

# STRATEGY TO REDUCE MATERNAL DEATHS





East Asia & Pacific Regional Office  
Health and Nutrition Working Paper



# Strategy to Reduce Maternal Deaths

East Asia & Pacific Regional Office  
Health and Nutrition Working Paper

## *Strategy to Reduce Maternal Deaths*

Copyright: The United Nations Children's Fund (UNICEF)  
East Asia and Pacific Regional Office, 2003

Report prepared by Dr. Stephen J. Atwood, Regional Advisor, Health and Nutrition, and Karen Codling, Regional Project Officer, Nutrition, in consultation with UNICEF Headquarters in New York and the East Asia and Pacific regional health, nutrition, water and sanitation staff.

ISBN: 974-685-036-9

UNICEF East Asia and Pacific Regional Office  
19 Phra Atit Road  
Bangkok 10200  
Email: [eapro@unicef.org](mailto:eapro@unicef.org)

# CONTENTS

Abbreviations	
Background	1
Regional Perspective	2
Non-preventable and preventable causes of maternal deaths	
Regional response to the causes of maternal death	
Regional approaches	
Lessons from Malaysia's success story	
Goal and Objectives	7
Overall goal	
Interim objectives over the next five years	
Strategy	7
Improving access to and utilisation of existing EmOC facilities	
Improving access to preventive and promotive care	
Linkages	
Monitoring and Evaluation	10
Monitoring	
Evaluation	
Scope	12
Programme Management	12

## ABBREVIATIONS

CO	country office (UNICEF)
EAPR	East Asia and Pacific Region
EmOC	Emergency Obstetric Care
HIV/AIDS	human immunodeficiency virus / acquired immune deficiency syndrome
HW	health workers
LBW	low birth weight
MDG	Millennium Development Goals
MMR	maternal mortality ratio
PMTCT	prevention of mother to child transmission
PRS	poverty reduction strategy
PRSP	poverty reduction strategy paper
RBM	Roll Back Malaria Initiative
SM	safe motherhood
STD	sexually transmitted diseases
SWAP	sector-wide approaches
TBA	traditional birth attendant
UNICEF	United Nations Children's Fund
WHO	World Health Organization

# STRATEGY TO REDUCE MATERNAL DEATHS

## Abstract

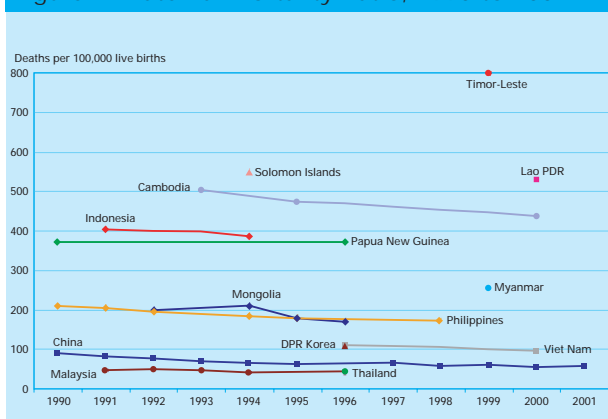
In the East Asia and Pacific Region, maternal mortality ratios in most countries have been unchanged over the past decade. The same is true for levels of malnutrition reflected in unchanging levels of underweight in children, short stature in women and anaemia throughout the population, particularly in pregnant women. These problems are not parallel but inextricably linked by intergenerational patterns of neglect of both women's access to health services and to adequate nutrition and care. This strategy outlines an approach to lowering both maternal mortality ratios and maternal and child undernutrition by increasing access to existing Emergency Obstetric Care Facilities, and by targeting the smaller but substantial number of preventable causes of maternal death and disability. Measures are described to prevent and treat nutritional and other basic health problems like anaemia, malaria, tuberculosis, urinary tract infections, etc. The focus of this new strategy is on the pre-pregnant woman, as it is believed that the impact of previous interventions has been blunted by reaching the woman too late in pregnancy.

## BACKGROUND

The disparity between the developed and developing world is no more starkly represented than in the ratio of women who die from pregnancy-related complications. The lifetime risk of dying due to pregnancy for a woman in the developing world can be as much as thirty times more than for a woman in the developed world.<sup>1</sup> Added to this in the East Asia and Pacific Region (EAPR) has been the stubborn persistence of malnutrition reflected in unchanging levels of underweight status in children, short stature in women, and anaemia throughout the population, particularly in pregnant women. This is not coincidental. These problems are not parallel but inextricably linked by intergenerational patterns of neglect of both women's access to health services and to adequate nutrition and care.

A call for change is mandated by the Millennium Development Goal (MDG) that specifies a reduction by 75 per cent of 1990 maternal mortality ratios (MMRs) by 2015. Prioritisation of this goal is the result of (i) the virtually unchanged status of both high MMR and malnutrition rates in the Region over the past decade; (ii) the significant displacement of children's and women's rights

Figure 1: Maternal Mortality Ratio, 1990 to 2001

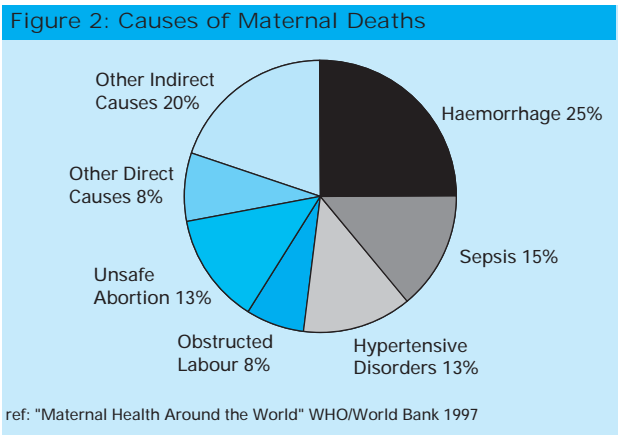


<sup>1</sup> In countries where the Maternal Mortality Ratio (MMR) is 500/100,000 live births, the lifetime risk of dying for a first pregnancy is 1 in 200; in countries where the MMR is 15/100,000 live births, the risk is 1 in 6,400.

that both malnutrition and a high mortality represent; (iii) the profound effect of high maternal mortality and malnutrition on early childhood survival, growth and development, (iv) the fertile ground that each problem offers for the growth of global neo-epidemics (e.g., HIV/AIDS, exploitation of orphaned children, tuberculosis) and the persistence of poverty and inequity.

Both maternal deaths and undernutrition<sup>2</sup> are recognized as outcomes as well as causes of poverty. Their sustained prevalence in the East Asia and Pacific Region, despite substantial advances in social and economic development, reflects the unevenness of that prosperity and the persistence of pockets of underserved populations. They are also a reminder that economic development alone may not automatically lead to improvement of the place and position of women in society, nor of their or their children's nutrition.

The statistics in EAPR illustrate the inequality that exists between countries (i.e., the poorest countries have the most malnutrition and the highest MMRs) and within countries where national data may not accurately describe the situation. The financial benefits to the upper classes do not necessarily trickle down to the poor, and in the pockets of poor populations undernutrition and maternal deaths are most prevalent.



The poor economic and social status of women, even in more affluent countries, is a major underlying factor in the causal framework of these problems. Persistently high maternal mortality ratios, elevated fertility rates and accompanying figures for maternal anaemia are indicators of inequity in women's social status reflected through poor access to nutrition and health facilities and lack of choices and resources. Furthermore, the disturbing intimations of frequent

adolescent pregnancies and pre-marital sexual encounters among the young add to the incidence of death and complications related to unsafe abortions. These are estimated to be responsible for as many as 13 per cent of pregnancy-related deaths, although because of underreporting of deaths in early pregnancy this is likely a sizeable underestimation. In one study, deaths from unsafe abortion were reported to be responsible for as many as 20 to 40 per cent of all maternal deaths.<sup>3</sup>

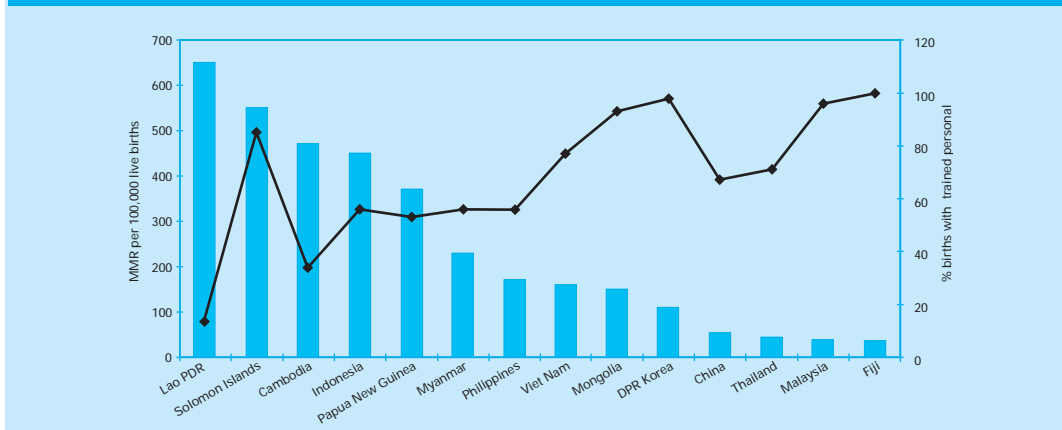
## REGIONAL PERSPECTIVE

### Non-preventable and preventable causes of maternal deaths

The causes of maternal deaths in East Asia are essentially the same as those known worldwide, although some inter-country variation in percentages exists. These may be divided into two groups:

<sup>2</sup> Malnutrition is taken to reflect both under- and overnutrition. In this strategy, only undernutrition is being addressed.  
<sup>3</sup> Rosenfield, A., RU-486 and the politics of reproduction, *Female patient*, 14 (3), 1989, pp. 69, 73-4.

Figure 3: MMR related to Skilled Attendance at Birth

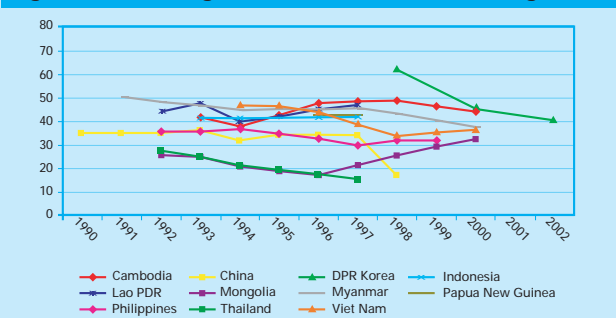


Group 1 represents the majority that are neither predictable nor preventable. This includes haemorrhage, sepsis, hypertensive disorders, and obstructed labour. Successful and safe management depends on the presence of skilled attendants at birth to diagnose these conditions quickly and intervene in a way that will stabilise the patient in order to safely reach a facility where she can receive basic or comprehensive Emergency Obstetric Care (EmOC).

Group 2 is smaller, made up 'indirect causes' which may be preventable, predictable and treatable with an improved focus on health care delivery and nutrition of pregnant and pre-pregnant women. These include severe and possibly moderate anaemia, malaria, tuberculosis, HIV and other sexually transmitted diseases. UNICEF EAPRO has chosen to include complications of abortion and unwanted pregnancies in this group to underscore the importance of prevention of unintended pregnancies<sup>4</sup>. Associated with these indirect causes are other micronutrient deficiencies, most notably vitamin A<sup>5</sup>. There is also growing evidence supporting the role of aspirin, and vitamins C and E and other antioxidants in the prevention of pre-eclampsia by as much as 50 per cent.<sup>6</sup>

Severe stunting (maternal height <150 cm) is also associated with an increased number of operative deliveries<sup>7</sup> and may have an intergenerational effect on obstructed labour. Short stature is the result of many factors: undernutrition in the first and second trimester of pregnancy, inadequate postnatal feeding practices, and, perhaps

Figure 4: Stunting in the East Asia Pacific Region



<sup>4</sup> Rahman, M. and DaVanzo, J., Do better family planning services reduce abortion in Bangladesh?, *The Lancet* v.358, Sept 29, 2001, pp. 1051-1055.

<sup>5</sup> West, K. P., Katz, J., et al., Double blind, cluster randomised trial of low dose supplementation with Vitamin A or B carotene on mortality related to pregnancy in Nepal, *British Medical Journal*, 218, 27 Feb 2003, pp.570-575.

<sup>6</sup> Shennan, A. H., Recent developments in obstetrics, *British Medical Journal*, 327, 13 Sept 2003, pp. 604-8.

<sup>7</sup> Rush, D., Nutrition and maternal mortality in the developing world, *American Journal of Clinical Nutrition*, 72 (1 suppl), July 2000, pp. 212S-240S.

most importantly, pregnancy in adolescence before the girl has finished her own growth<sup>8</sup>. Therefore, stunting – associated in Group 1 with the direct cause of death through obstructed labour – may eventually be affected by preventive interventions.

As can be seen from *figure 2*, the ‘unpredictable’ causes of death (Group 1) account for approximately 60-70 per cent of deaths, while the ‘predictable’ (Group 2) causes may account for as much as 33 per cent of deaths if abortion is viewed as preventable. In addition, if anaemia prevention can reduce death from haemorrhage, if intergenerational correction of stunting can lead to fewer obstructed pregnancies<sup>9</sup> and if certain micronutrients can reduce pre-eclampsia and post-partum sepsis, then the percentage of preventable causes of maternal deaths will certainly increase.

## Regional response to the causes of maternal death

### Group 1: Access to emergency obstetric care

Access to EmOC is the most effective way to respond to the complications that are a part of Group 1. EmOC access in the region is uneven and, in many instances, unmeasured. As a proxy, attempts have been made to measure the percentage of births performed by a skilled attendant, although the definition of ‘skilled’ is not always clear or consistent. The strong inverse association between skilled attendants at birth and MMR is shown in *figure 3*.

Country-specific information provides some insights into the problems related to EmOC. In Indonesia, EmOC facilities exist in nearly every district headquarters, yet staffing by surgeons and anaesthesiologists in some districts is absent. This lack of service quality as well as lapses in supplies of drugs and other essential equipment push down utilization rates of all facilities as the public loses faith in the health care delivery system. As a result, utilization of even those facilities capable of providing emergency obstetric care falls below the expected percentage of complicated deliveries.

### Group 2: Access to promotive and preventive care

Although there have been major improvements in many health and social indicators in the past ten years across the East Asia and the Pacific Region, three remain unacceptably high: maternal anaemia, undernutrition (including stunting), and malaria. In addition, fertility rates – particularly in countries with the highest MMRs – remain very high. Each of these problems is interrelated and linked to lack of access to promotive, preventive and curative care before, during and after pregnancy.

In this region, the countries with the highest measured MMRs (i.e., Timor-Leste, Lao PDR, Cambodia, Papua New Guinea, Indonesia) also have high rates of maternal anaemia (*figure 5*), although disaggregated data showing degrees of anaemia through measured haemoglobin levels are not available in all countries. These data may be found in some countries where demographic health surveys or other special surveys have been done. For example, in Cambodia, the CDHS 2000 indicates that the percentage of pregnant women with anaemia is 66.4 per cent out of which 4.3 per cent are severe (less than 7.0g/dl) and 35.2 per cent moderate (7.0-9.9g/dl). Similarly, in Indonesia indicators for anaemia and malaria are significantly higher in Papua (similar to those in Papua New Guinea – see *figures 5 and 6*) and other eastern provinces. These levels may not be reflected in national statistics.

<sup>8</sup> UNICEF EAPRO, *Strategy to Reduce Maternal and Child Undernutrition*, 10 Oct 2003.

<sup>9</sup> Konje, J. C. and Ladipo, O. A., *Nutrition and obstructed labor*, *American Journal Clinical Nutrition*, 72 (1 suppl), Jul 2000, pp. 291S-297S.

Severe maternal anaemia, which can be related to lack of iron, vitamin A, or Vitamin C, lack of health services to treat underlying diseases, and frequent and closely spaced pregnancies, is associated with an increase in maternal deaths,<sup>10</sup> a higher incidence of low birth weight, and increased preterm deliveries and perinatal mortality.<sup>11,12</sup> Anaemia may be associated with a greater risk of dying from either infection or postnatal haemorrhage.<sup>13</sup>

**Figure 5: MMR Maternal Anaemia**

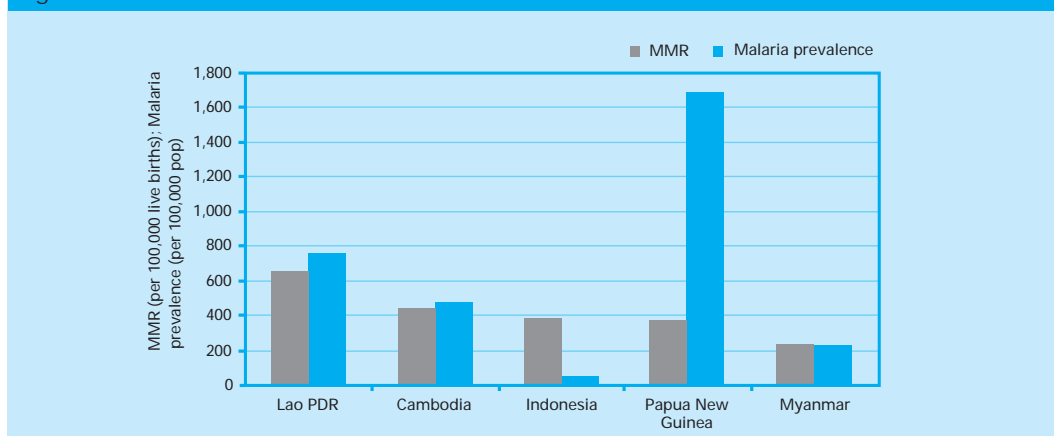
Country	MMR	maternal anaemia(%)	Date
Timor-Leste	800	66(T)*	'99/91'
Lao PDR	560	62(T)*	'00/99
Cambodia	437	66	'00/00
Papua New Guinea	370	33	'96/99
Indonesia	334	51	'97/95
Myanmar	230	58	'94/95
Philippines	170	51	'97/98
Mongolia	150	45(T)*	'97/99
Viet Nam	110	44	'96/00
DPR Korea	110	35	'96/98
China	74	42	'98/99

\* (T) designates Total anaemia where Pregnancy is not disaggregated  
 † Data year MMR/ Data year Anaemia

Malaria is also a major and persistent public health problem in the region and contributes to anaemia in pregnancy, maternal mortality, low birth weight and increased perinatal mortality through the mechanisms of blood loss and obstruction of placental arterioles. In Cambodia and Lao PDR, prevalence estimates are between 5 to 7 per 1,000 population, and in Myanmar, the estimate is 57 per 1,000.<sup>14</sup> Malaria is both more common and more dangerous for pregnant women<sup>15</sup> through direct intensification of the disease as a result of reduced immunity in pregnancy and through the development of a more severe degree of anaemia.

The high fertility rates found in the region result from frequent and closely spaced pregnancies, which may lead to iron, calcium and other nutrient deficiencies due to maternal depletion. Although the number of pregnancies does not directly influence the

**Figure 6: MMR and Malaria Prevalence**



<sup>10</sup> Yip, R., Significance of an abnormally low or high haemoglobin concentration during pregnancy: special consideration of iron nutrition, *American Journal of Clinical Nutrition*, 72 (suppl), 2000, pp. 272S-9S. 2000

<sup>11</sup> Allen, L., Biological Mechanisms that might underlie iron's effects on fetal growth and preterm birth, *Journal of Nutrition*, 131, 2002, pp. 581S-589S.

<sup>12</sup> Rush, D. op. cit.

<sup>13</sup> Allen, L. op. cit.

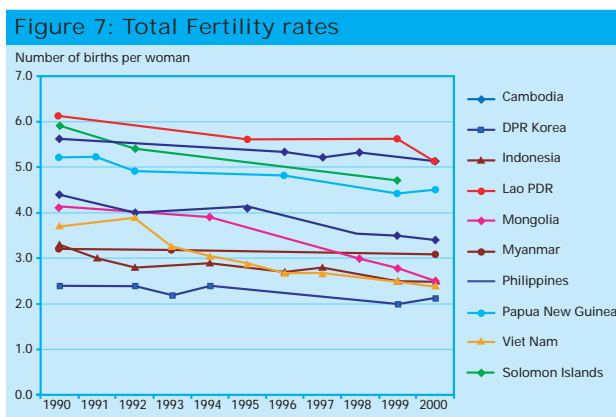
<sup>14</sup> Only 5 per cent of the population lives in the remote forested areas in Cambodia in which malaria is endemic, but an estimated 17 per cent of the population is forest-dependent for additional income, thus being at risk. An estimated 600,000 inhabitants live in these endemic areas where pregnant women and children are primarily at risk.

<sup>15</sup> Ansell, J., Hamilton, K. A., et al. Short-range attractiveness of pregnant women to *Anopheles gambiae* mosquitoes, *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 96, 2002, pp. 113-116.

MMR (the denominator is a fixed number of live births), decreasing the number of pregnancies (particularly those that are unwanted) will reduce the risk of maternal deaths, and can reduce complications of haemorrhage and infection associated with unsafe abortion.

Underlying all these causes is the place and position of the woman in society. Gender issues influence women's nutrition, her access to health care, and her ability to care for herself and her children. Markers of gender inequality found in this region include low enrolment of girls in secondary schools and few women in senior ministerial positions, as well as high fertility rates, rising rates of HIV/AIDS and STDs in married (as well as unmarried) women, and high rates of female anaemia. Cases of violence against pregnant women are being documented with greater frequency. In South Asia, violence against pregnant women accounts for 15 per cent of all maternal deaths.<sup>16</sup>

## Regional approaches



A brief review of safe motherhood programmes in the region indicates that the training of traditional birth attendants (TBAs) to identify high risk patients and to practice clean deliveries remains among the most frequently implemented, and often requested by national governments for assistance by UNICEF. This is despite evidence of a lack of effectiveness of TBA training as it has been practiced over the past decade.

Changes are, however, occurring in the Asian region. In Malaysia and China growing attention is being paid to the early identification of complications (e.g., bleeding, high blood pressure or seizures) and to referral to a hospital or clinic for basic or comprehensive EmOC. The correlation shown in *figure 3* between a lower MMR and an increased number of births attended by 'skilled attendants' has reinforced the shift toward the training of 'skilled attendants,' defined as doctors and midwives.

## Lessons from Malaysia's success story

Malaysia's remarkable success in reducing MMR was the result of a multi-faceted, but basically two-step process. The first step was to train nurse-midwives for community- and home-based deliveries, and to gradually move people away from their focus on traditional but untrained birth attendants. This step was accompanied by a focus on improved quality of services throughout the system, the use of maternal mortality audits, an increase in the number of facilities, the implementation of a mobile team approach for outlying regions and a focus on reduction of deaths caused by malaria. These approaches led to a reduction of MMR from approximately 240 per 100,000 live births in 1960, to approximately 50 per 100,000 live births by 1985. Of note is that this remarkable drop was accomplished with only 17 to 18 per cent of deliveries being done

<sup>16</sup> WHO SEARO, Part I – Women's Health Status, Chapter 3: Reproductive Health, *Women's Health in South East Asia*. 27 Feb 2001.

in a hospital. The second step was to increase the number of institutional deliveries. From 1986 onward, the doctor-patient ratio improved from 1:11,000 to 1:2,000, and the number of hospital beds in the private and public sector increased by 8 per cent. This led to an increase in institutional deliveries from 18 per cent to 81 per cent in ten years, and a drop in MMR from 80 to approximately 40 over the same time.<sup>17</sup>

Solutions and approaches to the problem will change as the situation improves. The strategies necessary to reduce mortality to below 100 per 100,000 live births will need review and revision in order to lead to further reduction. Countries unable to afford full, nationwide coverage of comprehensive EmOC can still reduce maternal mortality by increasing access to skilled attendants, increasing the use of existing facilities and deploying preventive measures in nutrition and basic health care. But, it must be stressed that this is a temporary solution to a problem that will not be solved until political will and adequate resources are dedicated to its solution.

## GOAL AND OBJECTIVES

### Overall goal

Reduce the maternal mortality ratio by three quarters between 1990 and 2015. [Millennium Development Goal 5]

### Interim objectives over the next five years

1. Increase percentage of births attended by skilled attendants.<sup>18</sup>
2. Increase the *met need*<sup>19</sup> in comprehensive EmOC facilities.
3. Decrease the rate of maternal anaemia.

## STRATEGY

The strategy for achieving these objectives has two components: one directed at Group 1, the unpredictable and unpreventable causes of maternal deaths, and the other directed at Group 2, the preventable causes of maternal deaths. The first component aims to improve access to and use of existing EmOC facilities for managing complications in the prenatal, perinatal postnatal, and post-natal periods. The second component is directed at guaranteeing that a woman entering pregnancy and throughout pregnancy is healthy and well-nourished through the provision of a package of diagnostic, therapeutic and preventive services.

### Improving access to and utilization of existing EmOC facilities

The importance of comprehensive Emergency Obstetric Care<sup>20</sup> is acknowledged as the

<sup>17</sup> Public Health Department, Ministry of Health, Government of Malaysia.

<sup>18</sup> Defined as "Percentage of births attended by physicians, nurses, midwives, or primary health care workers trained in midwifery skills. (WSC), or Proportion of births attended by skilled health personnel (doctor, nurse or midwife). (WFFC), and measured as *Childbirth Care in ChildInfo*.

<sup>19</sup> *Met need* is calculated as the number of women with complications of pregnancy treated in an EmOC facility, over a denominator of the expected number of births per year multiplied by 15 per cent, which is the rate of expected complications.

<sup>20</sup> Emergency Obstetric Care is divided into *basic* (able to give injectable antibiotics, oxytocics, and anticonvulsants; able to manually remove the placenta and retained products; and to perform a forceps or vacuum assisted delivery) and *comprehensive* (all of the above plus surgery, i.e., Caesarean section and blood transfusion).

Figure 8: Average Time 'til Death	
Complication	Average time 'til death
Ante-partum haemorrhage	12 hours
Post-partum haemorrhage	2 hours*
Ruptured uterus	1 day
Eclampsia	2 days
Obstructed labour	3 days
Puerperal sepsis	6 days

centre-piece of any maternal mortality reduction programme. The focus of the UNICEF Regional Strategy will be on increasing the use of facilities already in place or that can be made functional with minimum inputs. At the onset, it will be necessary to aggregate and analyse all information derived from facility surveys done in

each country in order to identify those facilities that are or could be easily improved to provide EmOC. A '5-hour radius' can be drawn around each functional facility to define the locus of interventions. The purpose will be to ensure that within that radius, every woman with a pregnancy complication is well managed by a skilled attendant or successfully referred to an EmOC facility. This will require training and equipping skilled attendants at the periphery to deal with complications so that each woman can be stabilized when necessary in order to reach an EmOC facility safely.

It will also require intensive advocacy to encourage governments and donors to bring additional EmOC facilities 'on-line'.

Among the tasks faced in making the '5-hour radius' succeed will be intensive investigation of ways to overcome the financial barriers that keep poor people from accessing health care. This will require dialogue with government, donors and community organizations involved in poverty reduction programmes, SWAPs, subsidized delivery systems, pre-paid schemes, etc. Specific attention will be paid to transportation, birthing homes or other solutions to improving the affordability of health care use.

This strategy is directed at an active reduction of the first two of the 'three delays' in receiving adequate care.<sup>21</sup> The improvement of the third delay, in particular, will require active partnership with other agencies and organisations (e.g., WHO) better suited to setting, monitoring and implementing national standards of care in hospitals.

#### The 5-hour radius

The average time from the onset of complications until death is given in *figure 8*. If community midwives and health workers have training and supplies, and are politically, legally and socially empowered to do so, they can institute measures that will ensure the critically ill woman additional hours to reach the facility where life saving therapy can be provided. These extra hours define the '5-hour radius' (rather than 2 hours) around the facility.

This would be an effective strategy in countries with few EmOC facilities, since special attention could be given to increasing the access of pregnant women to EmOC in the 5-hour radius around an existing facility and to increasing institutional deliveries in general. In either case, attention would still be required to reducing unmet needs, to training of community midwives, and to diagnosis and treatment of intercurrent illnesses in pregnancy.

<sup>21</sup> Delay 1: decision to seek care; Delay 2: time to reach care facility; Delay 3: time to be appropriately treated once in facility.

## Improving access to preventive and promotive care

The focus of this component of the strategy is on reaching women before they become pregnant or as early into their pregnancy as possible in order to diagnose, treat or prevent the conditions that are known to be associated with increased maternal mortality.

Because so many of these conditions are either caused by or mediated through nutritional deficiencies, this part of the strategy is integrated with the Regional Strategy to Reduce Maternal and Child Undernutrition through reduction of low birth weight (LBW), stunting and maternal anaemia. Combining these strategies adds value because both target young, pre-pregnant women, both can be implemented by the same health care workers and both share common objectives: prevent maternal deaths, reduce LBW and stunting (intergenerational effect on MMR and undernutrition), and improve neonatal and infant mortality rates and later undernutrition and wasting through reduction of LBW.

It is anticipated that diagnosis and treatment early in pregnancy or in pre-pregnancy, along with the recognition that the pregnant woman needs special support and care, can avert the diseases and conditions that cause or contribute to maternal death. Previous interventions that targeted the pregnant woman provided too little, too late; often not reaching her until she was in her fourth or fifth month of pregnancy. As pregnancy progresses, opportunities for effective interventions decrease. For example, treatment of severe anaemia is a condition that is unlikely to be corrected with oral iron and folate tablets if encountered in the last trimester of pregnancy. Yet, if therapy were to start in the month before pregnancy, at the same time as diagnostic procedures that could either treat or prevent intercurrent infections that contributed to anaemia, the condition could be corrected or even prevented.

### The Pre-Pregnancy Visit Suggested Package of Services

Diagnostic (coupons given for free health centre visit)

1. Haemoglobin
2. Blood smear for malaria
3. TB screen (sputum/skin test) (for both of the woman and her partner)
4. HIV test (for both of the woman and her partner)
5. Pregnancy test
6. Urine test
7. VDRL

Preventative

1. Iron/folate tablets
2. Multiple micronutrients: zinc, iodine, calcium, vitamin A, etc.
3. Packet of iodized salt
4. Insecticide treated bednets
5. TT injection
6. Counselling for HIV
7. Counselling in nutrition, sanitation and workload
8. Counselling in family planning, and, where desired, provision of contraception
9. Soap

Therapeutic

1. Tuberculosis therapy where necessary
2. Presumptive treatment of malaria
3. Single dose antibiotics for lower urinary tract infection.
4. Mebendazole/albendazole tablets (pending WHO recommendation)

As a result, the focus of the strategy is to use culturally appropriate events (e.g., weddings, pre-marital religious or civil counselling, etc.) to identify the pre-pregnant woman in order to offer her a package of services that will be preventative, diagnostic, and therapeutic. Although the age group envisioned for this part of the strategy is from 18-24 years, some of these diagnostic and therapeutic procedures could be effective if extended to the adolescent girl.

In targeting the adolescent, the prevention of adolescent pregnancy becomes an important goal for both safe motherhood, and for the reduction of undernutrition and stunting in the girl. Attempts to feed the adolescent girl during her growth spurt in order to stimulate 'extra' growth have largely failed to yield positive results, and may even have yielded the opposite: a rapid surge of calories contributing to earlier menarche and a premature cessation of growth. Chronically malnourished girls grow slower but, left undisturbed (i.e., without early pregnancies or excessive and late caloric supplementation), grow for a longer period of time than their well-nourished sisters who reach menarche and accompanying growth arrest earlier.<sup>22</sup>

Pregnancy is known as the only reliable risk factor for maternal death, so reducing fertility and delaying the age at first pregnancy are important components of this strategy. Provision of contraceptives and contraceptive counselling as part of the pre-pregnant visit or in discussions with adolescents and young women could have a significant effect on maternal mortality by giving women more control over their reproductive lives and the opportunity to prevent unintended pregnancies.<sup>23</sup>

## Linkages

The *pre-pregnancy visit* is the linkage between safe motherhood, adolescent health, women's health and nutrition, prevention of low birth weight and stunting, and personal and environmental hygiene. Identification of HIV status before pregnancy would also be possible during a pre-pregnancy visit, and could have a profound effect on the PMTCT programme, particularly if an HIV-positive woman takes a decision not to get pregnant, but also in focusing perinatal and postnatal care if she does decide to become pregnant.

Elements of the *pre-pregnancy package of services* will be continued throughout the pregnancy, and will also form the focus for sustained post-natal care including early and exclusive breastfeeding, and appropriate care of the newborn. The focus on neonatal care and feeding is emphasized in the *Regional Strategy for Reducing Child and Maternal Nutrition*.

## MONITORING AND EVALUATION

### Monitoring

A rigorous monitoring system will be necessary in order to assess progress toward the achievement of the MDG for reducing maternal mortality. However, it is unlikely that it will be possible to measure MMR accurately during the time of the implementation of this strategy. As a result, other indicators can be used to measure access and utilization

---

<sup>22</sup> Rush, D., op cit.

<sup>23</sup> Rahman, M. and DaVanzo, J., op. cit.

of EmOC, prevention of diseases, etc., as proxies to that measure. While individual countries will select indicators according to particular need, a core group of monitoring indicators given below could be adopted (after discussion with CO staff) in order to permit comparability of results.

In addition, process indicators (e.g., number of pre-pregnancy packages distributed) may be helpful on a site-by-site basis, but will not become a part of the core indicators.

Strategic Priority	Component	Core Indicator	Means of Verification	Risk/assumption
EmOC	Access to EmOC <i>met need</i>	Percentage of women with complications of pregnancy who use EmOC facilities appropriately	Hospital registers	Registers will be accurate. <i>Met need</i> can be calculated from expected # of complications. Hospitals accurately record what the complications are.
	Skilled attendants at birth	Percentage of all deliveries attended by skilled personnel	Surveys; community health registers	Surveys will not be too expensive. Health personnel will manage records well.
Preventable causes of maternal deaths	Maternal anaemia	Prevalence of anaemia in non-pregnant women	Surveys; health centre records	Access to Hemocue or other field level diagnostic tools. Anaemia is a marker of women's health, nutrition and social status.
	Maternal malaria	Prevalence of malaria in pregnancy	RBM records	Malaria programme keeps extensive records.
	Pregnancy outcome	Prevalence of LBW babies	Surveys; community health registers	Babies are weighed at birth
	Access to health care	Utilization of health facilities by women	Health centre registers	Utilization signals improved quality of care, adequate drugs, good interaction with HW.
Advocacy	Availability of facilities	Number of EmOC facilities per population	District records; facility surveys	Advocacy will lead to an increase in the number of EmOC facilities
	Affordability	1. Incorporation of conditionality for SM & Nutrition in SWAPS. 2. Reference to SM & Nutrition in PRS. 3. Budget for health	Documents  Documents  Budget records	SWAPs, PRSPs are used for equity and affordability by poor. Acceptance by donors and government that poor people cannot afford to pay for health.

## Evaluation

Evaluation will be based on a pre-test/post-test design with a comparison group. Baseline surveys will be done to measure the rates of indicators noted in monitoring above. MMR will be measured in 2010 and in 2015, and will be compared to 1990 values. Specific design including selection of sample and methods of evaluation will be discussed with Country Office staff.

## SCOPE

In discussion with government counterparts and upon review of the aggregated facility survey, the project can start in selected districts/provinces in each country in the East Asian and Pacific Region according to availability of resources.

## PROGRAMME MANAGEMENT

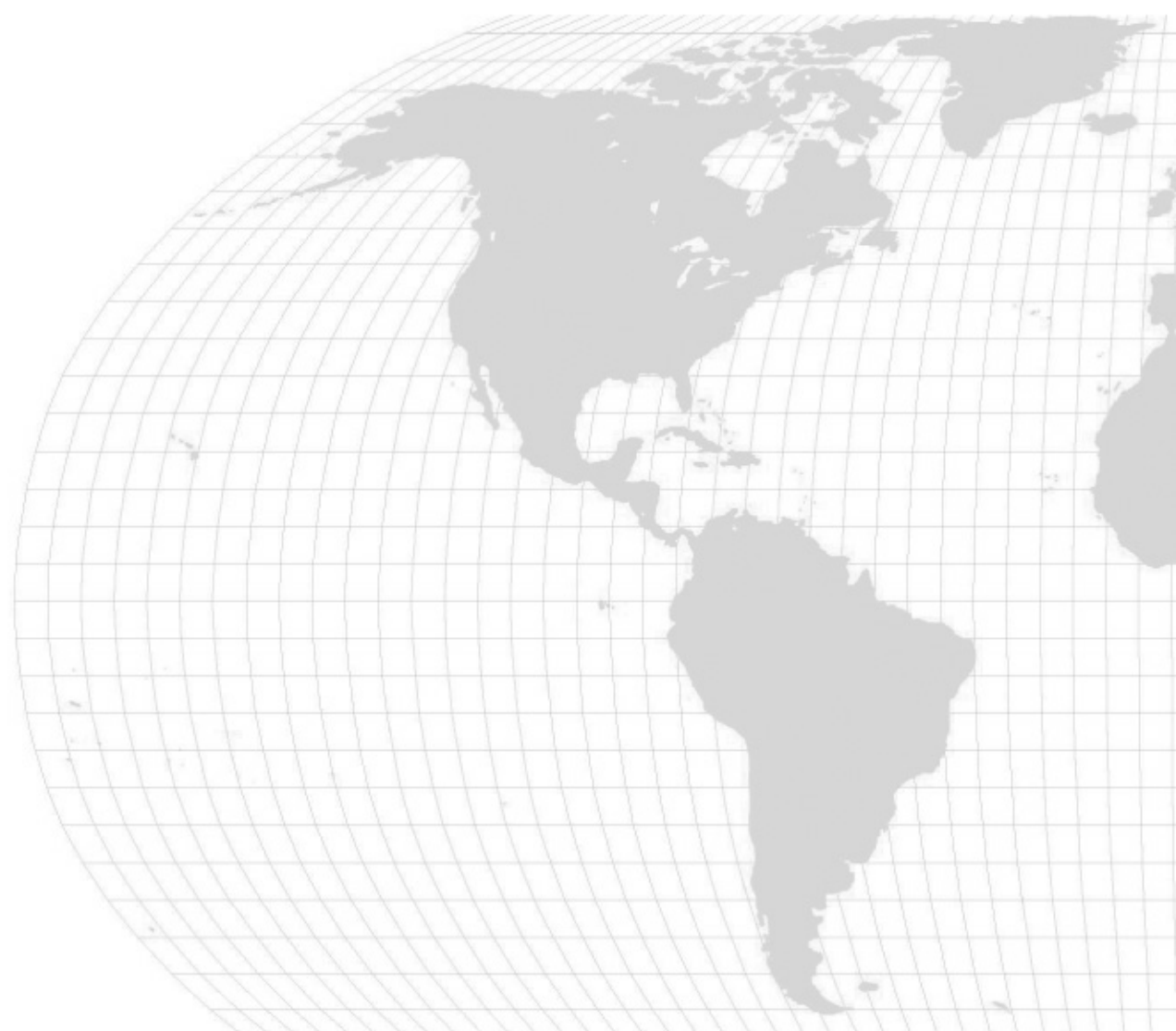
Management of safe motherhood projects will be done through the Country Office structure of UNICEF. The UNICEF Representative along with designated staff from Health, Nutrition, Water, Sanitation or other sectors will be responsible for implementation, and on-site monitoring and evaluation. The Regional Office will serve in an advisory and coordinating role, and as a technical resource to the country offices.



**UNICEF East Asia & Pacific  
Regional Office**

19 Phra Atit Road  
Bangkok 10200, Thailand

[eapro@unicef.org](mailto:eapro@unicef.org)  
[www.unicef.org](http://www.unicef.org)



ISBN: 974-685-036-9