



Maternal Mortality



at a glance

Why address maternal mortality?

Over 529,000 women die annually from complications during pregnancy, childbirth, or the postpartum period. Nearly all of these deaths occur in developing countries, where fertility rates are higher and a woman's life time risk of dying during pregnancy and childbirth is over 400 times higher than in developed countries. Additionally, an estimated 20 million women endure lifelong disabilities such as pelvic pain, incontinence, obstetric fistula, anemia and infertility. The main direct causes of maternal death are severe bleeding, unsafe abortion, infection, eclampsia, and obstructed labor; the indirect causes include anemia, malaria, heart disease, and HIV. Pregnancy complications are the main cause of death for women aged 15-19. High maternal mortality rates in many countries result from poor reproductive health care, including not having access to skilled care during pregnancy and childbirth and access to safe abortion even where it is legal, especially for the poorest women. Risks of poor outcomes during pregnancy and childbirth are exacerbated by poverty, low status of women, lack of education, poor nutrition, heavy workloads and violence.

While many factors contribute to maternal death, one of the most effective means of preventing maternal health is to improve health systems and primary health care to ensure availability of skilled attendance at all levels and access to 24-hour emergency obstetric care. Family planning services could also reduce maternal deaths and morbidities by 30 percent. Prevention of unwanted pregnancies and access to safe abortion as allowed by law and post-abortion care services could reduce maternal deaths and injuries caused by unsafe abortions – over 68,000 women die from unsafe abortions annually.

Reducing maternal deaths and improving maternal health provide many benefits, including:

- **Improving labor supply and productive capacity** in women of reproductive age, resulting in **improved household income and economic well-being** of families and communities.
- **Reducing the number of orphans**, who may have lower educational attainment and drastically diminished prospects of leading productive lives.
- **Reducing newborn mortality, thereby improving child survival.**
- **Affirms the value of women** in society, leading to more equitable opportunities for all.
- **Providing opportunities** to integrate HIV prevention, treatment, and care activities in maternal and child health (MCH) and family planning (FP) programs to curb the HIV epidemic and mother to child transmission of HIV/AIDS.
- **The integration of prevention and treatment of malaria in MCH services**, resulting in better pregnancy outcomes.
- **Strengthening the capacity of the health system**, since many of the investments necessary for the provision of maternity care (improving human resources, upgrading infrastructure, strengthening logistics systems for supplies and equipment, etc.) benefit other health service components as well.
- **The unique opportunity towards achievements of MDGs 4, 5 and 6.**

Cost of maternal health care

Providing basic maternal and newborn health services – health care during pregnancy, delivery and after birth, post-partum family planning, and newborn care – costs about US\$3 per capita per year in a low income-setting; and about US\$6 in a middle-income setting. The total cost of saving a mother's or infant's life when complications arise is about US\$230 per woman served in a low-income setting if surgery and hospitalization are required.

Millennium Development Goals

The fifth Millennium Development Goal (MDG) to which the international community, including the World Bank, has committed itself calls for the reduction of maternal mortality ratios by three quarters between 1990 and 2015. The World Bank estimates that only one developing region (Middle East and North Africa) is on track to achieve this target.

The main interventions to improve maternal health:

- Ensure skilled attendance at delivery and improve health systems to increase availability and accessibility of emergency obstetric care
- Encourage delayed marriage and first birth for adolescents
- Address unwanted and poorly timed pregnancies
- Improve coverage and quality of prenatal and postpartum care
- Promote cross-sectoral linkages that
 - Promote enabling policies and political commitment
 - Enhance community participation
 - Address contextual factors (poverty, access to economic resources, women's education and status, lack of male involvement, violence against women, and the special needs of adolescents)

How to reduce maternal mortality

1. Ensure skilled attendance at delivery and strengthen health systems to ensure 24 hour emergency obstetric care.

Since much of maternal health care depends on skilled attendance, long-term strategic resource planning cannot be emphasized enough. Skilled care or attendance refers to the process by which a pregnant woman and her infant are provided with adequate care during pregnancy, labor, birth, and the postpartum and immediate newborn periods, whether the place of delivery is the home, health center, or hospital. In order for this process to take place, the attendant must have the necessary skills and must be supported by an enabling environment at various levels of the health system.

Three delays need to be considered systematically to address obstetric care: 1) delay in deciding to seek care; 2) delay in identifying and reaching medical facility; and 3) delay in receiving adequate and appropriate treatment at the medical facility. WHO and UNICEF recommend one comprehensive and four basic essential obstetric care (EOC) facilities for every 500,000 population.

Considering access barriers such as a lack of roads and transport, the time taken to reach a facility would be a better indicator of physical access than population per facility. Facilities beyond public hospitals and clinics – such as birthing homes, private providers, and maternity waiting centers – improve access to EOC for populations residing in remote and rural areas. Functioning health systems with an enabling environment that ensures adequate supplies, equipment, and infrastructure as well as an efficient and effective system of communication,

referral, and transport are essential to averting the risks of maternal mortality. Families and communities need to be able to recognize complications and be motivated to take action when a mother or child is in danger.

2. Encourage delayed marriage and first birth for adolescents.

Girls aged 15-19 are twice as likely to die from childbirth as women in their twenties; those below the age of 15 are five times as likely. Reflecting both the frequency of early pregnancy and the risks associated with it, pregnancy-related complications are the main cause of death for girls aged 15-19 worldwide. Ensure secondary school education for girls and discourage early marriage by setting a minimum legal age of marriage of at least 18 for girls. First births can be delayed by postponing the onset of sexual activity and by using effective methods of fertility regulation. Efforts should focus on changing individual and societal motivations for early childbearing. Education and employment opportunities play a critical role in providing alternatives to early motherhood.

3. Address unwanted and poorly timed pregnancies and the health risks associated with them.

Access to voluntary, safe, affordable, and appropriate family planning information and services is critical to reducing unwanted pregnancies and to reducing the risks of maternal mortality. Include an appropriate array of high quality, consumer-oriented family planning information, counseling, and services in benefits/service packages offered by public and private providers, and extend these services to hard-to-reach groups (youths, poor rural and urban people) through outreach and social marketing programs. For women who resort to abortion to end an unwanted pregnancy, it is important that abortion services are safe when allowed by law and also that post-abortion services are provided, including guidance on contraceptive methods to avoid future unwanted pregnancies. Compared with women who give birth at 9- to 14-month intervals, women who have their babies at 27- to 32-month birth intervals are 2.5 times more likely to survive childbirth. Ensuring birth intervals of at least 24 months is best for maternal survival and health.

4. Improve coverage and quality of prenatal and postpartum care.

The World Health Organization has developed clear practice guides on maternal and newborn care that can reduce the health risks of and provide quality services during pregnancy, delivery and the postpartum/postnatal period. Prenatal care which includes prevention and/or timely treatment for anemia, malaria, HIV, high blood pressure and other complications is very cost-effective.

What can be done to address maternal mortality? Cost-effective and feasible interventions with their intended beneficiaries and indicators.

Objectives	Core Interventions	Beneficiaries/ Target Groups	Indicators
Ensure skilled attendance at delivery and strengthen health systems to ensure 24 hour emergency obstetric care*			
Reduce delays in recognizing and managing complications of pregnancy and delivery	<ul style="list-style-type: none"> ✓ Ensure skilled attendance at home and in facilities. ✓ Ensure prompt detection, management, and referral of complications. ✓ Stress life-saving skills. 	Pregnant women and their infants	<ul style="list-style-type: none"> ✓ Maternal mortality ratio ✓ % of deliveries with skilled attendance ✓ Case fatality ratio for complications
Improve the capacity of the health system to provide quality maternal-newborn care including emergency care	<ul style="list-style-type: none"> ✓ Train staff in midwifery skills at all levels of the health system. ✓ Improve quality of antenatal, delivery, postpartum & newborn care through competency-based training and supervision. ✓ Promote skilled attendance at home and in facilities. ✓ Increase access to quality emergency obstetrics and newborn care. ✓ Improve referral system. Increase number of birthing homes and private providers. ✓ Provide public funds to finance transport and care for the poor. 	Pregnant women and their infants	<ul style="list-style-type: none"> ✓ % of pregnant women receiving antenatal care at least once ✓ % of pregnant women who are anemic ✓ Number and distribution of basic and comprehensive essential obstetric care facilities/500,000 pop.
Reduce health risks of early, unwanted, and poorly-timed pregnancies			
Reduce early pregnancies	<ul style="list-style-type: none"> ✓ Encourage delayed marriage; set a minimum legal age of marriage of at least 18 for girls. ✓ Ensure community participation. 	Adolescent girls	<ul style="list-style-type: none"> ✓ Age at marriage ✓ Age at first birth ✓ Age at onset of sexual activity
Reduce unplanned and poorly-timed pregnancies	<ul style="list-style-type: none"> ✓ Expand family planning services through community-based workers, social marketing and health facilities. ✓ Promote birth intervals of at least 24 months. 	Men and women of reproductive age, with special attention to adolescents, poor rural and urban people	<ul style="list-style-type: none"> ✓ Total fertility rate ✓ Contraceptive prevalence rate ✓ Unmet need for spacing and limiting births (DHS data) ✓ Age at first birth
Reduce the risk of unsafe abortion	<ul style="list-style-type: none"> ✓ Provide post-abortion care and family planning information and services everywhere. ✓ Ensure safety of abortion where not against law. 	Pregnant women, especially adolescents	<ul style="list-style-type: none"> ✓ % of gynecological admissions that are for abortion-related complications ✓ Case fatality rate for abortion complications

* For more information, please see RH Indicators Summary Sheet at <http://www.worldbank.org/population>.

Objectives	Core Interventions	Beneficiaries/ Target Groups	Indicators
Improve coverage and quality of prenatal and postpartum care			
Detect and treat complications early in pregnancy	<ul style="list-style-type: none"> ✓ Ensure adequate prenatal care to prevent and/or treat anemia, malaria, HIV, high blood pressure and other complications. ✓ Ensure early antenatal contact for care, counseling, and birth planning. ✓ Ensure community participation. 	Pregnant women and their infants	<ul style="list-style-type: none"> ✓ Maternal mortality ratio ✓ % of pregnant women receiving antenatal care at least once ✓ % of pregnant women who are anemic
	<ul style="list-style-type: none"> ✓ Improve quality of antenatal, delivery, postpartum & newborn care through competency-based training and supervision. 	Pregnant women and their infants	<ul style="list-style-type: none"> ✓ % of pregnant women receiving antenatal care at least once ✓ % of pregnant women who are anemic
Build strong political commitment and enabling policies to ensure equal rights for women, and promote cross sectoral linkages			
Reduce incidence of FGM	<ul style="list-style-type: none"> ✓ Work with community groups to find alternative rituals for initiation and/or alternative employment for individuals who perform FGM. ✓ Target national and community leaders where performed. 	Adolescent girls	<ul style="list-style-type: none"> ✓ % of women reporting they have undergone FGM (incidence rather than prevalence) ✓ % of women experiencing FGM-related complications of pregnancy and delivery
Reduce violence against women	<ul style="list-style-type: none"> ✓ Improve education of men and women about laws and educate about effects of violence on women and society. ✓ Support involvement of women's groups. 	All women	<ul style="list-style-type: none"> ✓ Frequency of violence ✓ Violence during pregnancy ✓ Incidence of rape ✓ Violent death rate among women
Create an enabling environment for improvements in maternal health outcomes	<ul style="list-style-type: none"> ✓ Improve education and nutrition for girls. ✓ Provide credit and better employment opportunities for women. ✓ Improve health communications capacity. ✓ Support involvement of women's groups and men in reproductive health and rights. ✓ Implement poverty reduction strategy. 	Women, particularly adolescents	<ul style="list-style-type: none"> ✓ Ratio of girls to boys in primary, secondary, and tertiary education ✓ Ratio of literate women to men, 15-24 years old ✓ Literacy and educational attainment ✓ Spousal age and education differences ✓ Employment and occupation ✓ Share of women in wage employment in the non-agricultural sector ✓ Control of own earnings ✓ Women's participation in household decisions ✓ Proportion of seats held by women in national parliament ✓ Stunting among girls

5. Build strong political commitment and enabling policies to ensure equal rights for women, and promote cross sectoral linkages.

These include reducing poverty; improving women's education and nutritional status; improving water and sanitation, roads and infrastructure, and transportation; empowering women; and addressing traditional harmful practices such as female genital mutilation. The design of interventions needs to take account of forces outside the formal health system that are associated with maternal mortality risks. Domestic violence also contributes to poor maternal health outcomes. Providers need to be trained to recognize the signs of violence, to use appropriate approaches for treatment and counseling, and to involve communities. Promoting **community involvement and participation** increases awareness of pregnancy complications and support for seeking care.

Do's and Don'ts

DO pay attention to demand and access.

Investments in health education and communication can increase demand for Maternal and Newborn health (MNH) care. Improvements in women's status through education and economic opportunity have a strong influence on demand for MNH services, including delivery of care.

Do pay attention to increasing access to disadvantaged and hard to reach groups, including poor women and underserved areas.

An effective way to serve the needs of high risk groups and the poor is to involve community groups and NGOs and pro-poor policy.

DO pay attention to client perspectives and quality.

Programs that pay attention to consumers work better than those that impose top-down. Incentives that promote positive provider attitudes and behavior are more effective than targets and punitive management practices.

DO plan for the long term to reduce maternal mortality.

Long-term efforts are required to improve health systems and to professionalize delivery care.

DO aim to reduce violence against women. This is one example of putting women's rights in focus, and an effective way of mobilizing society's resources to improve MNH outcomes.

DO invest in women's reproductive health early in the life cycle.

By treating protein-energy and iron/folate and other micronutrient deficiency in adolescents, young women will better tolerate the increased demands of pregnancy, birth and lactation. The chances for a normal birth, resulting in normal birth weight and optimal growth and development of the baby are strengthened.

DO encourage male involvement for better promotion of responsible sexuality.

Men and women need equal access to information, education and services.

DON'T assume that improved performance has to cost a lot.

Many countries have achieved better MNH outcomes by using their existing resources more effectively by building strong political and grassroots support for improved MNH outcomes.

DON'T neglect behavior change.

This is required for individuals, families, communities and providers if MNH outcomes are to improve. Effective health promotion and communications have contributed to better MNH outcomes by reducing risky practices (unprotected sex), promoting positive ones (better hygiene and nutrition), and making providers more attentive to the needs of their clients.

Resources

Lissner, C. and E. Weissman. 1998. "How much does safe motherhood cost?" *World Health* 51(1):10–11.

Lule et al. 2005. "Achieving the Millennium Development Goal of Improving Maternal Health: Determinants, Interventions, and Challenges." Health, Nutrition and Population Discussion Paper Series, Human Development Network, World Bank, Washington, DC.

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WHO, UNICEF and UNFPA. 2003. *Maternal Mortality in 2000: Estimates Developed by WHO, UNICEF and UNFPA*. Geneva: WHO.

WHO. 1997. *Mother-Baby Package Costing Spreadsheet*. Geneva: WHO.

WHO. 2004. *Global and Regional Estimates of the Incidence of Unsafe Abortion and Associated Mortality in 2000*. Geneva: WHO.

Making Pregnancy Safer, WHO:

Pregnancy, Childbirth, Postpartum and Newborn care: A guide for essential practices (2003)

Managing Complications in Pregnancy and Childbirth: A guide for Midwives and Doctors (2000)

Managing Newborn Problems: A guide for doctors, nurses and midwives (2003)

Beyond the Numbers: Reviewing maternal deaths and complications to make pregnancy safer (2004)

Making Pregnancy Safer - Essential health technology package for costing maternal and newborn health intervention

...plus other Integrated Management of Pregnancy and Childbirth (IMPAC) technical, managerial and program tools and guidelines

Useful Websites

<http://www.worldbank.org/population>

<http://www.safemotherhood.org/>

http://www.who.int/making_pregnancy_safer/en/

<http://www.who.int/reproductive-health/MNBH/index.htm>

<http://www.unfpa.org/icpd/>

http://www.rho.org/html/safe_motherhood.htm

http://www.safemotherhood.org/facts_and_figures/good_maternal_health.htm

<http://www.who.int/mediacentre/news/releases/2003/pr93/en/index.html>

For more information

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Expanded versions of the "at a glance" series, with links to resources and more information, are available on the World Bank Health, Nutrition and Population web site: www.worldbank.org/hnp