

## V. MATERNAL MORTALITY

### International goals

*Countries should strive to effect significant reductions in maternal mortality by the year 2015: a reduction in maternal mortality by one half of the 1990 levels by the year 2000 and a further one half by 2015 .... Countries with intermediate levels of mortality should aim to achieve by the year 2005 a maternal mortality rate below 100 per 100,000 live births and by the year 2015 a maternal mortality rate below 60 per 100,000 live births. Countries with the highest levels of mortality should aim to achieve by 2005 a maternal mortality rate below 125 per 100,000 live births and by 2015 a maternal mortality rate below 75 per 100,000 live births (para. 8.21 of ICPD Programme of Action).*

*By the year 2000, a reduction in maternal mortality by one half of the 1990 level; by the year 2015, a further reduction by one half (para. 36(d) of WSSD Programme of Action).*

*... reduce ill health and maternal morbidity and achieve world wide the agreed-upon goal of reducing maternal mortality by at least 50 per cent of the 1990 levels by the year 2000 and a further one half by the year 2015 ... (para. 106(i) of FWCW Platform for Action).*

*The same goal of reducing the maternal mortality ratio by half between 1990 and 2000 has been established by several conferences, including the Nairobi Safe Motherhood Conference (1987) and the World Summit for Children (1990), and by WHO's Ninth General Programme of Work (1996 -2001).*

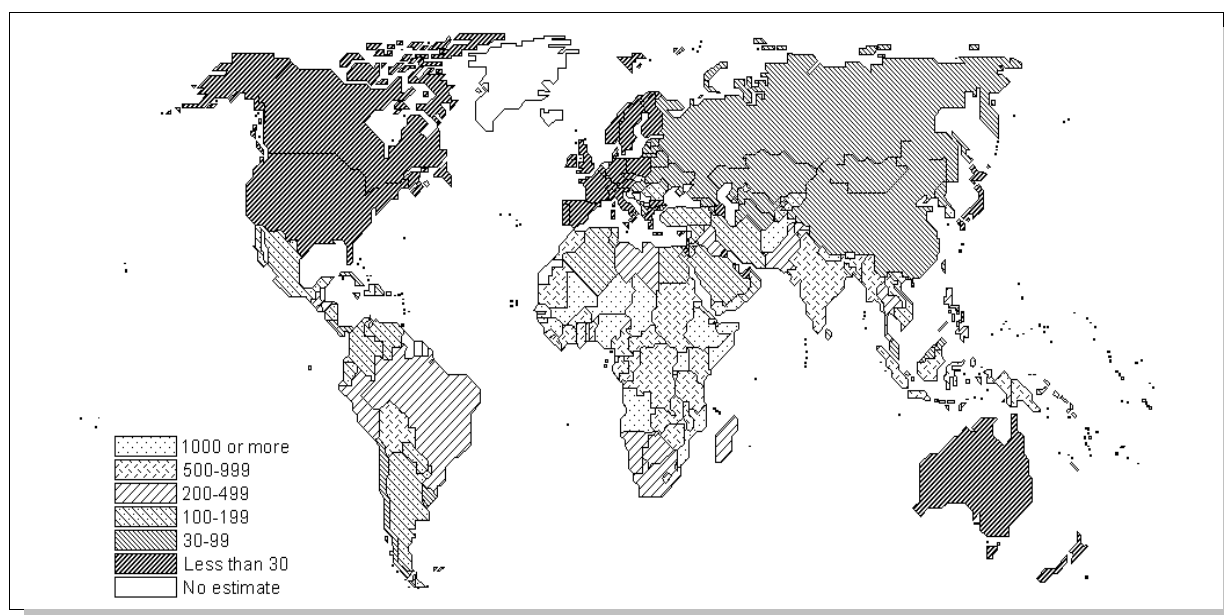
### DEFINITION

A maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. The maternal mortality ratio is the number of maternal deaths over a year per 100,000 live births in that year.

### RECENT SITUATION

Maternal mortality shows a wide disparity among countries, with ratios under 10 deaths per 100,000 births in some cases and substantially exceeding 1,000 in others. The range of values is greater, in proportional terms, than for any of the other health and development indicators included in this report.

As of 1990, one fifth of the countries had maternal mortality ratios estimated at less than 30 maternal deaths per 100,000 births (table V.1). By region, about 70 per cent of the countries in the more developed regions fall in this category, whereas only 6 per cent in the less

**Figure V.1.** Maternal mortality ratio, 1990

Source: WHO/UNICEF, *Revised 1990 Estimates of Maternal Mortality: A New Approach* (Geneva, WHO, 1996).

NOTE: Estimates are not presented for countries or areas with populations under 150,000.

**Table V.1.** Distribution of countries according to estimated maternal mortality ratio, 1990

	Percentage of countries with a maternal mortality ratio of:							Number of countries	
	Less than 30	30-99	100-199	200-499	500-999	1,000 or more	Total	With estimates available	Total
World	20	18	17	10	21	13	100	157	184
More developed regions	71	26	3	0	0	0	100	35	43
Less developed regions	6	16	20	13	27	17	100	122	141
Least developed countries	0	2	0	5	48	45	100	42	45
Africa	0	0	8	10	50	32	100	50	53
Asia and Oceania <sup>a</sup>	15	27	23	13	15	8	100	48	57
Latin America and the Caribbean	0	29	42	21	4	4	100	24	31

Source: WHO/UNICEF, *Revised 1990 Estimates of Maternal Mortality: A New Approach* (Geneva, WHO, 1996).

NOTE: Excludes countries and areas with population under 150,000. Due to rounding, the sum of the subcategories may not be equal to 100 per cent.

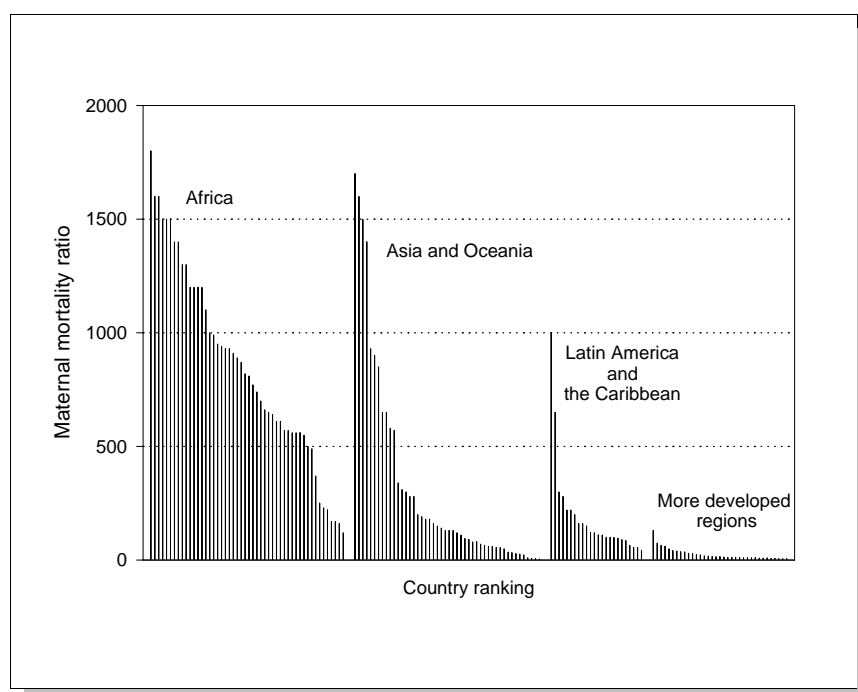
<sup>a</sup> Excluding Japan, Australia and New Zealand, which are included in the more developed regions.

developed regions do so. None of the least developed countries belongs to this category. Nearly half of the least developed countries have maternal mortality ratios in the highest category, more than 1,000, and nearly half have ratios between 500 and 999.

Those countries from the less developed regions with maternal mortality of less than 30 are all in Asia and Oceania. In the case of Africa, no country has a ratio less than 100, and more than four fifths of the African countries have a maternal mortality ratio of 500 or more. In Eastern and Western Africa, maternal mortality is particularly high (figs. V.1 and V.2). The majority of African countries will need to make significant progress to achieve the year 2005 goal for countries with the highest levels of mortality—namely, below 125.

In contrast to Asia and Oceania, where countries are spread across the entire range of levels of maternal mortality, the range of values is more limited in Latin America and the Caribbean. The majority of Latin American and the Caribbean countries have mortality ratios less than 200.

Figure V.3 shows the percentage shares of 15-to-49-year-old women living in countries with different levels of maternal mortality. Nearly half of the women of reproductive age live in countries with a maternal mortality ratio less than 100. Yet, about 25 per cent of women live in countries with maternal mortality ratios between 500 and 999, and another 5 per cent, in countries with maternal mortality ratios 1,000 and above.



**Figure V.2.** Maternal mortality ratio, 1990, by country ranking and region

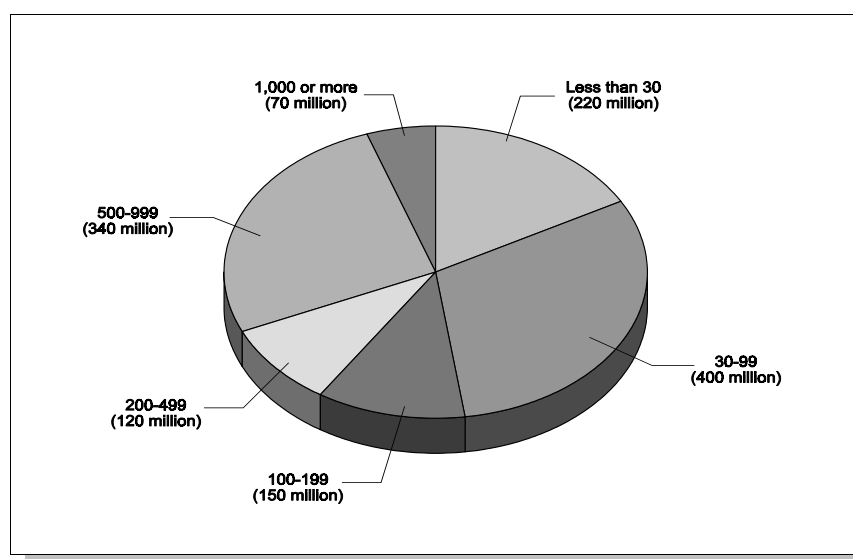
Source: WHO/UNICEF, *Revised 1990 Estimates of Maternal Mortality: A New Approach* (Geneva, WHO, 1996).

NOTE: Bars show level of maternal mortality ratio for individual countries.

**Figure V.3.** Distribution of female population of reproductive age, by maternal mortality ratio, 1990

Source: WHO/UNICEF, *Revised 1990 Estimates of Maternal Mortality: A New Approach* (Geneva, WHO, 1996).

NOTE: For countries with data, representing 99 per cent of women of reproductive age.



## SOURCES OF DATA, COVERAGE AND QUALITY

The maternal mortality ratios shown here were estimated by the World Health Organization and United Nations Children's Fund. The estimates are for 1990 and available for 157 countries. They are published in *Revised 1990 Estimates of Maternal Mortality: A New Approach* (WHO/UNICEF, 1996).

The direct computation of the Maternal Mortality Ratio (MMR) requires a well-developed registration system of births and deaths, as well as causes of death. Yet few countries have complete counts of births and deaths; even fewer register the cause of death, and fewer still systematically note pregnancy status on the death form. Where vital registration systems are absent or inadequate, it is possible to estimate maternal mortality using techniques such as reproductive-age mortality surveys (RAMOS). Household surveys using direct estimation have a number of disadvantages, including cost, since sample sizes need to be very large. The results inevitably have wide margins of error. Some indirect survey techniques (sisterhood methods) are more efficient in terms of sample size but do not produce a current estimate and have large margins of error. In general, countries with high maternal mortality have neither adequate systems of vital registration nor the resources to rely on surveys. Because of the absence of data for some 80 countries of the world and the lack of comparability of figures from different sources, WHO and UNICEF have used a combination of adjustment factors and modelling techniques to develop estimates for all countries for 1990. The development of these 1990 estimates of maternal mortality has been followed by increased efforts on the part of the countries to measure maternal mortality. In order to take these new data into account, work is now under way to develop a new set of global, regional and national estimates.

WHO and UNICEF note that their estimates of MMR are primarily intended to be used in countries with no estimates of maternal mortality or where there is concern about the adequacy of officially reported estimates. The intention is to draw attention to the existence and likely dimensions of the problem of maternal mortality. The estimates should be taken as indicating orders of magnitude rather than precise estimates and may be used to monitor changes over the decade rather than to monitor trends on a year-to-year basis, since the standard errors associated with the estimated MMR are very large.

In estimating MMR, WHO and UNICEF made the following adjustments:

- (a) For developed countries with complete vital registration systems and relatively good attribution of cause of death: MMR is the reported number, adjusted by a factor of 1.5 to account for the problem of misclassification of maternal death;
- (b) For developing countries with good health registration but poor or non-existent attribution of cause of death: a model was used to predict the proportion of deaths of women of reproductive age which are maternal. The proportion was then applied to the deaths of women of reproductive age actually registered;
- (c) For countries with RAMOS type of estimates of maternal mortality: the MMR derived from the RAMOS study was used directly, without any adjustments;
- (d) For countries with sisterhood estimates of maternal mortality: the reported proportion of all deaths of women of reproductive age which are maternal was applied to the total number of deaths of women of reproductive age taken from the United Nations Population Division's population estimates and projections for the year 1990;
- (e) For countries with no estimates of maternal mortality: a model was used to predict the proportion maternal of all deaths of women of reproductive age. The proportion was then applied to the adult female deaths generated by the United Nations Population Division's population estimates and projections.

## FOR FURTHER INFORMATION

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## REFERENCES

- United Nations (1996). *Indicators of Sustainable Development: Framework and Methodologies*. Sales No. E.96.II.A.16.
- \_\_\_\_\_ (forthcoming). *World Population Monitoring, 1998. Health and Mortality: Selected Aspects*.
- WHO (1978). *Primary Health Care. Report of the International Conference on Primary Health Care, Alma-Ata, USSR, 6-12 September 1978* (CPHC/ALA/78.10) Geneva.
- \_\_\_\_\_ (1981). *Global Strategy for Health for All by the Year 2000*. Geneva.
- \_\_\_\_\_ (1996). *Catalogue of Health Indicators*. Geneva.
- WHO/UNICEF (1996). *Revised 1990 Estimates of Maternal Mortality: A New Approach*. Geneva.