



## Progress towards the Millennium Development Goals, 1990-2005

### Goal 5: Improve maternal health

Complications during pregnancy and childbirth are a leading cause of death and disability among women of reproductive age in developing countries. The fifth Millennium Development Goal calls for improving maternal health. Progress is assessed against the target of reducing by three-quarters, between 1990 and 2015, the maternal mortality ratio.

[How the indicators are calculated](#)

#### Target 6 - Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio

An estimated 529,000 women died from the complications of pregnancy and childbirth in 2000.<sup>1</sup> For every woman who dies, approximately 20 more are seriously injured or disabled. This means that, every year, close to 9 million women suffer some type of injury from pregnancy or childbirth that can have a profound effect on their lives and that of their families.

These deaths were almost equally divided between Africa and Asia, which together accounted for 95 per cent of the total. Only 4 per cent (22,000) of all maternal deaths occurred in Latin America and the Caribbean, and less than one per cent (2,500) in the developed regions (see Table 1).

The maternal mortality ratio is a measure of the risk of death a woman faces every time she becomes pregnant. Thus, in countries where fertility is high, women face this risk many times, and the cumulative risk of maternal death over a lifetime may be as high as one in 16, compared to one in 3,800 in the countries of the developed world. This lifetime risk would be considerably reduced if women had access to safe and effective contraceptive services. But once a woman is pregnant, skilled medical care is essential to ensure her safety and that of her infant. The maternal mortality ratio was estimated to be 450 deaths per 100,000 live births in all developing regions in 2000. It was highest in sub-Saharan Africa (920), followed by Southern Asia (540).

#### Maternal mortality indicators

Levels of maternal mortality are measured by the maternal mortality ratio, or the number of maternal deaths per 100,000 live births. Progress towards the reduction of maternal mortality is assessed by tracking the availability of professional care at delivery, on the basis of process indicators such as the percentage of deliveries assisted by a skilled attendant.

## Tracking progress in maternal mortality

Measuring maternal mortality accurately is difficult, except where comprehensive registration of deaths and causes of death exist. Existing estimates of maternal mortality ratios are subject to wide margins of uncertainty and cannot be used to monitor trends in the short term.

As an alternative, several indicators known to correlate very closely with actual maternal mortality have been proposed to track short-term progress. Called “process indicators”, these are used to monitor interventions needed to reduce maternal mortality. They focus on professional care during pregnancy and childbirth, particularly for the management of complications.

The analysis based on process indicators suggests that significant progress has been made in the use of professional health care during childbirth in all regions except sub-Saharan Africa. Given that appropriate care is known to be key to averting maternal deaths, it is reasonable to assume that maternal mortality is likely to be declining in all regions except sub-Saharan Africa. Based on trends during the 1990s, sub-Saharan Africa, the region with the highest levels of maternal mortality, is making almost no progress towards the MDG target.

**Chart 1. Countries with 1,000 or more maternal deaths per 100,000 live births**

Estimated maternal mortality ratio, 2000	
Sierra Leone	2,000
Afghanistan	1,900
Malawi	1,800
Angola	1,700
Niger	1,600
United Republic of Tanzania	1,500
Rwanda	1,400
Mali	1,200
Central African Republic	1,100
Chad	1,100
Guinea-Bissau	1,100
Somalia	1,100
Zimbabwe	1,100
Burkina Faso	1,000
Burundi	1,000
Kenya	1,000
Mauritania	1,000
Mozambique	1,000

Source: World Health Organization/United Nations Children's Fund, *Maternal mortality in 2000: Estimates developed by WHO, UNICEF, UNFPA*, available from [http://www.who.int/reproductive-health/publications/maternal\\_mortality\\_2000/mme.pdf](http://www.who.int/reproductive-health/publications/maternal_mortality_2000/mme.pdf).

**Table 1. Maternal mortality ratio and lifetime risk of maternal death, 2000**

Region	Maternal deaths per 100,000 live births	Lifetime risk of maternal death, <sup>1/</sup> 1 in:
World	400	74
Developed regions	14	3,800
Commonwealth of Independent States	68	820
Developing regions	450	60
Northern Africa	130	210
Sub-Saharan Africa	920	16
Latin America and the Caribbean	190	160
Eastern Asia	55	840
Southern Asia	540	44
South-Eastern Asia	210	140
Western Asia	190	110
Oceania	240	83

Source: World Health Organization/United Nations Children's Fund, *Maternal mortality in 2000. Estimates developed by WHO, UNICEF, UNFPA*, available from [http://www.who.int/reproductive-health/publications/maternal\\_mortality\\_2000/mme.pdf](http://www.who.int/reproductive-health/publications/maternal_mortality_2000/mme.pdf).

<sup>1/</sup> The lifetime risk of maternal death is the chance that a woman will die in pregnancy or childbirth at some point in her life, and is a function of both the total fertility rate (that is, the number of times a woman gets pregnant) and the maternal mortality rate (or the chance that she will die each time she gets pregnant).

*Use of skilled attendants has increased in most regions*

The most widely available process indicator is the proportion of women who deliver with the assistance of a skilled attendant, defined as a medically trained health care provider – doctor, nurse or midwife. Use of a skilled attendant at delivery increased significantly between 1990 and 2003, from 41 to 57 per cent, in the developing world as a whole (see Table 2). The greatest improvements over that period occurred in South-Eastern Asia (which started from a very low base of 34 in 1990 moving to 64 per cent in 2003) and Northern Africa (which rose from 41 to 76 per cent). The least change was observed in sub-Saharan Africa (from 40 per cent in 1990 to 41 per cent in 2003) and in Western Asia (from 61 per cent in 1990 to 62 per cent in 2003). Moderate levels of improvement were noted in other regions.

Within these regional groupings there are significant differences across countries and in different settings within the same country. In Ethiopia, the rich are 28 times as likely as the poor to be attended in a delivery by a medically trained health care provider, while in India, the rich to poor ratio is 7 to 1.<sup>2</sup> In Chad and Niger the difference is 14-fold or more, while in Sierra Leone and Angola the difference is closer to three- to fourfold.

The ability of skilled attendants to provide appropriate care in the event of an emergency is dependent upon the environment in which they work: whether they have the right drugs and whether there is a hospital or health facility nearby where serious complications can be handled. In an attempt to identify more precisely those categories of health care providers able to provide such care, data specific to the medical attendant present at delivery were examined.

The data found that almost all of the increases in births with a skilled attendant were driven by increases in the presence of medical doctors at birth rather than a nurse, midwife or auxiliary health worker. In most regions, with the exception of sub-Saharan Africa, the proportion of deliveries assisted by a doctor has increased in the 1990-2003 period.

The proportion of deliveries with a skilled attendant reflects coverage of care for women at the time of delivery. The focus on the period around childbirth is appropriate because this is when obstetric complications are most likely to arise and when most maternal deaths occur. However, this indicator does not reflect care during pregnancy or the postpartum period. It is during these periods that a significant proportion of maternal deaths occur, particularly in settings with high levels of unsafe abortion or where many maternal deaths are due to indirect causes, such as malaria. Indicators on care during pregnancy and after birth as well

**Chart 2. Developing countries, areas and territories with fewer than 50 maternal deaths per 100,000 live births**

Maternal mortality ratio, 2000	
Martinique	4
Guadeloupe	5
Kuwait	5
Qatar	7
New Caledonia	10
Guam	12
Israel	17
French Polynesia	20
Korea, Republic of	20
Netherlands Antilles	20
Saudi Arabia	23
Mauritius	24
Puerto Rico	25
Uruguay	27
Bahrain	28
Singapore	30
Chile	31
Georgia	32
Cuba	33
Brunei Darussalam	37
Jordan	41
Malaysia	41
Réunion	41
Costa Rica	43
Thailand	44
Cyprus	47

Source: World Health Organization/United Nations Children's Fund, *Maternal mortality in 2000: Estimates developed by WHO, UNICEF, UNFPA*, available from [http://www.who.int/reproductive-health/publications/maternal\\_mortality\\_2000/](http://www.who.int/reproductive-health/publications/maternal_mortality_2000/)

as on the use of family planning services to prevent unwanted pregnancy and unsafe abortion can, therefore, provide important supplementary information.

**Table 2. Coverage of care for women at delivery, 1990-2003**

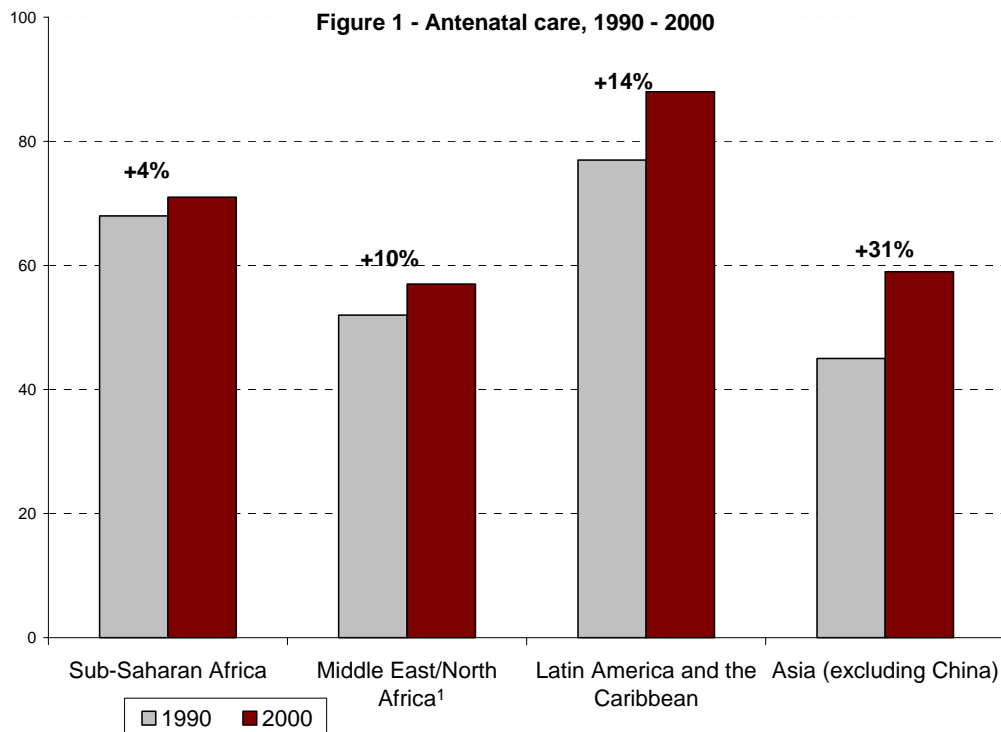
Deliveries with a skilled attendant (%)		
	1990	2003
Developing regions [region	41	57
Northern Africa	41	76
Sub-Saharan Africa	40	41
Latin America/Caribbean	74	86
Eastern Asia	51	82
Southern Asia	28	37
South-Eastern Asia	34	64
Western Asia	61	62

*Source:* United Nations Statistics Division, "World and regional trends", Millennium Indicators Database, available from <http://millenniumindicators.un.org> (accessed June 2005); based on data provided by United Nations Children's Fund and World Health Organization.

*Care during pregnancy is increasing, but is not always up to standard*

Care during pregnancy, known as "antenatal care", is essential for diagnosing and treating complications that could endanger the lives of mother and child. Most life-threatening obstetric complications cannot be prevented through antenatal care. However, there is ample evidence that care during pregnancy is an important opportunity to deliver interventions that will improve maternal health and survival during the period immediately preceding and after birth. Moreover, if the antenatal period is used to inform women and families about danger signs and symptoms and about the risks of labour and delivery, it may provide the route for ensuring that pregnant women deliver with the assistance of a skilled health care provider. Antenatal care is a potentially important way to connect a woman with the health system, which, if functioning, will be critical for saving her life in the event of a complication.<sup>3</sup>

Trends in the use of antenatal care in developing countries during the 1990s show significant progress. That said, antenatal care services currently provided in many parts of the world fail to meet the standards recommended by WHO.<sup>4</sup> The greatest progress was made in Asia, largely as a result of rapid changes in heavily populated countries, such as Indonesia. Significant advancements were also made in Latin America and the Caribbean, although the region already had relatively high levels of antenatal care. In sub-Saharan Africa, by contrast, use of antenatal care has hardly changed over the decade, although levels are relatively high compared to Asia.



1/ This regional group includes: Bahrain, United Arab Emirates, Occupied Palestinian Territory, Oman, Kuwait, Qatar, Saudi Arabia, Lebanon, Libya, Tunisia, Iraq, Iran, Sudan, Algeria, Egypt, Syria, Morocco, Yemen. (No data for: Cyprus, Djibouti and Jordan).

Despite this progress, disparities in access to antenatal care remain significant. Urban women are twice as likely as rural women to report four or more antenatal visits. Overall, women with secondary education are twice as likely to have antenatal care as women with no education.

Wealth distribution is also a major determinant of antenatal care. In all regions, the poorest fifth of the population are far less likely to have antenatal care than the richest fifth. Wealth disparities are generally widest in Asia, in some countries of Northern Africa, and smaller in Southern and Eastern Africa, and in Latin America.

The antenatal period also offers opportunities for delivering health information and services that can significantly enhance the well-being of women and their infants, but this potential has yet to be realized. Antenatal visits offer entry points for a range of other programmes – including on nutrition and the prevention of malaria, HIV infection, tetanus and tuberculosis – as well as obstetric care.

Whereas women themselves appear to have embraced the concept of care during pregnancy (when such services are available), the care they are offered often falls short. Greater efforts are needed to improve the content and quality of services offered. In addition, increased attention is needed to ensure that particular groups of women, specifically those living in rural areas, the poor and the less educated, have access to antenatal services.

## **An agenda for change**

Most maternal deaths are preventable. For instance, deaths caused by infections or hemorrhage during delivery can be prevented with drugs or a blood transfusion. Women in need of emergency obstetric services can be saved if they have access to transportation that can get them quickly to the nearest facility. Programmes to reduce maternal mortality should

be based on the principle that every pregnant woman is at risk for life-threatening complications.

For the maternal mortality ratio to be reduced dramatically (certainly, for it to drop by 75 per cent, as the MDGs require), all women must have access to high-quality delivery care. Such care has three essential elements: a skilled attendant at delivery; access to emergency obstetric care (EmOC) in case of a complication; and a referral system to ensure that those women who do experience complications can reach life-saving EmOC in time.<sup>5</sup> No matter how skilled the attendant is, if s/he is performing deliveries in a setting without the drugs, equipment and infrastructure to deliver EmOC – and cannot get her patients quickly to that care – some women will die. The large majority of maternal deaths are linked to this kind of unexpected complication and therefore fall into this category.<sup>6</sup>

These measures can be introduced in very low income settings. Bangladesh and Sri Lanka, for instance, have reduced maternal mortality ratios through increased use of midwives and community health workers as well as better infrastructure, such as transport to clinics.<sup>7</sup> And in only eight years, Egypt was able to cut maternal mortality in half. This tremendous accomplishment was the result of a comprehensive programme to boost the quality of medical care, especially the management of obstetric complications, and to ensure skilled attendants at births. Attention was also focused on mobilizing community support for women during pregnancy and childbirth and to address reproductive health needs, including family planning.

To minimize maternal deaths, and to safeguard women's health during their reproductive years, women need family planning information and services. In fact, this is the first step in reducing maternal mortality. Currently, 200 million women have an unmet need for safe and effective contraceptive services. Far more ambitious use of these services is required for the MDG target to be met in all regions.

It should not be overlooked that Millennium Development Goal 5 calls for improvements in maternal health, not only reductions in maternal mortality. This is an important distinction. Improvements in maternal health, though important in themselves, will not necessarily be accompanied by reductions in maternal mortality. Conversely, the strategies needed to reduce maternal mortality – increased access to, use and quality of care during pregnancy and childbirth – need to be complemented by efforts to address maternal health more broadly, and by efforts to strengthen the position of women in society through education and a commitment to gender equity. Maternal health will improve through better nutrition for women and girls, combating infectious and non-communicable diseases, averting violence, and meeting reproductive health needs. Access to reproductive information and services is particularly important in addressing the needs of the 1.3 billion young people (10-19 year olds) about to embark on their reproductive lives. Access to family planning and management of sexually transmitted infections, including HIV, will also improve the health and survival of infants – and is an important link between child and maternal health goals.

## Notes

<sup>1</sup> World Health Organization/United Nations Children's Fund, *Maternal Mortality in 2000: Estimates developed by WHO, UNICEF, UNFPA*, available from [http://www.who.int/reproductive-health/publications/maternal\\_mortality\\_2000/mme.pdf](http://www.who.int/reproductive-health/publications/maternal_mortality_2000/mme.pdf).

<sup>2</sup> Millennium Project, Interim Report of Task Force 4 on Child and Maternal Mortality, available at: <http://www.unmillenniumproject.org/html/tf4docs.shtml>.

<sup>3</sup> Ibid.

<sup>4</sup> UNICEF, Antenatal care, accessed at <http://www.childinfo.org/eddb/antenatal/index2.htm>, August 2004.

<sup>5</sup> Ibid.

<sup>6</sup> Millennium Project, Interim Report of Task Force 4 on Child and Maternal Mortality, available at: <http://www.unmillenniumproject.org/html/tf4docs.shtml>.

<sup>7</sup> United Nations, *The World's Women 2000: Trends and Statistics*, p. 62 (United Nations publication, Sales No. E.00.XVII.14); and World Bank, "Making motherhood safer", available at <http://www.worldbank.org/html/extdr/hnp/population/mmsafer/default.htm>.

## How the indicators are calculated

### Maternal mortality estimates

The maternal mortality ratio is the number of maternal deaths per 100,000 live births. Measuring maternal mortality accurately is difficult except where comprehensive registration of deaths and causes of death exists. Currently, such countries account for only around one quarter of all births and all have relatively low levels of maternal mortality. Elsewhere, survey methods or models have to be used to estimate maternal mortality ratios. Estimates of maternal mortality are subject to rather large margins of uncertainty. Therefore, the figure of 529,000 maternal deaths in 2000 should be interpreted with caution and should not be compared with previous estimates to assess trends. Globally, it is estimated that the actual number of maternal deaths could fall within a broad range of 277,000 to 817,000.

### Process indicators

Process indicators can be used to monitor the availability of adequate care for pregnant women at delivery. They focus on professional care during childbirth, particularly for the management of complications. The most widely available indicator is the proportion of women who deliver with the assistance of a skilled attendant, defined as a medically trained health care provider – doctor, nurse or midwife. Data on this indicator are available for 142 countries and trend data for a subset of 62 countries representing 75 per cent of births in the developing world in 2000.

A skilled attendant refers exclusively to people with midwifery skills who have been trained to proficiency in the skills necessary to manage normal deliveries and diagnose, manage or refer obstetric complications. At minimum they must be competent to manage normal childbirth and be able to provide emergency obstetric care. Not all skilled attendants can provide comprehensive emergency obstetric care, although they should have the skills to diagnose when such interventions are needed and the capacity to refer women to a higher level of care. Traditional birth attendants, trained or not, are excluded from the category of skilled attendants at delivery.

There are some concerns that the term "skilled attendant" may not adequately capture the extent to which women have access to good quality care, particularly when complications arise. Although efforts have been made to standardize the definitions of doctors, nurses, midwives and auxiliary midwives used in most household surveys, it is probable that many so-called skilled attendants would not meet the criteria as defined by the World Health Organization.