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SPECIAL ARTICLE

An update on maternal mortality in low-resource countries

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ABSTRACT

Maternal mortality constitutes a major problem in the context of women's health. All regions experienced a decline in maternal mortality ratio (MMR) between 1990 and 2010. Among those women who do not die, 300 million are currently living with health problems and disabilities caused by complications of pregnancy and childbirth. MMR in sub-Saharan Africa remains high, at more than 450 maternal deaths per 100 000 live births. It is currently accepted that in many areas the Millennium Development Goals will not have been achieved by 2015 and in some countries, if current trends continue, they will not be reached until after 2040. Maternal mortality is much more than just a health problem. It involves lack of respect for women's basic human rights and failure to show the disadvantages and risks to which they are exposed.

1. Introduction

Maternal mortality constitutes a major problem in the context of women's health. According to the World Health Organization (WHO), over 20% of all healthy life years lost in women of childbearing age are due to 3 factors: maternal morbidity and mortality, sexually transmitted infections including HIV/AIDS, and gynecological cancer [1]. The maternal mortality ratio (MMR) is an indicator of the development and quality of life of a population, and is associated with social development, coverage and quality of health services, and the ability to practice reproductive rights. MMR is a particularly sensitive indicator of inequality, not only providing information on the risks of pregnancy and reproduction in a country, but also on the health and status of women.

Every pregnancy carries risks for mother and baby. However, the risks are higher in countries where resources are scarce and health services are inaccessible and inadequate. According to WHO health statistics, the largest gap between rich and poor is observed in maternal mortality levels. Low-resource countries account for 99% (284 000) of global maternal deaths (Table 1), the majority of which are in sub-Saharan Africa (162 000) and Southern Asia (83 000). These 2 regions accounted for 85% of the global burden, with sub-Saharan Africa alone accounting for 56%. The MMR in low-resource regions (240) was 15 times higher than in high resource regions (16). Sub-Saharan Africa had the highest MMR, at 500 maternal deaths per 100 000 live births, while Eastern Asia had the lowest among Millennium Development Goal (MDG) low-resource regions, at 37 maternal deaths per 100 000 live births. The MMRs of the remaining MDG low-resource regions in descending order are: Southern Asia (220), Oceania (200), South-eastern Asia (150), Latin America and the Caribbean (80), Northern Africa (78), Western Asia (71), and Caucasus and Central Asia (46). The adult lifetime risk of maternal mortality in women from sub-Saharan Africa was the highest at 1 in 39, in contrast to 1 in 130 in Oceania, 1 in 160 in Southern Asia, 1 in 290 in South-eastern Asia, and 1 in 3800 among women in high-resource countries [2].

2. Millennium Developmental Goals: a dream

In 2000, world leaders signed the Millennium Declaration at the United Nations, from which the MDGs were developed. The aim of these goals is to improve the social and health conditions of the poorest countries, including uniting various countries and organizations that seek to improve socioeconomic and health aspects of the population at risk. Secretary-General Kofi Annan stated: "We will have time to reach the Goals—worldwide and in most, or even all, individual countries—but only if we break with business as usual. We cannot win overnight. Success will require sustained action across the entire decade between now and the deadline. It takes time to train the teachers, nurses and engineers; to build the roads, schools and hospitals, to grow the small and large businesses able to create the jobs and income needed. So we must start now. And we must more than double global development assistance over the next few years. Nothing less will help to achieve the Goals" [3].

One of the aims of MDG 5 is to reduce the MMR worldwide by 75% between 1990 and 2015, utilizing the proportion of births assisted by

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Table 1
Estimates of maternal mortality ratio (MMR, maternal deaths per 100 000 live births), number of maternal deaths, and lifetime risk by United Nations Millennium Development Goal region, 2010.

Region	MMR	Range of MMR uncertainty		Number of maternal deaths	Lifetime risk of maternal death, 1 in:
		Lower estimate	Upper estimate		
World	210	170	300	287 000	180
Developed regions	16	14	18	2200	3800
Developing regions	240	190	330	284 000	150
Northern Africa	78	52	120	2800	470
Sub-Saharan Arica	500	400	750	162 000	39
Eastern Asia	37	24	58	6400	1700
Eastern Asia excluding China	45	27	85	400	1500
Southern Asia	220	150	310	83 000	160
Southern Asia excluding India	240	160	380	28 000	140
South-eastern Asia	150	100	220	17 000	290
Western Asia	71	48	110	3500	430
Caucasus and Central Asia	46	37	32	750	850
Latin America and the Caribbean	80	68	99	8800	520
Latin America	72	61	88	7400	580
Caribbean	190	140	290	1400	220
Oceania	200	98	430	520	130

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skilled health personnel as an indicator of progress. Another goal of MDG 5 is to achieve universal access to women's reproductive health services, based on indicators such as the contraceptive prevalence rate and unmet need for family planning. The 8 MDGs also cover important areas such as the reduction of child mortality; social development issues, which include the alleviation of poverty; primary education; empowerment of women; tackling HIV/AIDS and malaria; as well as environmental issues and working in partnership to achieve the Goals [4].

The MDG process established a series of strategies including targets and indicators to monitor the extent and degree of compliance. Unfortunately, in 2008, it was observed that the targets set for 2015 with regard to maternal and neonatal health would probably not be achieved. The UN Secretary-General's "Global Strategy for Women's and Children's Health" was introduced in 2010 to energize the international community to provide more resources to achieve MDGs 4 and 5 [5,6]. The actual results in certain areas were far from desirable: mortality in sub-Saharan Africa, for example, was 26 times higher than that in European countries and in some others, such as Mali and Haiti, reaching incomprehensibly high levels (more than 1200)—far from the 75% decline set as a goal. However, some countries had made apparent improvements (Fig. 1) [7,8].

Data from WHO suggest that the total number of maternal deaths decreased from 543 000 in 1990 to 287 000 in 2010 (Table 2). Likewise, global MMR declined from 400 maternal deaths per 100 000 live births in 1990 to 210 in 2010. The latter represents an average annual decline of 3.1%.

All MDG regions experienced a decline in MMR between 1990 and 2010, with the highest reduction in the 20-year period in Eastern Asia (69%), followed by Northern Africa (66%), Southern Asia (64%), sub-Saharan Africa (41%), Latin America and the Caribbean (41%), Oceania (38%), and finally Caucasus and Central Asia (35%). Although this last region experienced the lowest decline, its already low MMR of 71 maternal deaths per 100 000 live births in 1990 made it more challenging to achieve the same decline as a region with a higher MMR in 1990.

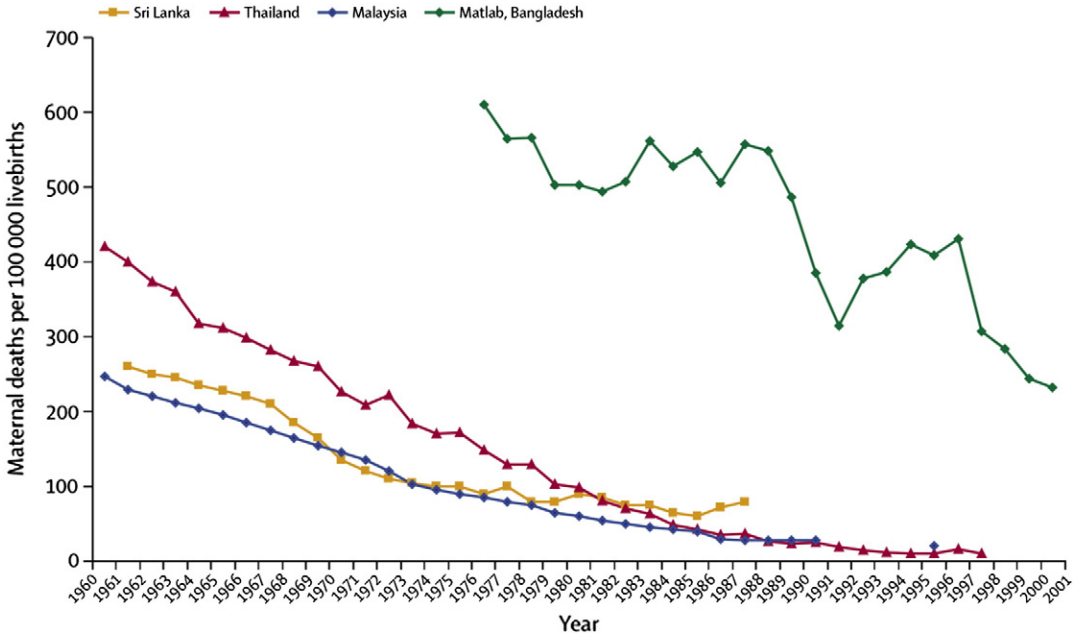

Fig. 1. Trends in maternal mortality in Thailand; Malaysia; Sri Lanka; and Matlab, Bangladesh. Reprinted, with permission from Elsevier, from Ronsman and Graham [17].