers. Also, some children drop out of school to work, further contributing to the cycle of poverty. Losing productive members of society affects governments because of the loss of investments made in education, health care, and job training. A study in Uganda estimated the productive years lost due to various maternal disabilities, assuming a total work life of 65 years per woman (Table 1). Postpartum hemorrhage (severe bleeding), hypertensive disorders (eclampsia), and obstructed labor each can lead to 35 productive years lost per woman (SARA Project, 2000).

Table 1: Productive Years Lost Per Woman Due to Maternal Morbidity, Uganda

Complication	Productive Years Lost Per Woman
Postpartum Hemorrhage (Severe bleeding)	
-Severe anemia	2.5
-Sheehan’s Syndrome	35.5
Sepsis (Infection)	
-PID/CPF	0.04
Hypertensive disorder (Eclampsia)	
-Neurosequalea	35.5
Obstructed labor	
-Stress incontinence	36.5
-Fistula	46
Abortion	
-Severe anemia	2.5
-PID/CPF	0.04
Maternal malaria/anemia	0.75

F. Why Should Countries Invest in Maternal Health?

Good maternal health is an economic investment. A healthy mother can be highly productive and contribute to the well-being of her family and community. Poverty increases at the family level when a woman is sick and cannot work. Consequently, less money is available for health care and education for children, which in turn has an impact on the greater society. Increasing access to maternal health services will help ensure that women remain vital participants in the economic well-being of their country. A model application in Uganda projected that implementing a set of interventions described in the “mother-baby package” would, in 10 years, save

250,000 women from disability and avert 12,000 maternal deaths, resulting in productivity gains of US\$90 million (Burkhalter, 2000).

Maternal health interventions are highly cost-effective. Safe motherhood interventions, which are designed to reduce maternal death and disability, are highly cost-effective. Basic maternal care costs in low-income settings have been estimated to be as little as US\$3 per person per year. This includes health care during pregnancy, delivery, and after birth; postpartum family planning; and newborn care (WHO, 1997c). However, a review of available costing information indicates that antenatal care costs typically range from US\$2-\$15 per visit (Borghi, 2001). On average, the cost of a normal delivery at a health center ranges between US\$3-\$15 in African, Asian, and Latin American countries. Costing studies in these countries indicate that a normal delivery in a hospital costs between US\$12-US\$81 (Borghi, 2001).

“Women are the mainstays of families, the key educators of children, healthcare providers, carers of young and old alike, farmers, traders, and often the main, if not the sole, breadwinners. A society deprived of the contribution made by women is one that will see its social and economic life decline, its culture impoverished, and its potential for development severely limited.”

-Reduction of Maternal Mortality: A Joint WHO/UNFPA/UNICEF/World Bank Statement, WHO, Geneva, 1999.

International consensus support maternal health. In the last 10 years, international forums, conferences, and corresponding agreements support the inclusion of the right to safe pregnancy and childbirth as an integral part of reproductive health. The Safe Motherhood Initiative (1987), Convention on the Rights of the Child (1990), Convention on the Elimination of all Forms of Discrimination Against Women (1992), the World Conference on Human Rights Programme of Action (1993), the International Conference on Population and Development (ICPD) Programme of Action (1994), the Fourth World Conference on Women Platform of Action (1995), the World Summit on Social Development (1995), and the Joint WHO/UNFPA/UNICEF/World Bank Statement on Reduction of Maternal Mortality (1999) all helped institutionalize the need to set priorities and address the needs of women and their families before and during the childbearing years. These international forums and agreements also identify roles for different sectors, help identify linkages, and create common goals with a unified language to address the problem. (For details on specific agreement language see Maternal Health Handout II.1.3.)

G. What Are Factors that Influence Maternal Health?

Inadequate health care. Maternal deaths are strongly associated with substandard health services and a lack of available medical equipment and supplies at the time of labor, delivery, and immediately after birth. For example, a community-based investigation to assess the preventability of maternal deaths in rural and urban areas of Zimbabwe, identified the lack of appropriately trained personnel as contributing significantly to maternal deaths (Fawcus et al., 1996). Suboptimal clinic and hospital management was identified in 67 percent of rural and 70 percent of urban deaths (Fawcus et al., 1996).

Inaccessible health care. There is a strong correlation between maternal death and disability and distance to health services. Most rural women (80 percent) live more than five kilometers from the nearest hospital. In Zimbabwe, unavailability of transport contributed to 28 percent of the rural maternal deaths in a study of 105 maternal deaths (Fawcus et al., 1996). Vehicle shortages and poor road conditions mean that the main mode of transportation, even for women in labor, includes walking, being carried in hammocks, or traveling via rickshaw or motorcycle. A study in Maputo, Mozambique, compared 133 consecutive eclamptic patients with 393 non-eclamptic referent women. Eclamptic cases occurred more often among women without access to transport who had to walk to reach antenatal clinics (Bugalho et al., 2001). However, successful transportation systems linked to essential obstetric care have decreased the numbers of deaths. For example, in Uganda a tricycle-radio program funded by UNFPA enabled TBAs and midwives to arrange transportation for pregnant women to the hospital 24 hours a day. Maternal deaths were more than halved in the first year of the project (Amooti-Kaguna, 2000).

Costs for services are prohibitive. Recent estimates from a study costing maternal health care services show that user fees (in US dollars) ranged from \$0.97 to \$2.79 in Uganda, \$0.15 to \$8.70 in Malawi, and \$0.62 to \$3.15 in Ghana per visit for antenatal care at a health center or hospital. For vaginal delivery at a health center or hospital, women were asked to pay from \$2.26 to \$22.75 in Uganda, \$0.35 to \$7.86 in Malawi, and \$12.52 to \$20.64 in Ghana. Fees for midwife services were lower for both antenatal care, at an average cost of \$1.05 in Uganda and \$2.08 in Ghana, and vaginal delivery, at an average of \$7.80 in Uganda and \$8.99 in Ghana (Levin et al., 2000). Even when formal fees are low or nonexistent, women often face expenses for transport, drugs, food, and lodging for themselves or their family members. The same costing study found that travel fees to obtain antenatal care services ranged from \$0.56 to \$1.26 in Uganda, \$0.12 to \$1.13 in Malawi, and \$0.08 to \$0.64 in Ghana. Travel fees to obtain vaginal delivery services were higher, ranging from \$0.52 to \$4.06 in Uganda, \$0.30 to \$2.37 in Malawi, and \$0.75 to \$1.35 in Ghana (Levin et al., 2000).

Poor quality of care. Poor quality of care is one of the most common reasons women provide for choosing not to use available maternal health services. Health facilities in developing countries face chronic shortages of equipment, drugs, and basic supplies, including blood for transfusion. Health facility staff are often poorly trained, may lack essential clinical skills, and may not observe hygienic practices. Also, health workers may be rude, unsympathetic, and uncaring; thus, women prefer to use the services of traditional birth attendants (TBAs) and healers. Other factors that result in non-use include the lack of privacy, run-down physical facilities, inconvenient operating hours, and restrictions on who can stay with a woman at the health facility (AbouZahr et al., 1996).

Lack of skilled care at childbirth. Skilled care at childbirth refers to “the process by which a pregnant woman is provided with adequate care during labor, birth, and the postpartum and immediate newborn periods. [To give skilled care], the attendant must have the necessary skills and must be supported by an enabling environment at the domiciliary, primary (health center), or first referral (hospital) levels, which includes adequate supplies, equipment, and infrastructure as well as

an efficient and effective system of communication and referral/transport” (“Saving Lives: Skilled Attendance at Childbirth,” 2000). Skilled care during childbirth is important because millions of women and newborns develop serious and difficult-to-predict complications during or immediately after delivery. A critical component of skilled care in childbirth is the skilled birth attendant. “The term ‘skilled attendant’ refers to people with midwifery skills (for example, doctors, midwives, nurses) who have been trained in the skills necessary to manage normal deliveries and diagnose, manage, or refer obstetric emergencies. They must be able to manage normal labor and delivery, recognize the onset of complications, perform essential interventions, start treatment, and supervise the referral of mother and baby for interventions that are beyond their competence or not possible in the particular setting” (WHO et al., 1999).

Low status of women. Socioeconomic and cultural norms contribute to women’s unequal access to resources, including health care, food, and preventive services. Social expectations and pressures define what is or is not acceptable for a woman to do, making it difficult for a woman to protect herself from unwanted pregnancy or seek timely care in labor in order to prevent death. Furthermore, in many settings, women often lack decision-making power in families, communities, and societies (WHO et al., 1999). Thus, social taboos and unequal power relations between men and women often prevent women from using contraceptives, for example. Opposition from husbands is one of the most common reasons women give for not using contraception.

Gender-based violence. Between 20 and 50 percent of women and girls report having been subject to sexual coercion, abuse, or rape (Heise, 1995). These women are at high risk for unwanted pregnancy and other sexual and reproductive health problems. Globally, as many as one in every four women is physically or sexually abused during pregnancy, usually by her partner (Heise, 1999). Violence before and during pregnancy seriously impacts pregnancy outcomes and health consequences for women and their children. Pregnant women who have experienced violence are more likely to delay seeking prenatal care and gain insufficient weight. They are also more likely to have unwanted or mistimed pregnancies and bleeding during pregnancy. Violence has been linked with increased risk of miscarriages and abortions, premature labor, fetal distress, and low birth weight (Heise, 1999). In India, verbal autopsies from a surveillance study of all maternal deaths in over 400 villages and 7 hospitals in three districts of Maharashtra revealed that 16 percent of deaths during pregnancy were due to domestic violence (Ganatra, 1996).

Delays in seeking services. Women may delay or not seek treatment because of lack of recognition of a problem or because of logistical, social, or cultural barriers. Most births in developing countries take place in locations other than health facilities. If a woman’s family and her birth attendant can recognize the signs of labor and delivery complications and if complications occur, the family should move the woman to a facility where trained professionals can provide adequate care. In far too many cases, women are not brought to facilities in time. The warning signs of complications may not be recognized, or families may fear being treated badly, being charged high fees, or receiving substandard care at such health facilities. Indeed, even deliveries in health facilities may be needlessly risky because the quality of obstetric care is insufficient (Population Reference Bureau, 1998). The

“Three Delays Model” groups delay-related barriers to obtaining emergency obstetric services into three major categories: 1) delay in deciding to seek care, 2) delay in reaching a medical facility, and 3) delay in receiving treatment (Maine et al., 1997). This model has been expanded into the “Four Delays Model” by dividing the first delay into two: 1) delay in recognizing danger signs, and 2) delay in seeking care (Ransom and Yinger, 2002). (See Maternal Health Handout III.5.7: The Four Delays Model for more information.)

H. What Can Be Done to Improve Safe Motherhood?

Building political commitment. Providing information on the extent of maternal health issues creates an environment of enhanced problem recognition and focuses attention on the need for action. Advocates can use information to raise awareness, increase knowledge and motivation, and build capacity. Data such as national statistics (e.g., percent skilled attendance at birth) as well as single events (e.g., a law prohibiting early marriage) can demonstrate to what extent a government is adequately addressing maternal health.

The protection and promotion of the human rights of women can help ensure that all women have the right to

- Make decisions about their own health, free from coercion or violence and based on full information; and
- Have access to quality services and information before, during, and after pregnancy and childbirth.

-Safe Motherhood Fact Sheet: A Matter of Human Rights and Social Justice, 1998

Reports can also provide data on the activities of a government to address safe motherhood as a component of reproductive health. Maternal health advocates can use data to hold governments accountable for government-signed documents, such as the 1994 ICPD Programme of Action and the 1995 Fourth World Conference on Women in Beijing Platform of Action. (See Section F for a list of international meetings, and Maternal Health Handout II.1.3: Key Language from International Agreements Related to Maternal Health for specific agreement language.)

Developing and implementing national policies. A positive policy environment is crucial to the promotion of maternal health and the reduction of maternal deaths. If a country does not have a national policy on safe motherhood, one could be developed. For the many countries that have such policies in place, advocacy could focus on developing implementation plans and committing necessary resources to programs and services.

The policy environment can be improved to protect maternal health in many ways, such as the following:

- Ensure inclusion of maternal health programs in national policies.
- Advocate for allocation of resources for maternal health.
- Advocate for financing policies to promote access (e.g., health insurance for pregnancy, birth and family planning, or transport for emergencies)
- Reform policies that contribute to maternal mortality (e.g., laws that require husband’s authorization).
- Implement policies to protect women’s health interests (e.g., laws

- regarding rape).
- Amend policies to promote the role of midwives, nurses, and community physicians in providing life-saving interventions and prescribing medicine.
 - Eliminate policies that limit contraceptive delivery to young adults or unmarried women.
 - Promote midwifery training for more personnel.
 - Develop and use protocols for the management of obstetrical complications.
 - Set standards for service delivery.
 - Develop and use tools for improving quality of care.
 - Establish or strengthen mechanisms to evaluate the quality of services.
 - Address regulatory, social, economic, and cultural factors that limit women's control over their sexuality and reproduction, including their access to contraception.

Changing social norms. The low status of women and gender disparities leave women powerless over sexual relations and contraceptive use in many settings. Advocates can promote women's rights and empower women to make informed choices. They can also work to empower women economically through microcredit or increasing employment opportunities. Literacy and increased educational opportunities for girls and women are imperative to improving women's status.

Involving men. With the permission of the pregnant woman, the man's participation can be welcomed at each stage of pregnancy, labor, delivery, and postpartum. Men who understand the risks of pregnancy are more likely to obtain emergency obstetric care to save the mother's life. "Research suggests that... improving awareness of obstetric complications among members of a pregnant woman's immediate and wider social network is an important step in improving her chances of survival when ... complications occur" (Roth and Mbizvo, 2001). A study of 211 women in Uganda who had given birth in the previous year found that educating fathers about safe delivery discouraged home deliveries (Nuwaha and Amooti-Kaguna, 1999). Focus-group discussions in Moldova revealed that both women and men said that they were given little information about birth, yet both desired more information about these topics and about newborn care (Mercer, 2000). Initial results from a Population Council research project in India found that training physicians on involving men in maternity care has led to more husbands accompanying their wives to antenatal clinics (Varkey, 2001). Including male partners during antenatal care, with the knowledge and consent of pregnant woman, has been shown to increase supportive behavior for mothers and infants. In India, the provision of antenatal education to prospective fathers resulted in a significantly higher frequency of antenatal visits (Bhalero et al., 1984).

Providing access to quality information and services. Access means that information and services are available and within the reach of women who need them. Clients need to receive information and counseling on their health and health needs in order to make timely informed decisions about their reproductive health. Solid information and positive interaction between client and provider can contribute to client confidence and compliance. Evidence supports the idea that women who are given the power and information to make decisions can save their own lives in cases of obstetric emergencies. For example, in India, the Rural

Women's Social Education Centre undertook an intensive health education campaign covering more than 20,000 rural, poor agricultural laborers. The campaign identified pregnant women, who were then given health advice and encouraged to deliver in the hospital. A series of workshops and pamphlets explained the process of childbirth, appropriate self-care, and danger signals in pregnancy. As a result, three-quarters (76 percent) of those with complications, such as prolonged or obstructed labor, heavy loss of blood during labor or postpartum, and hypertensive disorders of pregnancy, delivered in the hospital (Sundari, 1993). In rural Bangladesh, pictorial cards were used to raise community awareness about the complications of pregnancy and childbirth and encourage women to use health facilities in emergencies. Pregnant women who received a pictorial card were more likely to use institutional facilities for the management of their obstetric complications compared with those who did not receive the card (Khanum et al., 2000).

Good quality services require that health care providers have adequate clinical skills and are sensitive to women's needs, facilities have necessary equipment and supplies, and referral systems function well enough to ensure that women with complications get essential treatment. Advocates can work to increase women's access to information or work to remove operational constraints in providing effective services.

Services for safe motherhood should include:

- Family planning counseling, information, and services;
- Health care before, during, and after childbirth;
- Skilled assistance during delivery;
- Care for obstetric complications, including emergencies;
- Health education for women, adolescents, and communities; and
- Services to prevent and manage the complications of unsafe abortion.

Improving financial coverage for the poor. Cost is often a barrier to accessing skilled maternal health care. Advocacy for financial coverage for the poor, such as pooled funds for transportation, mutual help organizations, insurance coverage, and vouchers, can improve access and ultimately health outcomes for mothers and newborns. For example, the Indonesian Ministry of Health implemented a voucher program for low-income women for maternal health care services provided by government trained midwives. An evaluation of the program indicates that more women are using midwives' services (Ransom and Yinger, 2002). The Government of Bolivia established a national insurance program for pregnant women. As a result, antenatal visits increased by 80 percent, and deliveries at public facilities increased by almost 50 percent (Ransom and Yinger, 2002).

I. Can maternal health outcomes improve? Yes! Good quality health care during the critical periods of labor and delivery is the single most important intervention for preventing maternal and newborn mortality and serious morbidity (WHO, 1997b). Most maternal deaths could be prevented if women had access to basic medical care during pregnancy, childbirth, and the postpartum period. This implies strengthening health systems and linking communities, health centers, and hospitals to provide care where women need it (WHO, 1994).

For example:

- In Honduras, maternal deaths decreased from 182 per 100,000 live births in 1990 to 108 in 1997. The decrease was attributed to making emergency obstetric care available in more health centers and district hospitals. Birth centers were established in remote areas and the number of health personnel was increased. Emergency transportation, roads, and communication were also improved (UNFPA, 2000).
- Egypt's maternal mortality declined from 174 to 84 per 100,000 live births between 1992 and 2000 through building and equipping more hospitals in rural areas, creating access to skilled attendance, and teaching TBAs and communities to seek prompt care for emergency obstetric care. By 2000, even in rural areas, 99 percent of women live within 30 kilometers of a hospital. The proportion of births attended by a doctor or nurse increased. Even among the 36 percent of women who had home deliveries with TBAs, 93 percent sought medical care when they experienced problems (Ministry of Health, 2001).
- In Thailand, the introduction of 18,314 certified trained midwives was correlated with the reduction of maternal mortality levels from more than 400 per 100,000 live births in the 1960s to 98 in 1980 (Wilbulpolprasert, 2000).
- In Egypt, the reported number of neonatal tetanus cases dropped from 6,000 per year to fewer than 400 because of increases in routine tetanus toxoid coverage of pregnant women (UNICEF et al., 2000).
- A study in Guatemala trained hospital staff to be supportive and understanding of TBAs and mothers referred by TBAs. Referrals increased by more than 200 percent (O'Rourke, 1995).

J. Continuous advocacy is critical. More follow-up and continuous advocacy for educational and service delivery programs are critical even after the enactment of positive maternal health policies. Implementation of policies has often proved more difficult than enacting the policy in the first place. For example, in Lao People's Democratic Republic, a national safe motherhood policy was approved in 1998 but has still not been implemented, and a strategic plan has not been formulated to meet the policy's goals (Regional Technical Assistance 5825, 2002).

Despite these challenges, advocates for maternal health can count a number of victories at the international, national, and local levels. Advocacy networks have played and will continue to play a key role in replicating and building on those successes.