② 関連記事

April 6, 1997
"THE MUSLIM"

Govt to introduce national health service soon: Sartaj

ISLAMABAD (PPI): Minister for Finance and Economic Affairs Sartaj Aziz has said that the government is determined to drastically change the existing health profile for the betterment of masses and it would shortly introduce a comprehensive national health service across the country with the help of the private sector. He was speaking at the stone-laying ceremony of the maternal and child health centre here Saturday at the Pakistan Institute of Medical Sciences (PIMS).

aid its basic aim would be to achieve, within five years, 100 percent vaccination of children, 50 percent reduction in material and mortality rate and at least 10 percent reduction in the rate of population growth.

He said the focus of the scheme would be the rural areas and disadvantaged groups with emphasis on universal access to facilities and high quality of service.

Highlighting the objectives of the scheme, he said national mother and child health centre can play a key role in promoting the objectives of the proposed national health service.

Health delivery system is inefficient, medical facilities in most parts of the country are non-existent and hospitals are over-crowded, he added.

He said on the other hand thousands of basic health units in the rural areas are without doctors and paramedical staff while a large number of young doctors are jobless.

The ever-increasing population and fast peace of urbanisation and exerting immense pressure on the limited facilities resulting in over-crowding and poor quality of service hospitals. Pollution and unhygienic conditions have increased the incidence of disease, he pointed out.

Sartaj Aziz said the government in 1992 realising this serious state of health, launched the social action programme in which special attention was on primary health, in particular to mother and child care. Larger allocation were made for establishing basic health units, expanded programme of immunisation, malaria control programme and training and development of lady health workers but later the PPP government did not pay much heed to this programme.

Commenting on the maternal and child health centre project, he said the project is an important and a priority project for us because good child care starts from the day of conception and the care of child is not complete without the care of mother.

Sartaj Aziz thanked the government of Japan and Japanese International Cooperation Agency for having agreed to provide grant assistance of 1905 million yen to establish the centre which will be built by the Japanese contractors on a turn key basis in record time of 24 months.

Earlier, Takao Kawaka M Ambassador of Japan, in his address said Japan and Pakistan have been enjoying close and friendly relationship and have been cooperation for economic and social development in a wide range of fields for over four decades. He said on the request from the government of Pakistan, the government of Japan decided to extend assistance for the establishment of this mother and child health centre at the Pakistan Institute of Medical Sciences for efficient provision of health cover for both mothers and their children by ensuring after motherhood and reducing maternity deaths.

He said it is a universal truth that only health mothers can bring a healthy society.

In his welcome address Prof Dr Mushtaq A Khan, project director and Chairman of the steering committee of mother and child health centre project, said Pakistan has an estimated population of 140 million and about five million babies are born every year and 25 percent of these are malnourished or are low birth weight. Infant mortality rate is about 90/1000 live births and maternal mortality is quoted at 3 to 5/1000 pregnancies.

He said if we compare this data with the developed countries like Japan infant mortality rate is more than ten times in Pakistan but maternal rate is more than 200 times that of the developed countries.

He said national maternal and child health centre project's aim is strengthening and promotion of safe motherhood, family and reproductive health.

April 6, 1997
THE NEWS
ON SUNDAY

Pakistan's health profile to undergo major surgery: Sartaj

APP

ISLAMABAD: The government will change the health profile of the country with the private sector's involvement, said minister for finance, Sartaj Aziz, while speaking at the ground-breaking ceremony of a Mother and Child Health Centre (MCHC) at the Pakistan Institute of Medical Sciences here on Saturday.

Sartaj said, the government will shortly launch a comprehensive national health service across the country. The ambassador of Japan, Takao Kawakami, and the project director and chairman of the steering committee of the MCHC project, Dr Mushtaq A Khan, also addressed the gathering. Other prominent people who attended the ceremony included secretary health, Zaheer Sajjad, and the executive director of PIMS, Dr Mahmood Ahmed.

Highlighting the features of the national health service, the minister said, its basic aim will be to achieve, within five years, 100% vaccination of children, 50% reduction in maternal mortality rate, and at least 10% reduction in population growth.

The scheme will focus on rural areas and disadvantaged groups, with special emphasis on universal access to facilities. The MCHC should play a key role in promoting the objectives of the proposed service, he added. The facilities of the centre, he said, should not be restricted to Islamabad and its adjacent areas, but should be open to all regions of the country. For this purpose, he suggested the formulation of an effective referral system through which cases needing specialised attention can be referred to the centre.

Another area deserving attention is research in areas of mother and child health, in particular on preventive and curative methods, effective delivery and community involvement in health programmes.

Sartaj Aziz appreciated the government of Japan and JICA for having agreed to provide grant assistance of Yen 1,905 million to establish the Centre, which will be built by Japanese contractors on a turn-key basis in 15 months. The Japanese government has so far provided an assistance of Yen 12,113 million ($ 97 million) for Pakistan's health sector.

Sartaj said, Pakistan's health indicators are far from satisfactory. Despite recent efforts by way of enhancing budget allocations for health sector by almost 50 per cent and expanding health outlets, the situation continues to be serious. On the one hand, thousands of basic health units in the rural areas are without doctors and paramedical staff, while on the other, a large number of young doctors are jobless, he observed.

Ever-increasing population and fast pace of urbanization are exerting immense pressure on available facilities, resulting in overcrowding and poor quality of service in hospitals.

Speaking on the occasion, the Japanese ambassador said, Japan has always been willing to cooperate with Pakistan in its efforts to improve the standard of basic amenities of life available to Pakistani people. For the last several years now, Japan is the largest bilateral donor for Pakistan.

In his address, Dr Mushtaq said, the project aims at strengthening safe motherhood and reproductive health. These objectives will be achieved through the construction of an obstetric institution as a core practical training centre.

The project will have two components including the construction of a mother health care centre, he said, adding that the in-patient block will have 150 beds, besides radiology services, modern operation theaters and emergency obstetric services. The out-patient block will have extensive facilities for day careand family welfare services.

In addition, a fully equipped training institute is also being established. This institute will hold courses on safe-motherhood and will help train master-trainers from all over the country in different cadres including doctors, nurses, lady health visitors, lady An additional component of the project is a small residential facility for mothers and families from far-off areas, with patients admitted either in the new facility or the Children's Hospital.

Introduction: women and health security

As this special issue of the *World health statistics quarterly* demonstrates, a great deal of information on all aspects of women's health is now available. This knowledge and information has been indispensable to the continual assessment of the situation of women throughout the world and in all periods of their lives.

Women's overall health and well-being has improved. Life expectancy indicators illustrate a general trend for women to live longer. This is especially the case where women have enjoyed the fruits of development, have had access to services, have benefited from a physical and cultural environment containing few health risks and have acquired the information necessary to enable them to make informed choices.

There is also no doubt that the greater involvement of women in the workforce and in the socioeconomic and health arenas has contributed substantially to a different vision of women's health, not only as care-providers, but also as decision-makers. Problems such as violence against women have existed throughout time, but it is women who have had the vision and commitment to bring to light the terrible health consequences of this violence, and to ensure that the silence around gender-based violence is broken.

In addition to ensuring that the knowledge base on women's health problems continues to grow, the unflagging commitment and work of individuals, institutions and organizations working in the area of women's health have provided particularly useful lessons. In looking for and applying solutions, we are now able to draw upon the wealth of experience already gained, both positive and negative, in order to build on what has been achieved, guard against repeating past mistakes, and prevent wasting precious resources.

Among the most significant lessons is the realization that health must be considered in a holistic way. This applies to the health of all human beings – men and women – at all ages. As far as women's health is concerned, there has been a tendency in the past to deal with health care needs through separate programmes related to particular health issues. An example of this has been the overemphasis on the reproductive aspects of women's health, often with subsequent neglect of other areas. At both international and national levels there is now a movement which adopts a more humane approach and provides integrated services to women in a holistic fashion.

Another lesson learned is that, in looking at health issues affecting women, it is essential to take a lifespan perspective, since health conditions in one phase of a woman's life not only affect subsequent phases of her own life, but also have an impact on future generations. This inter-generational link is a characteristic unique to women.

In spite of the overall improvement in women's health and the lessons learned the situation is still highly unsatisfactory. Today there is a certain restlessness among those who have been actively working at all levels for so many years to improve women's health. The right words have been said in all the right places. General consensus has been reached on the steps which need to be taken to make a measurable difference in so many areas of women's health across age groups and borders. And yet action is still lagging and the measurable differences remain elusive.

The following statistics are testimony to the fact that so much more needs to be done:

In the area of violence against women –

- Studies worldwide indicate that between 20 and 50% of women have been beaten by a male partner, with wide-ranging physical and mental health consequences.
- Violence against women in conflict and refugee situations is also a serious health issue, with women and children representing the majority of civilian victims worldwide.

Maternal morbidity and mortality continue to be unacceptably high –

- 99% of the 585 000 deaths from pregnancy-related causes in 1990 took place in developing countries. In other words, 1 woman in 50 in the developing world dies as a result of pregnancy-related complications compared to 1 woman in 8 000 in the developed world.
- The number of maternal deaths represents only a small fraction of the total burden of disease associated with pregnancy and childbirth. Conservatively estimated, the submerged fraction of the iceberg amounts to some 20 million cases of morbidity and disability each year, ranging from acute and devastating injuries such as obstetric fistula to chronic, debilitating conditions such as severe anaemia, reproductive tract infections and uterine prolapse. Some one-third of all women in the developing world have suffered such problems at some time in their lives.

With respect to HIV/AIDS –

- While women were under-represented among those suffering from HIV infection in the 1980s, this trend is no longer discernible. In 1995, almost half of all newly-infected adults throughout the world were women. Women in developing countries, notably in areas of the world where the pace of HIV infection is growing at an especially alarming rate, have been particularly affected. In 1995, 35% of all new infections affecting women were found in South-East Asia.
- Seven million women have already contracted HIV. By the year 2000 this number will have climbed to 13 million, and 4 million of these women will have already died.

While statistics do not tell the whole story, when appropriately used, they are very revealing of the inequities that continue to take their toll on the health of women. How can we provide a guarantee that this scenario becomes a relic of the past in a brighter health future for today's infant girl?

One answer is to spare no effort in supporting and moving forward the cause of women's health. Another complementary strategy is to ensure that women's health issues remain firmly on the political and developmental agenda at all levels.

The World Health Organization is firmly committed to both of these avenues. WHO has mainstreamed women's health in all relevant programmes and strengthened these components in order to address all aspects of women's health and well-being throughout their entire lives. In addition, the Global Commission on Women's Health was created as an essential expression of the commitment of WHO to forging ahead with positive and effective measures at all levels for improving women's health, and carrying out international and national advocacy on behalf of women's health concerns. It has been said by many people that neither men nor women can enjoy their human rights until they enjoy the most fundamental human right of all – the right to health. The right to health is best expressed in the notion of "health security" throughout the lifespan. Health security traces the entire lifespan of a woman from the time *in utero* through to old age. It encompasses all aspects of the basic human right to health: the right to freedom of choice and personal security; the right to food in sufficient quantity and of good quality; the right to live and work in environments where known health risks are controlled; and the right to education, information and decent housing.

Health security also encompasses the principle of universality in health care, so that all human beings – men or women – may live with the knowledge that they can seek and receive quality health care which is also accessible and affordable. Health security, therefore, seeks the empowerment of people through various forms of societal and economic support and fuller knowledge and awareness, thus enabling people to make the right choices, cope with the changing patterns of vulnerability and keep healthy. Women will only enjoy the right to health once progress is made in finally overcoming persistent barriers to equity, choice and participation.

The World Health Organization and the Global Commission on Women's Health have adopted women's right to health and the enjoyment by women of health security throughout their lifespan as the platform for advocacy efforts and actions. In this way, the attention which is so necessary to improving women's health across age groups and borders will continue to occupy the spotlight in all arenas and at all levels.

Every woman has the right: to know that she is free from the threat of gender-based violence both inside and outside her home; to reap the benefits of education in both formal and informal environments which are themselves free from health risks; to know that everything that can be done will be done to ensure that she does not die, or become ill as a result of pregnancy and childbirth; and to the social, political and economic empowerment that will allow her to protect herself from HIV/AIDS and other sexually transmitted diseases. Finally, every woman has the right to accessible and affordable health care services and to gender-sensitive interventions delivered by providers who adhere to the highest ethical standards.

We are all accountable for guaranteeing these health rights to all women throughout the world. We can fulfil our responsibilities by expanding our partnerships to strengthen our individual and collective actions and efforts. Unceasing advocacy, concrete actions with measurable outcomes and solidarity across all barriers will make the difference in providing for a better health future for today's infant girl, tomorrow's girl and woman.

This special issue of the *World health statistics quarterly* contains a series of articles which present the wide range of issues that are critical to achieving health security for women. Women's reproductive health is comprehensively addressed. The article on maternal mortality presents new data which reveal that the scale of the problem is much greater than earlier believed. Options for expanding the contraceptive choices available to underserved women who wish to regulate their fertility, and the adverse repercussions on health status resulting from the limited range of contraceptives made available in some contexts are presented in the article on the contraceptive method mix. In "Combating female genital mutilation: an agenda for the next decade", the author reports that this phenomenon continues to be a problem in many African countries and proposes actions to accelerate progress in eliminating it.

Another group of articles addresses women's differential vulnerability to infection, the differential impact of diseases on women, and differential treatment rates by sex. Articles on HIV/AIDs address women's increased vulnerability to HIV. Critical areas for action by policy makers and the health care profession are identified. The article "Women and tuberculosis" underscores the fact that women's lower propensity to seek diagnosis and treatment has devastating consequences for their health. It has been found that gender plays a large role in the impact of leprosy. Gender-sensitive strategies for improving disease control are laid forth. "Women and smoking" makes it clear that, although smoking is seen largely as a male problem, it leads to a number of killer diseases in women. Recommendations for research, public policy and education are made.

Several other articles examine the special health needs of specific groups of women. The article on aging women reinforces the importance of addressing women's health throughout the entire lifespan in order to avoid certain health conditions in their old age. One author points out that migration poses a major public health problem for women.

Health security for women cannot be divorced from broader ethical concerns. The article "Ethics and reproductive health: a principled approach" points out that women must be treated as competent partners and participants when formulating medical decisions. The piece on sexual abuse among health practitioners furthers knowledge on the barely explored field of the sexual exploitation of female patients by health care professionals in positions of trust.

It is hoped that this special issue of the *World health statistics quarterly* will provide health professionals and lay people in all regions of the world with new and critical data and information which will be of use in their continuing endeavours to improve women's health across age groups and political borders.

Aleya El Bindari Hammad
Executive Administrator
for Health Policy in Development,
World Health Organization, Geneva

Maternal mortality

Carla AbouZahr[a], Tessa Wardlaw[b], Cynthia Stanton[c] & Kenneth Hill[d]

Introduction

Levels of maternal mortality in industrialized and developing countries show a greater disparity than any other public health indicator, far exceeding differences in infant mortality rates which are most often taken as the measure of comparative disadvantage. Although there have been significant declines in infant mortality rates in recent years, the available evidence indicates that the same is not true for maternal mortality. As the end of the 20th century approaches, in the developing world 1 woman in 50 still dies as a result of pregnancy-related complications and the figure rises to 1 in 10 in many parts of Africa. By contrast, the figure for developed countries can be as low as 1 in 8 000.

Maternal mortality as an indicator of development

Maternal mortality is a particularly sensitive indicator of inequity; it offers a litmus test of the status of women, their access to health care and the adequacy of the health care system in responding to their needs. Information about the levels and trends of maternal mortality is needed, therefore, not only for what it tells us about the risks of pregnancy and childbirth, but also for what it implies about women's health in general and, by extension, their social and economic status.

The importance of maternal mortality as an indicator of women's health and status, and by extension of human development, is reflected by its inclusion in the goals of international conferences, such as the Nairobi Safe Motherhood Conference in 1987, the World Summit for Children (WSC) in 1990, the International Conference on Population and Development (ICPD) in 1994, and the Fourth World Conference on Women (FWCW) in 1995. The goal common to all these conferences is reduction of maternal mortality to half the 1990 levels by the year 2000. Related goals include increasing access to antenatal care, ensuring that all women deliver with a skilled birth attendant and improving the nutritional status of girls and women.

Definition and causes of maternal mortality

The *Tenth revision of the international statistical classification of diseases (ICD-10)* defines a maternal death as 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 *(1)*. Thus, like infant mortality, maternal mortality is, in part, a time-of-death indicator. Unlike infant mortality, however, measuring maternal mortality requires knowledge not only of the timing of death but also of the cause of death.

Maternal deaths should be divided into two groups:

Direct obstetric deaths are those resulting from obstetric complications of the pregnant state (pregnancy, labour and the puerperium), from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above.

Indirect obstetric deaths are those resulting from previous existing disease or disease that developed during pregnancy and which was not due to direct obstetric causes, but was aggravated by physiological effects of pregnancy.

The direct causes of maternal mortality are the same around the world; haemorrhage, sepsis, eclampsia, obstructed labour and abortion complications account for around 80% of all maternal deaths. Although the distribution of causes differs somewhat from region to region, globally the biggest proportion of deaths (25%) is due to haemorrhage, most of which occurs during the postpartum period. Sepsis accounts for around 15% of the total, obstructed labour for 7%, eclampsia for 8%, and unsafe abortion for 13%. Other direct obstetric causes, including ectopic pregnancy, embolisms and anaesthesia accidents, account for a further 8% of direct maternal deaths. Indirect causes of maternal death such as anaemia, malaria, cardiovascular diseases, hepatitis and diabetes, account for some 20% of all maternal deaths. *(Fig. 1)*

Deaths from "accidental or incidental" causes have historically been excluded from maternal mortality. However, in practice, the distinction between incidental and indirect causes of death is

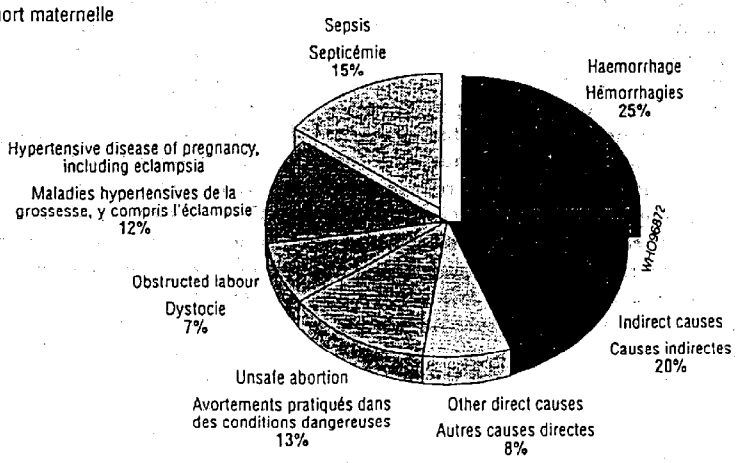
[a] Technical Officer, Maternal Health and Safe Motherhood Programme, WHO, Geneva.

[b] Project Officer – Statistics and Monitoring, Planning Office, UNICEF, New York.

[c] Health Specialist, Demographic and Health Surveys Project, Macro International Inc.

[d] Professor, Department of Population Dynamics, Johns Hopkins University & Director, Hopkins Population Center.

Fig. 1
Causes of maternal deaths
Causes de mort maternelle



difficult to make. Some deaths from external causes – for example, suicide or homicide – may be attributable to the pregnancy itself *(2)*. This phenomenon is common to both developed and developing countries. A study in the United States found that several deaths of pregnant or recently pregnant women were the result of physical violence related to the fact of pregnancy and that had they been included as maternal deaths the overall maternal mortality ratio would have increased by 8% *(3)*.

The medical causes of maternal death represent only the most visible dimension of a multilayered problem. In reality it is often logistic or health service factors that determine whether a woman with pregnancy-related complications lives or dies. Lack of access to skilled health care for complicated pregnancies or for emergencies is often the root cause of death. Barriers to such access can be physical (distance, lack of transport), economic (lack of resources to pay for the needed transport, care or drugs), or sociocultural (low status which impedes women's ability to take decisions to seek care and which may impose restrictions on their mobility).

Even when a woman reaches a health facility a variety of health service factors can prevent her from receiving appropriate care in a timely manner. These include, for example, shortages of drugs and equipment, lack of safe blood supplies for blood transfusion, and shortages of skilled personnel. In some cases, a woman may not receive care simply because providers fail to realize the gravity of her condition and act appropriately *(2)*.

Actions needed to reduce maternal mortality

The actions needed to attain the goal of reducing maternal mortality have been known and understood for many years. Because women's status is often a determinant of their access to education, health care and nutrition, it is a foundation upon which improvements in maternal health care must rest. However, improving women's status will necessarily remain a long-term objective. In the short term, there are three essential interventions that will help to reduce maternal deaths:

- reducing the number of high risk and unwanted pregnancies;
- reducing the numbers of obstetric complications; and
- reducing deaths among women who develop complications.

Ensuring access to family planning so as to avoid births that are too early or too late in a woman's life, too close together or unwanted, is an important pathway for the prevention of maternal deaths. Unwanted and mistimed pregnancies are associated with a higher risk of maternal death. It has been estimated that ready access to family planning for all women could reduce the numbers of maternal deaths by some 20%.

Once a woman is pregnant, however, she needs care throughout pregnancy and delivery, including essential care for the management of obstetric complications. The number and severity of obstetric complications can be reduced by ensuring that all women have access to basic maternal care – good-quality antenatal, delivery (clean and safe) and postpartum care. Basic maternal care is an opportunity to provide women and their families with information on how to take care of themselves throughout pregnancy and childbirth, to inform them about danger signs and symptoms, and to advise on what to do if complications arise. Such care should include the prevention and management of conditions which can lead to complications – such as anaemia or sexually transmitted diseases – or diseases aggravated by the physiological effects of pregnancy – such as malaria, diabetes, tuberculosis or cardiovascular diseases. Of particular importance during basic maternal care is the early detection and prompt management or refer-

ral of obstetric complications before they become life-threatening emergencies.

Any woman, even if she is healthy and well-nourished, can unexpectedly develop obstetric complications. Such complications often happen suddenly and dramatically, requiring medical intervention quickly if death or serious disability is to be avoided. Providing access to essential care for obstetric complications will help to reduce case fatality rates among women experiencing complications and thus reduce maternal mortality. Services for the management of complications should be available as close as possible to where women live. Whereas certain interventions such as caesarean delivery or blood transfusion require the skills and equipment normally available only at the first referral or district hospital, many other life-saving interventions, such as management of eclampsia, haemorrhage, abortion and sepsis, can be delivered at health centres staffed by people with appropriate midwifery skills. A description of the interventions needed at different levels of the health care system – community, health centre or district hospital – has recently been issued.[e]

New estimates of maternal mortality

Although the interventions needed are well-established, ascertaining progress in reducing maternal mortality is extremely difficult for two reasons: maternal mortality is difficult to measure; and the information available at country level does not generally permit the establishment of good baseline data.

In order to address these problems WHO and UNICEF worked with Cynthia Stanton and Kenneth Hill of Johns Hopkins University to develop a new approach to estimating levels of maternal mortality in developing countries. The new approach has the dual objective of generating improved estimates for countries with inadequate or no national data on maternal mortality, while at the same time providing improved estimates for countries with data by adjusting for problems of under-reporting and misclassification. A full description of the strategy will be published separately.[f]

The new WHO/UNICEF approach to estimating maternal mortality

Assessing levels of maternal mortality at the national level requires knowledge about deaths of women of reproductive age (15-49 years), the cause of death and also whether or not the woman was pregnant at the time of death or had recently been so. Yet few countries count births and deaths; even fewer register the cause of death; and fewer still systematically note pregnancy status on the death form. Broadly speaking, countries fall into one of three categories:

1. Countries with no reliable system of vital registration where maternal deaths – like other vital events – go unrecorded;
2. Countries with relatively complete vital registration in terms of numbers of births and deaths but where cause of death is not adequately classified; cause of death is routinely reported for only 78 countries or areas, covering approximately 35% of the world's population. *(4)*
3. Countries with complete vital registration and good cause of death attribution – although even here, misclassification of maternal deaths can arise for a variety of reasons.

Maternal mortality can be measured by incorporating questions on pregnancy and deaths into large-scale household surveys. The disadvantage of such approaches is that they require large sample sizes and are extremely expensive and time consuming *(5)*.[g] A more cost-effective approach is the *Sisterhood Method* which adds on to existing household surveys a few simple questions about whether or not the sisters of the respondent are still alive. Smaller sample sizes are needed because each respondent can provide information on a number of sisters. However, the results do not provide a current estimates but give an idea of the levels of maternal mortality roughly ten years earlier. There is some evidence that the method may underestimate pregnancy-related mortality *(6, 7)*.

The best way of measuring maternal mortality in the absence of vital registration is to identify and investigate the causes of all deaths of women of reproductive age: the *Reproductive Age Mortality Survey (RAMOS)*. Multiple sources of information – civil registers, health facility records, community leaders, religious authorities, undertakers–are used to identify all deaths *(8)*. Subsequently, interviews with household members and health care providers and facility record reviews are used to identify maternal deaths. *RAMOS* studies are time consuming and complex to undertake, particularly on a large scale and only ten developing countries have carried out *RAMOS* or household studies to estimate maternal morality at the national level.

Methodology for the new estimates

The new estimates were developed using a dual strategy: existing national maternal mortality esti-

[e] World Health Organization. *The mother-baby package: implementing safe motherhood in countries.* Maternal Health and Safe Motherhood Programme, Geneva, 1994 (WHO/FHE/MSM/94.11).

[f] World Health Organization and United Nations Children's Fund. *Revised 1990 estimates of maternal mortality: a new approach by WHO and UNICEF.* Geneva & New York, 1996 (WHO/FHE/MSM/94.11 – UNICEF/PLN/96.1).

[g] For example, a sample of nearly 10,000 pregnancies in Addis Ababa, Ethiopia, yielded 45 deaths and an estimated maternal mortality ratio of 480. At the 95% level of significance this gives a sampling error of around 30%, that is, the ratio could lie between 370 and 660. (Source: *Ref.- Rif. 7*)

mates were adjusted to account for under-reporting and misclassification; and a simple model was developed to predict values for countries with no data. The model uses two widely available independent variables – general fertility rates and proportion of births that are assisted by a trained person – to predict maternal mortality.

Maternal mortality estimates for individual countries can be divided into 5 categories (these categories are used in *Table 1*):

A. *Developed countries with complete vital registration systems and attribution of cause of death.* For these countries the maternal mortality ratio is the reported number adjusted by a factor of 1.5 to account for misclassification of maternal deaths *(9,10)*.[h]

B. *Developing countries with good death registration but poor or non-existent attribution of cause of death.* The model is used to predict the proportion of deaths of women of reproductive age that are maternal. This proportion is then applied to the deaths of women of reproductive age actually registered to obtain the number of maternal deaths and the maternal mortality ratio.

C. *Countries with RAMOS type estimates of maternal mortality.* The maternal mortality ratio derived from the *RAMOS* study is used directly without any adjustments.

D. *Countries with Sisterhood estimates of maternal mortality.* Several recent studies have found that the Sisterhood Method under-estimates total female adult mortality, and presumably, maternal mortality as well *(6, 7)*. However, the Sisterhood Method, in addition to providing an estimate of maternal mortality, also provides estimates of the proportion of all deaths of women of reproductive age that are maternal.[i] Therefore, for these countries, this observed proportion was applied to the total number of deaths of women of women of reproductive age generated by the United Nations Population Division's population projections (1994 revision)[j] for the year 1990 since these are believed to be better estimates of female adult mortality.

E. *Countries with no estimates of maternal mortality.* For countries without accurate information on numbers of deaths and without direct or indirect estimates of maternal mortality, the model is used to predict the proportion maternal of all deaths of women of reproductive age and this proportion is applied to the 1990 United Nations projections of adult female deaths to derive the maternal mortality ratio.

The results of the new approach indicate that globally, there are some 585 000 maternal deaths, 99% of them in developing countries.[f] This is around 80 000 deaths more than earlier estimates have suggested and indicates a substantial underestimation of maternal mortality in the past. Moreover, the number of deaths represents only a small fraction of the total burden of disease associated with pregnancy and childbirth. Conservatively estimated, the submerged fraction of the iceberg amounts to some 20 million morbidities and disabilities each year, ranging from acute and devastating injuries such as obstetric fistula to chronic, debilitating conditions such as severe anaemia, reproductive tract infections and uterine prolapse. Some one-third of all women in the developing world have suffered such problems at some time in their lives.

In developing countries as a whole, maternal mortality ratios range from 190 per 100 000 live births in Latin America and the Caribbean to 870 per 100 000 in Africa. Extremely high ratios of over 1000 per 100 000 live births are found in Eastern and Western Africa *(Table 2)*.

Differences between these revised estimates and previous estimates of maternal mortality

The maternal mortality ratios derived from this new approach differ from earlier estimates, both in terms of global numbers of maternal deaths, and in terms of the regional breakdowns. In particular, estimates for Africa are generally much higher whereas those for Asia and Latin America as a whole are broadly comparable to the earlier figures *(Table 3)*.

These new estimates differ – in some cases considerably – from official figures or from figures derived from other sources such as Sisterhood studies. For example, the figures quoted for developed countries are based on official figures inflated by a factor of 1.5 to account for misclassification of maternal deaths. As already noted, this new approach results in systematically higher estimates of maternal mortality than Sisterhood studies due to the fact that the Sisterhood estimates appear to underestimate adult female mortality and have been adjusted accordingly.

Using the new estimates

The new WHO/UNICEF approach to estimating maternal mortality is primarily intended to be of use in countries with no estimates of maternal mortality or where there is concern about the adequacy of officially reported estimates. The intention was to draw attention to the existence and likely dimensions

[h] The 1.5 adjustment factor is based on evidence from several studies. See, for example, *Ref.- Réf. 9 & 10.*

[i] In so far as the *Sisterhood Method* identifies all pregnancy-related deaths which may include some due to fortuitous or accidental causes, it may over-estimate maternal mortality. However, the method is likely to miss some early maternal deaths such as those related to abortion or ectopic pregnancy. It has been assumed that the two biases cancel out.

[j] United Nations Population Division, *World population prospects: the 1994 revision*, New York, United Nations, 1995 (ST/ESA/SER.A/145).

Table 1
Country estimates of maternal mortality, lifetime risk and numbers of maternal deaths (1990)

Tableau 1
Estimations de la mortalité maternelle, par pays, risque sur la vie entière et nombre de décès maternels (1990)

	Maternal mortality ratio (Maternal deaths per 100 000 live births) – Taux de mortalité maternelle (décès maternels pour 100 000 naissances vivantes)	Number of maternal deaths – Nombre de décès maternels	Lifetime risk of maternal death, 1 in: – Risque de décès maternel sur la vie entière 1 sur:	Category[b] of estimate – Catégorie[b] d'estimation
Afghanistan	1 700	13 000	7	E
Albania – Albanie	65	50	430	A
Algeria – Algérie	160	1 200	120	E
Angola	1 500	7 200	8	E
Antigua and Barbuda – Antigua-et-Barbuda[a]				
Argentina – Argentine	100	690	290	B
Armenia – Arménie	50	40	640	A
Australia – Australie	9	25	4 900	A
Austria – Autriche	10	10	5 600	A
Azerbaijan – Azerbaïdjan	22	40	1 400	A
Bahamas	100	5	400	E
Bahrain – Bahreïn	60	10	360	E
Bangladesh	850	33 000	21	E
Barbados – Barbade	43	5	1 100	E
Belarus – Bélarus	37	50	1 300	A
Belgium – Belgique	10	10	5 200	A
Belize[a]				
Benin – Bénin	990	2 300	12	E
Bhutan – Bhoutan	1 600	980	9	E
Bolivia – Bolivie	650	1 600	26	D
Bosnia and Herzegovina – Bosnie-Herzégovine[a]				
Botswana	250	120	65	E
Brazil – Brésil	220	8 400	130	E
British Virgin Islands – Iles Vierges britanniques[a]				
Brunei Darussalam – Brunéi Darussalam	60	5	430	B
Bulgaria – Bulgarie	27	30	1 800	A
Burkina Faso	930	4 000	14	E
Burundi	1 300	3 400	9	E
Cambodia – Cambodge	900	3 600	17	E
Cameroon – Cameroun	550	2 600	26	E
Canada	6	25	7 700	A
Cape Verde – Cap-Vert[a]				
Central African Republic – République centrafricaine	700	850	21	E
Chad – Tchad	1 500	3 700	9	E
Chile – Chili	65	200	490	B
China – Chine	95	22 000	400	C
Colombia – Colombie	100	800	300	E
Comoros – Comores	950	260	12	E
Congo	890	890	15	E
Cook Islands – Iles Cook[a]				
Costa Rica	55	45	420	B
Cote d'Ivoire	810	4 900	14	E
Croatia – Croatie[a]				
Cuba	95	170	490	B
Cyprus – Chypre	5	5	6 900	E
Czech Republic – République tchèque	15	20	2 900	A
Democratic People's Republic of Korea – République populaire démocratique de Corée	70	370	500	E
Denmark – Danemark	9	5	5 800	A
Djibouti	570	110	24	E

Table 1 *(continued)*

Tableau 1 *(suite)*

Dominica – Dominique[a]				
Dominican Republic – République dominicaine	110	220	230	E
East Timor – Timor oriental[a]				
Ecuador – Equateur	150	460	150	E
Egypt – Egypte	170	3 100	120	C
El Salvador	300	530	65	D
Equatorial Guinea – Guinée équatoriale	820	130	17	E
Eritrea – Erythrée	1 400	1 900	10	E
Estonia – Estonie	41	10	1 100	A
Ethiopia – Ethiopie	1 400	33 000	9	E
Fiji – Fidji	90	15	300	E
Finland – Finlande	11	5	4 200	A
France	15	110	3 100	A
French Polynesia – Polynésie française[a]				
Gabon	500	210	32	E
Gambia – Gambie	1 100	460	13	E
Georgia – Géorgie	33	30	1 100	A
Germany – Allemagne	22	190	2 700	A
Ghana	740	4 800	18	E
Greece – Grèce	10	10	5 600	A
Grenada – Grenade[a]				
Guadaloupe – Guadeloupe [a]				
Guam[a]				
Guatemala	200	730	75	E
Guinea – Guinée	1 600	4 700	7	D
Guinea-Bissau – Guinée-Bissau	910	380	16	C
Guyana[a]				
Haiti – Haïti	1 000	2 300	17	E
Honduras	220	410	75	C
Hong Kong	7	5	9 200	A
Hungary – Hongrie	30	35	1 500	A
Iceland – Islande	0	0	0	A
India – Inde	570	147 000	37	E
Indonesia – Indonésie	650	31 000	41	E
Iran (Islamic Republic of) – Iran (République islamique d')	120	2 700	130	C
Iraq	310	2 200	46	E
Ireland – Irlande	10	5	3 800	A
Israel – Israël	7	5	4 000	A
Italy – Italie	12	65	5 300	A
Jamaica – Jamaïque	120	65	280	C
Japan – Japon	18	230	2 900	A
Jordan – Jordanie	150	260	95	E
Kazakstan – Kazakstan	80	300	370	A
Kenya	650	7 000	20	E
Kiribati[a]				
Kuwait – Koweït	29	15	820	E
Kyrgyzstan – Kirghizistan	110	150	190	A
Lao People's Democratic Republic – République démocratique populaire lao	650	1 200	19	C
Latvia – Lettonie	40	15	1 100	A
Lebanon – Liban	300	220	85	E
Lesotho	610	420	26	E
Liberia – Libéria	560	690	22	E
Libyan Arab Jamahiriya – Jamahiriya arabe libyenne	220	430	55	E
Lithuania – Lituanie	36	20	1 200	A
Luxembourg	0	0	0	A
Madagascar	490	2 800	27	D
Malawi	560	2 700	20	D
Malaysia – Malaisie	80	440	270	B
Maldives[a]				

Table 1 *(continued)*

Tableau 1 *(suite)*

Mali	1 200	5 700	10	E
Malta – Malte	0	0	0	A
Marshall Islands – Iles Marshall[a]				
Martinique[a]				
Mauritania – Mauritanie	930	750	16	E
Mauritius – Maurice	120	25	300	B
Mexico – Mexique	110	2 700	220	B
Micronesia Federal States – Micronésie (Etats fédérés de)[a]				
Mongolia – Mongolie	65	45	310	B
Montserrat[a]				
Morocco – Maroc	610	4 500	33	D
Mozambique	1 500	9 800	9	E
Myanmar	580	8 100	33	E
Namibia – Namibie	370	190	42	D
Nepal – Népal	1 500	11 000	10	E
Netherlands – Pays-Bas	12	25	4 300	A
Netherlands Antilles – Antilles néerlandaises[a]				
New Caledonia – Nouvelle-Calédonie[a]				
New Zealand – Nouvelle-Zélande	26	15	1 600	A
Nicaragua	160	250	100	C
Niger	1 200	5 100	9	D
Nigeria – Nigéria	1 000	44 000	13	E
Norway – Norvège	6	5	7 300	A
Oman	190	150	60	E
Pakistan	340	18 000	38	E
Palau – Palaos[a]				
Panama	55	35	510	B
Papua New Guinea – Papouasie-Nouvelle-Guinée	930	1 200	17	E
Paraguay	160	240	120	E
Peru – Pérou	280	1 700	85	E
Philippines	280	5 400	75	D
Poland – Pologne	19	100	2 200	A
Portugal	15	20	3 500	A
Puerto Rico – Porto Rico[a]				
Qatar[a]				
Republic of Korea – République de Corée	130	900	380	B
Republic of Moldova – République de Moldova	60	50	580	A
Reunion – Réunion[a]				
Romania – Roumanie	130	410	340	A
Russian Federation – Fédération de Russie	75	1 500	620	A
Rwanda	1 300	4 000	9	E
Saint Kitts and Nevis – Saint-Kitts-et-Nevis[a]				
Saint Lucia – Sainte-Lucie [a]				
Saint Vincent and the Grenadines – Saint-Vincent-et-les-Grenadines[a]				
Samoa	35	5	500	E
São Tome and Principe – São Tomé-et-Principe[a]				
Saudi Arabia – Arabie saoudite	130	730	95	E
Senegal – Sénégal	1 200	3 900	11	D
Seychelles[a]				
Sierra Leone	1 800	3 600	7	E
Singapore – Singapour	10	5	4 900	A
Slovakia – Slovaquie[a]				
Slovenia – Slovénie	13	5	4 000	A
Solomon Islands – Iles Salomon[a]				
Somalia – Somalie	1 600	7 000	7	E
South Africa – Afrique du Sud	230	2 700	85	E
Spain – Espagne	7	30	9 200	A
Sri Lanka	140	520	230	B
Sudan – Soudan	660	6 600	21	E

Table 1 *(continued)*

Tableau 1 *(suite)*

Suriname[a]				
Swaziland	560	160	29	E
Sweden – Suède	7	10	6 000	A
Switzerland – Suisse	6	5	8 700	A
Syrian Arab Republic – République arabe syrienne	180	950	75	C
Tajikistan – Tadjikistan	130	270	120	A
Former Yugoslav Republic of Macedonia – Ex-République yougoslave de Macédoine[a]				
Thailand – Thaïlande	200	2 300	180	E
Togo	640	1 000	20	E
Tonga[a]				
Trinidad and Tobago – Trinité-et-Tobago	90	25	360	B
Tunisia – Tunisie	170	380	140	E
Turkey – Turquie	180	3 000	130	C
Turkmenistan – Turkménistan	55	70	350	A
Turks and Caicos Islands – Iles turques et Caïques[a]				
Tuvalu[a]				
Uganda – Ouganda	1 200	11 000	10	E
Ukraine	50	320	930	A
United Arab Emirates – Emirats arabes unis	26	10	730	E
United Kingdom of Great Britain and Northern Ireland – Royaume-Uni de Grande-Bretagne et d'Irlande du Nord	9	70	5 100	A
United Republic of Tanzania – République-Unie de Tanzanie	770	8 700	18	E
United States of America – Etats-Unis d'Amérique	12	480	3 500	A
Uruguay	85	45	410	B
Uzbekistan – Ouzbékistan	55	380	370	A
Vanuatu	280	15	60	E
Venezuela	120	680	200	B
Viet Nam	160	3 300	130	E
Yemen – Yémen	1 400	8 100	8	E
Yugoslavia – Yougoslavie[a]				
Zaire – Zaïre	870	16 000	14	E
Zambia – Zambie	940	3 500	14	E
Zimbabwe	570	2 300	28	E

[a] For these countries it was not possible to calculate maternal mortality ratios using this methodology in the absence of independent variables. – Pour ces pays, il n'a pas été possible de calculer les rapports de mortalité maternelle à l'aide de cette méthode à cause de l'absence de variables indépendantes.
[b] Categories explained in text. – Les catégories sont définies dans le texte.

Sources: World Health Organization and United Nations Children's Fund. *Revised 1990 estimates of maternal mortality: a new approach by WHO and UNICEF*. Geneva & New York, 1996 (WHO/FHE/MSM/94.11 – UNICEF/PLN/96.1).

of the problem of maternal mortality. The estimates should be taken as indicating orders of magnitude rather than precise estimates and are not necessarily what governments consider most appropriate. The standard errors associated with the predicted maternal mortality ratios are very large. They cannot, therefore, be used for regular monitoring of trends. The figures pertain to the year 1990 and should be seen as a recalculation of the earlier 1991 revision rather than as indicative of trends since then.

The results for each country should serve as a stimulus to action and to help mobilize national and external resources to this end. The nature of such action will be determined in large measure by the social and economic conditions of the country but must include increased access to high quality care during pregnancy and childbirth for all women.

Other ways of monitoring trends in maternal mortality

Where current vital registration systems underestimate maternal mortality due to misclassification of maternal deaths, there is room for improvement through the establishment of a system of confidential inquiries which not only result in better estimation of the dimensions of the problem but also, in so far as they identify the causes of misclassification and analyze the management of each case, lead directly to improvements in case management and reductions in substandard care *(11)*.

National-level confidential enquiries are primarily of value in settings where the majority of deaths of women of reproductive age are officially registered. Where this is not the case, similar approaches can be used at the facility level to gener-

Table 2
Revised estimates of maternal mortality by United Nations regions (1990)

Tableau 2
Estimations révisées de la mortalité maternelle selon les régions des Nations Unies (1990)

	Maternal mortality ratio (maternal deaths per 100 000 live births) – Taux de mortalité maternelle (décès maternels pour 100 000naissances vivantes)	Number of maternal deaths – Nombre de décès maternels	Lifetime risk of maternal death, 1 in: – Risque de décès maternel sur la vie entière, 1 sur :
World total – Total mondial	430	585 000	60
More developed regions – Régions plus développées[a]	27	4 000	1 800
Less developed regions – Régions moins développées	480	582 000	48
Africa – Afrique	870	235 000	16
Eastern Africa – Afrique orientale	1 060	97 000	12
Middle Africa – Afrique centrale	950	31 000	14
Northern Africa – Afrique septentrionale	340	16 000	55
Southern Africa – Afrique australe	260	3 600	75
Western Africa – Afrique occidentale	1 020	87 000	12
Asia – Asie[a]	390	323 000	65
Eastern Asia – Asie orientale	95	24 000	410
South-central Asia – Asie méridionale et australe	560	227 000	35
South-eastern Asia – Asie du Sud-Est	440	56 000	55
Western Asia – Asie occidentale	320	16 000	55
Europe – Europe	36	3 200	1 400
Eastern Europe – Europe orientale	62	2 500	730
Northern Europe – Europe septentrionale	11	140	4 000
Southern Europe – Europe méridionale	14	220	4 000
Western Europe – Europe occidentale	17	350	3 200
Latin America & the Caribbean – Amérique latine et Caraïbes	190	23 000	130
Caribbean – Caraïbes	400	3 200	75
Central America – Amérique centrale	140	4 700	170
South America – Amérique du Sud	200	15 000	140
North America – Amérique du Nord	11	500	3 700
Oceania – Océanie[a]	680	1 400	26
Australia & New Zealand – Australie & Nouvelle-Zélande	10	40	3 600
Melanesia – Mélanésie	810	1 400	21

[a] Australia, New Zealand and Japan have been excluded from the regional totals but are included in the total for developed countries. – L'Australie, la Nouvelle-Zélande et le Japon sont exclus des totaux régionaux mais inclus dans le total des pays développés.

Note: Figures may not add to totals due to rounding. – Il se peut que le total ne corresponde pas tout à fait aux chiffres donnés, ceux-ci étant arrondis.
Source: World Health Organization and United Nations Children's Fund. *Revised 1990 estimates of maternal mortality: a new approach by WHO and UNICEF.* Geneva & New York, 1996 (WHO/FHE/MSM/94.11 – UNICEF/PLN/96.1).

ate valuable information about the causes and circumstances of maternal deaths. Facility-level audits of maternal deaths can be used to identify health service factors associated with each death and to determine to what extent each death could have been avoided. Tracing the route taken by the deceased woman prior to arrival at the facility offers clues about possible physical, sociocultural and economic barriers that impede access to appropriate care in a timely manner. Such studies are essentially qualitative in nature and do not provide estimates of levels of maternal mortality. Nonetheless, they can lead directly to improvements in service delivery and to efforts to remove barriers to care. WHO has developed a guide describing this process in some detail.[k]

To permit countries without a vital registration system to monitor trends, UNICEF and WHO propose process indicators which describe the causal

[k] Ireland, J. & Graham, W. *Conducting a case review of maternal deaths (draft for field testing).* World Health Organization, May 1996.

Table 3
Maternal mortality – New regional estimates compared with previous estimates

Tableau 3
Mortalité maternelle – Nouvelles estimations régionales comparées aux estimations précédentes

UN Region – Région des Nations Unies	Maternal mortality ratio (Maternal deaths per 100 000 live births) – Taux de mortalité maternelle (décès maternels pour 100 000 naissances vivantes)	Maternal mortality ratio (Maternal deaths per 100 000 live births) – Taux de mortalité maternelle (décès maternels pour 100 000 naissances vivantes)	Maternal deaths (000s) – Décès maternels (pour 1 000)	Maternal deaths (000s) – Décès maternels (pour 1 000)
	Old estimates – Anciennes estimations	New estimates – Nouvelles estimations	Old estimates – Anciennes estimations	New estimates – Nouvelles estimations
WORLD – MONDE	370	430	509	585
MORE DEVELOPED REGIONS – RÉGIONS PLUS DÉVELOPPÉES	26	27	4	4
LESS DEVELOPED REGIONS – RÉGIONS MOINS DÉVELOPPÉES	420	480	505	582
AFRICA – AFRIQUE	630	870	169	235
Eastern Africa – Afrique orientale	680	1060	60	97
Middle Africa – Afrique centrale	710	950	21	31
Northern Africa – Afrique septentrionale	360	340	17	16
Southern Africa – Afrique australe	270	260	4	3.6
Western Africa – Afrique occidentale	760	1020	66	87
ASIA – ASIE[a]	380	390	310	323
Eastern Asia – Asie orientale[a]	120	95	30	24
South-central Asia – Asie méridionale et centrale	(570)[b]	560	(224)[b]	227
South-eastern Asia – Asie du Sud-Est	340	440	42	56
Western Asia – Asie occidentale	280	320	12	16
EUROPE	(23)[b]	36	(1)[b]	3.2
LATIN AMERICA/ CARIBBEAN – AMÉRIQUE LATINE/CARAÏBES	200	190	25	23
Caribbean – Caraïbes	260	400	2	3.2
Central America – Amérique centrale	160	140	6	4.7
South America – Amérique du Sud	220	200	17	15
NORTH AMERICA – AMÉRIQUE DU NORD	12	11	1	0.5
OCEANIA – OCÉANIE[c]	600	680	1	1.4

[a] Excluding Japan. – A l'exclusion du Japon.
[b] Direct comparisons are not possible because of the redistribution of parts of the former USSR between the two regions. – Les comparaisons directes sont impossibles à cause de la répartition de certaines parties de l'ancienne URSS entre les deux régions.
[c] Excluding Australia and New Zealand – A l'exclusion de l'Australie et de la Nouvelle-Zélande.

Note: Figures may not add to totals due to rounding. – Il se peut que le total ne corresponde pas tout à fait aux chiffres donnés, ceux-ci étant arrondis.

Sources: World Health Organization. *Maternal mortality ratios and rates: a tabulation of available information.* Third edition. WHO/MCH/MSM/91.6.
World Health Organization and United Nations Children's Fund. *Revised 1990 estimates of maternal mortality: a new approach by WHO and UNICEF.* Geneva & New York, 1996 (WHO/FHE/MSM/94.11 – UNICEF/PLN/96.1).

pathways leading to maternal deaths and examine the coverage and quality of services for the management of obstetric complications.[1] Process indicators can help to identify the most appropriate mix of interventions and to assess progress towards improved coverage and quality of care.

The use of process indicators does not imply the abandonment of efforts to measure impact, that is, maternal mortality ratios. However, it is unrealistic to expect that all countries will be able to establish the kind of ongoing monitoring systems needed for a regular appraisal of maternal mortality. Nor would it be appropriate to direct scarce resources to such

[1] UNICEF & World Health Organization. *Maternal mortality: guidelines for monitoring progress (draft)*, 1996.

an undertaking at the expense of programmes to deal with the problem at its source.

Implications for the future

Despite its limitations in terms of monitoring, this approach represents a substantial improvement on earlier efforts to estimate maternal mortality at regional and global levels, but more particularly at the national level. At regular intervals, WHO and UNICEF will update and expand the data set and re-estimate maternal mortality.

The use of such strategies to estimate maternal mortality is a short-term solution to the problem of measurement. In the long term, accurate information about maternal mortality is dependent on improvements in vital registration systems and their incorporation into all national health information systems. This must be the ultimate objective of all national authorities and of multilateral and bilateral development agencies.

In the meantime, the information now available on probable levels of maternal mortality *(Table 2)* should serve to stimulate greater action on the part of national authorities and international assistance agencies to reduce the toll of disease, death and disability associated with pregnancy and childbirth.

Summary

A new approach to measuring maternal mortality indicates that there are some 585 000 maternal deaths, 99% of them in developing countries. This is around 80 000 deaths more than earlier estimates have suggested and indicates a substantial underestimation of maternal mortality in the past. There is a greater disparity in levels of maternal mortality between industrialized and developing countries than in any other public health indicator While significant progress has been made in reducing infant mortality, the same is not true for maternal mortality. Although the actions needed to reduce maternal mortality have long been known, 1 woman in 50 is still dying as a result of pregnancy-related complications and the figure rises to 1 in 10 in many parts of Africa. By contrast, the figure for developed countries can be as low as 1 in 8 000.

Résumé

Mortalité maternelle

Une nouvelle approche de la mesure de la mortalité maternelle indique qu'il y a environ 585 000 décès maternels, dont 99% dans les pays en développement. On compte donc environ 80 000 décès de plus que le nombre suggéré par les estimations précédentes, ce qui indique que l'on a sous-estimé considérablement la mortalité maternelle dans le passé. L'écart est plus important dans les niveaux de mortalité maternelle entre les pays industrialisés et les pays en développement que dans tout autre indicateur de santé publique. On a réalisé des progrès considérables concernant la réduction de la mortalité infantile, mais cela n'est pas vrai en ce qui concerne la mortalité maternelle. Bien que l'on sache comment réduire la mortalité maternelle depuis longtemps, 1 femme sur 50 meurt encore de complications liées à la grossesse, et ce chiffre passe à 1 sur 10 dans de nombreuses régions d'Afrique. Par contre, le chiffre relatif aux pays développés est bas et n'est parfois que de 1 sur 8 000.

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