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Complications during pregnancy- Epidemiology and risk factors



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Acronyms and abbreviations

AIDS immunodeficiency syndrome

DHS and Health Survey

GFR fertility rate

ICD-10 Statistical Classification of Diseases and Related Health Problems (10th Revision)

MDG Development Goal

MMR mortality ratio

MMRate mortality rate

OECD for Economic Co-operation and Development

PMDF maternal among deaths of females of reproductive age

RAMOS age mortality studies

SKA of births with skilled attendants

TFR fertility rate

UNFPA Nations Population Fund

UNICEF Nations Children's Fund

UNPD Nations Population Division

WHO Health Organization

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1.1 Introduction

Pregnancy is a normal, healthy state which most women aspire to at some point in their lives. Yet this normal process carries with it serious risks of death and disability to mother, child or both. The worst outcome of these complications is maternal or fetal death. In this work, the focus will be on maternal death, maternal mortality ratio worldwide, causes and to review what is done in order to prevent and decrease the high number of avoidable deaths. The fact is that worldwide, eight million women suffer pregnancy-related complications and over half a million young women die every year as a result of complications arising from pregnancy and childbirth. 99% occur in developing countries. Most of these deaths could be avoided if preventive measures were taken and adequate care available, this including adequate nutrition, improved hygiene practices, family planning available for all, antenatal care, skilled health workers assisting at births, emergency obstetric and newborn care, and post-natal visits for both mothers and newborns. [13,20] In developing countries, one woman in 16 may die of pregnancy-related complications compared to one in 2800 in developed countries.

2.2 Summary

Maternal death as a complication of pregnancy should be avoided, and all measures possible and available should be used in order to reduce the incidence. The distribution worldwide of maternal death is very variable and too high. Every year half a million women die due to complications arising from pregnancy and childbirth, 99% occur in developing countries. In developing countries maternal death is fortunately a rare event, both health care facilities, screening possibilities and preventive measures are almost optimal.

For a true comparison of the risks of maternal mortality in different countries, the risk itself and the average number of children per woman must both be considered. I will give an example; A Nigerian woman has 375 times greater risk of maternal death than a Swedish woman, but since she has about 4 times more children, her lifetime risk of maternal death is over 1500 times greater than that of the Swedish woman.[15]

There are so many factors involved in cause and risk, most of these are preventable with the right health care and education available for all. Here is a brief summary of

preventable causes; Mother-related preventable factors were no prenatal care, lack of social support, and delay in seeking help. Traditional birth attendant-related preventable factors were delay in referring mother to health care, inability to understand the severity of the complication, and administration of the wrong treatment. Local clinic-related preventable factors included inadequate resources, poor communication, and poor training of health care staff. Hospital-related preventable factors were delayed treatment, wrong diagnosis, wrong treatment, no supplies, and inadequate skills. Recommendations to reduce maternal deaths were community-based health education on the risk factors of pregnancy and childbirth, improved health facilities, better training of health personnel, and improved family planning programs.

Clearly these factors are more prevalent in developing countries, and each step has to be evaluated in order to achieve optimal health care for all women before, during and after pregnancy.

The attention is on maternal health, and many people working to reduce the high incidence. WHO, UNICEF, UNPD and other global and local schemes and strategies are working all with the same intention to take more care of women's health.

2.1 Method

My work is mainly based on review of articles, medical journals, both Norwegian and English and other electronic databases with focus on the topic "maternal mortality", most of it web based. My main source of this information was found on WHO, UNICEF, World bank and United Nations Population Funds web sites. I tried to compare the statistics provided from WHO and UNICEF on what is already done as prevention, how the registration is done, the statistics on number and the cause of such a high maternal mortality ratio.

3.1 Definition of Maternal death and Maternal mortality ratio

Maternal death

The Tenth Revision of the International 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.*[2]

According to ICD-10, 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 physiologic effects of pregnancy.[2,14]

Maternal Mortality. "there are three distinct measures of maternal mortality in widespread use: the maternal mortality ratio, the maternal mortality rate and the lifetime risk of maternal death. The most commonly used measure is the maternal mortality ratio, that is the number of maternal deaths during a given time period per 100,000 live births during the same time period. This is a measure of the risk of death once a woman has become pregnant, meaning that it is the product of the total number of births and risk per birth. The maternal mortality rate, that is, the number of maternal deaths in a given period per 100,000 women of reproductive age during the same time period, reflects the frequency with which women are exposed to risk through fertility. The lifetime risk of maternal death takes into account both the probability of becoming pregnant and the probability of dying as a result of that pregnancy cumulated across a woman's reproductive years. It can be approximated by multiplying the maternal mortality rate by the length of the reproductive period (around 35 years)"[16,13].

The MMR is difficult to register, and if trying the process is complex. This because of often a lack of availability of data and/or faulty and inaccurate registration of maternal

deaths. The first MMR estimates was in 1990 measured by WHO, UNICEF and UNFPA, after that the methodology of the estimates have changed and been modified in order to obtain more precise data. The last estimate was from 2005, here also The World Bank and UNPD provided additional help with providing national estimates of births in 2005. There are some problems in measuring maternal deaths, I will briefly explain the main difficulties. The first thing is that there exists in different countries different registration systems for maternal deaths. In the more developed countries there is usually a well developed civil registration system, which register number of deaths and cause registration. These data are quite reliable. In countries with less developed civil registration systems, number and cause of death are usually not properly registered or classified . Much because registration is poor or not existing, and/or because of wrong classification. The results of this will be an underestimation of MMR. Methods used in registration work are based on civil registration, or Vital registration, this mainly in developed countries where civil registration system already works.

Direct/indirect household survey methods is another way of measuring MMR, there the use of surveys questionnaires to register death and survival of older sisters is used. This is a retrospective estimate. RAMOS identify and investigate all women who died in reproductive age. Some other methods are used, but in small numbers.

Clearly MMR is not an absolute ratio and should only be used as an estimate, and not a measure of progress or trend. There were changes in registration between estimates from 1990-1995-2000-2005, so it is not possible to rely on the number and changes over the years. A way of measuring progress would rather be to monitor the MM reduction by using the percentage of births attended by a skilled health worker. The problem here is then if the definition of skilled health worker is the same worldwide. But one can see that in countries with increasing presence of skilled health worker during delivery, also the MMR was reduced. [20] One can look upon the coverage of a skilled birth attendant as a main indicator of service provision, which increased between 1990 and 2000, from 42% to 52%, in the developing world The greatest improvements occurred in south-eastern Asia and northern Africa; the least were observed in sub-Saharan Africa, where rates have remained among the lowest in the world. Globally, more than 60 million women still give birth without a skilled birth attendant. A skilled attendant is a health professional - such as a midwife, doctor or nurse - who has been educated and trained to proficiency in the skills needed to

manage normal (uncomplicated) pregnancies, childbirth and the important postpartum and newborn period and in the identification, referral and management of complications in women and newborns. This was a brief explanation of difficulties in registration, estimation and utilization of MMR. It is not in the scope of this paper to go more in detail, only to cover the aspect of usage of the MMR, and alternatives in the registration process.

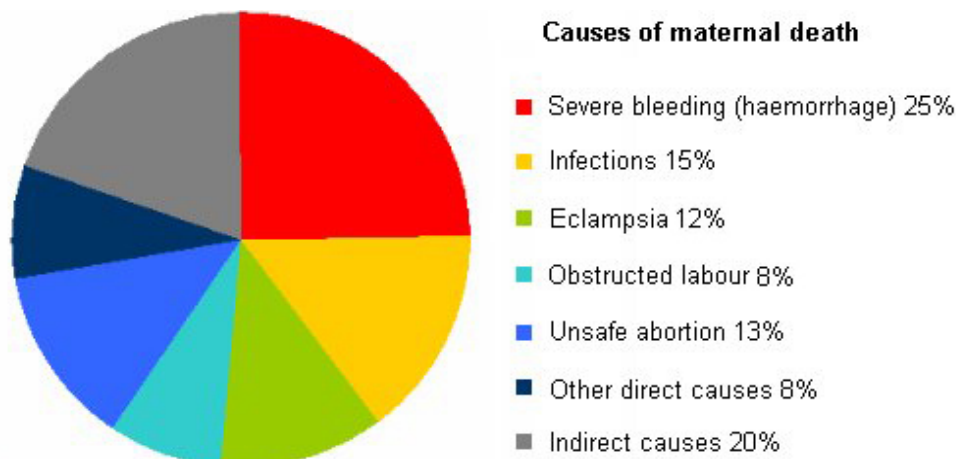
3.2 Causes of maternal death and distribution

Having a child remains one of the biggest health risks for women worldwide, and this is especially true for women in least developed countries who are 300 times more likely to die in childbirth or from pregnancy-related complications than women in developed countries.[14] Maternal health goes beyond the survival of pregnant women and mothers. For every woman who dies from causes related to pregnancy or childbirth, it is estimated that there are 20 others who suffer pregnancy-related illness or experience other severe consequences. The number is striking: An estimated 10 million women annually who survive their pregnancies experience such adverse outcomes. [13] The root cause may lie in women's disadvantaged position in many countries and cultures, and in lacking attention to, and accountability for, women's rights. The timing and causes of maternal deaths are well known. Maternal deaths mostly occur from the third trimester to the first week after birth with the exception of deaths due to complications of abortion. Studies show that mortality risks for mothers are particularly elevated within the first two days after birth.[18] Most maternal deaths are related to obstetric complications – including post-partum haemorrhage, infections, eclampsia and prolonged or obstructed labour – and complications of abortion. Most of these direct causes of maternal mortality can be readily addressed if skilled health personnel are on hand and key drugs, equipment and referral facilities are available. Some indirect causes as infections and anaemia can also be prevented if the right measures are present and available. A collaboration between specific programmes, such as those to address malaria or AIDS and maternal health initiatives may often be the most effective way to address some of these indirect causes, including ones that are highly preventable or treatable, for example anaemia as previously mentioned. Maternal anaemia affects about half of all pregnant women.

Pregnant adolescents are more prone to anaemia than older women, and they often receive less care.[15] Infectious diseases such as malaria, which affects around 50 million pregnant women living in malaria-endemic countries every year, and intestinal parasites can exacerbate anaemia, as can poor quality diets – all of which heighten vulnerability to maternal death. Severe anaemia contributes to the risk of death in cases of haemorrhage. Anaemia is highly treatable with iron supplements offered through maternal health programmes.

Most of these complications develop because of their pregnant status and some because pregnancy aggravated an existing disease. The four major causes are: severe bleeding (mostly bleeding postpartum), infections (also mostly soon after delivery), hypertensive disorders in pregnancy (eclampsia) and obstructed labour. Complications after unsafe abortion cause 13% of maternal deaths.[Fig 1] Globally, about 80% of maternal deaths are due to these causes. Among the indirect causes (20%) of maternal death are diseases such as malaria, anaemia and HIV. Women also die because of poor health at conception and a lack of adequate care needed for the healthy outcome of the pregnancy for themselves and their babies.

Fig. 1



Source: The World Health Report 2005. Make every mother and child count. Geneva, World Health Organization, 2005.

The WHO reports that obstetric haemorrhage causes 127,000 deaths annually worldwide.[20,16,17] Nearly all of these deaths are due to postpartum haemorrhages, which occur nearly 14 million times each year. In Africa, haemorrhage is estimated to be responsible for 30% of all maternal deaths.[20] The imbalance between resource-

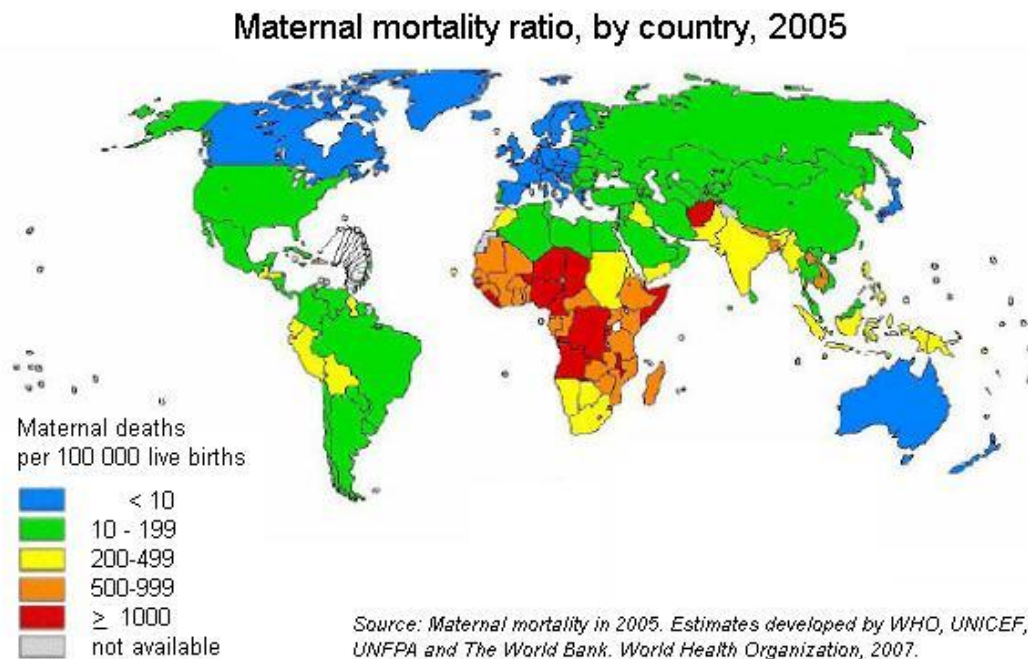
rich and resource-poor areas probably stems from a combination of: increased prevalence of risk factors such as grand multiparity, lack of safe blood banking, no routine use of prophylaxis against haemorrhage, and lack of measures for drug and surgical management of atony, and that the detection, prophylaxis and treatment of anaemia is of poor quality. Haemorrhage and hypertensive disorders are major contributors to maternal deaths in developing countries. Whereas in developed countries main cause of death is from hypertensive disorders and haemorrhage. Where conditions such as HIV/AIDS, malaria and tuberculosis are prevalent, they are aggravating pregnancy and childbirth complications. Maternal deaths from these causes are increasing.[8,2] The age of the mother is also important: mortality is higher among younger women and especially among adolescent girls - about 70 000 of the annual deaths occur in women aged less than 20 years. Family planning is a key step in prevention of this.

3.3 The world today, statistics **[Fig 2,3,4]**

Of the estimated total of 536 000 maternal deaths worldwide in 2005, developing countries accounted for 99% (533 000) of these deaths. Slightly more than half of the maternal deaths (270 000) occurred in the sub-Saharan Africa region alone, followed by South Asia (188 000). Thus, sub-Saharan Africa and South Asia accounted for 86% of global maternal deaths. The adult lifetime risk of maternal death is highest in Africa (at 1 in 26), followed by Oceania (1 in 62) and Asia (1 in 120), while the developed regions had the smallest lifetime risk (1 in 7300). Of all 171 countries and territories for which estimates were made, Niger had the highest estimated lifetime risk of 1 in 7, in stark contrast to Ireland, which had the lowest lifetime risk of 1 in 48 000. [Fig 2,3]

Almost all occur in the developing world. This differential in maternal mortality between the developing and developed worlds is often cited as the largest discrepancy of all public health statistics. Just 13 countries account for 70 percent of all maternal deaths. Two regions South Asia and sub-Saharan Africa account for 74 percent of the global burden of maternal conditions.

Fig. 2



This seriously neglected problem, is largely because its victims are those with the least power and influence in society--they are poor, rural peasants, and female. The roots of maternal mortality lie in discrimination against women, in terms of legal status and access to education, financial resources and health care, including family planning. It is essential that all women are ensured access to maternal health and family planning services, especially obstetric care for life-threatening situations. Although effective interventions to prevent mortality are known, for many women and newborns, appropriate care remains unavailable, unused, inaccessible, or of poor quality. The ability for women to access quality family planning services, post-abortion care services and where legally permissible, safe abortion services, is also associated with reduced maternal deaths. Socioeconomic determinants such as poverty, social exclusion and low levels of education significantly contribute to death and disability. For example, rural populations suffer higher mortality than urban populations. In urban areas, there are also differences in the risk of maternal death between women living in slum settlements and those living in wealthy suburbs. [10]

Worldwide, there was a 5.4% decline in MMR between 1990 and 2005. Eastern Asia had the largest decline of 47.1%, as opposed to 1.8% in sub-Saharan Africa. Unlike the other MDG regions, sub-Saharan Africa experienced an increase in the number of maternal deaths (from 212 000 in 1990 to 270 000 in 2005) with a concomitant

increase in the number of live births (from 23 million in 1990 to 30 million in 2005) resulting in the negligible change in MMR from 1990 to 2005. [Fig 5]

Fig 3

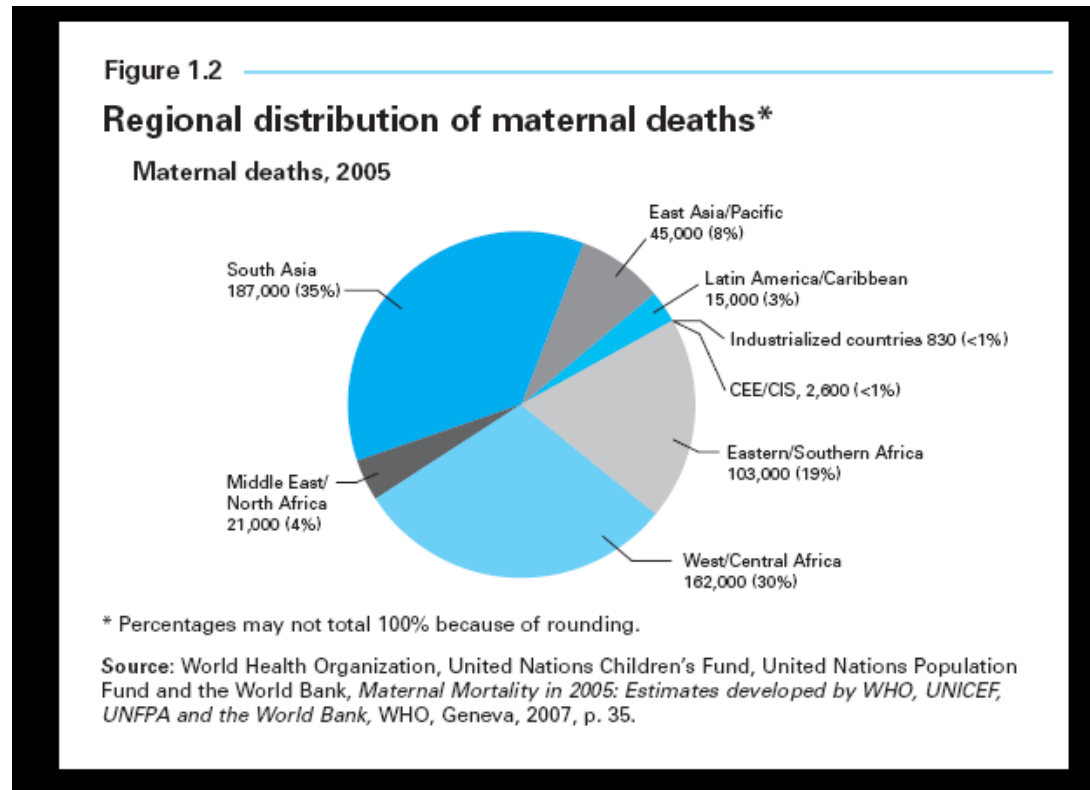


Fig 4**Table 2. Estimates of MMR, number of maternal deaths, lifetime risk, and range of uncertainty by United Nations MDG regions, 2005**

Region	MMR (maternal deaths per 100 000 live births)*	Number of maternal deaths*	Lifetime risk of maternal death*: 1 in:	Range of uncertainty on MMR estimates	
				Lower estimate	Upper estimate
WORLD TOTAL	400	536 000	92	220	650
Developed regions**	9	960	7 300	8	17
Countries of the commonwealth of independent states (CIS)***	51	1 800	1 200	28	140
Developing regions	450	533 000	75	240	730
Africa	820	276 000	26	410	1 400
Northern Africa****	160	5 700	210	85	290
Sub-Saharan Africa	900	270 000	22	450	1 500
Asia	330	241 000	120	190	520
Eastern Asia	50	9 200	1 200	31	80
South Asia	490	188 000	61	290	750
South-Eastern Asia	300	35 000	130	160	550
Western Asia	160	8 300	170	62	340
Latin America and the Caribbean	130	15 000	290	81	230
Oceania	430	890	62	120	1 200

* The MMR and lifetime risk have been rounded according to the following scheme: < 100, no rounding; 100–999, rounded to nearest 10; and >1,000, rounded to nearest 100. The numbers of maternal deaths have been rounded as follows: < 1,000, rounded to nearest 10, 1,000–9,999, rounded to nearest 100; and >10,000, rounded to nearest 1,000.

** Includes Albania, Australia, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Serbia and Montenegro (Serbia and Montenegro became separate independent entities in 2006), Slovakia, Slovenia, Spain, Sweden, Switzerland, The former Yugoslav Republic of Macedonia, the United Kingdom, the United States of America.

*** The CIS countries are Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, the Republic of Moldova, the Russian Federation, and Ukraine.

**** Excludes Sudan, which is included in subSaharan Africa.

Fig 5**Table 3. Comparison of 1990 and 2005 maternal mortality by United Nations MDG regions**

Region	1990*		2005*		% change in MMR between 1990 and 2005	Annual % change in MMR between 1990 and 2005
	MMR	Maternal deaths	MMR	Maternal deaths		
WORLD TOTAL	430	576 000	400	536 000	-5.4	-0.4
Developed regions**	11	1 300	9	960	-23.6	-1.8
Countries of the commonwealth of independent states (CIS)***	58	2 800	51	1 800	-12.5	-0.9
Developing regions	480	572 000	450	533 000	-6.6	-0.5
Africa	830	221 000	820	276 000	-0.6	0.0
Northern Africa****	250	8 900	160	5 700	-36.3	-3.0
Sub-Saharan Africa	920	212 000	900	270 000	-1.8	-0.1
Asia	410	329 000	330	241 000	-19.7	-1.5
Eastern Asia	95	24 000	50	9 200	-47.1	-4.2
South Asia	620	241 000	490	188 000	-21.1	-1.6
South-Eastern Asia	450	56 000	300	35 000	-32.8	-2.6
Western Asia	190	8 500	160	8 300	-16.2	-1.2
Latin America and the Caribbean	180	21 000	130	15 000	-26.3	-2.0
Oceania	550	1 000	430	890	-22.2	-1.7

* The 1990 estimates have been revised using the same methodology used for 2005, which makes them comparable. The MMRs have been rounded according to the following scheme: < 100, no rounding; 100–999, rounded to nearest 10; and >1,000, rounded 9,999, rounded to nearest 100; and >10,000, rounded to nearest 1,000.

** Includes Albania, Australia, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Serbia and Montenegro (Serbia and Montenegro became separate independent entities in 2006), Slovakia, Slovenia, Spain, Sweden, Switzerland, The former Yugoslav Republic of Macedonia, United Kingdom, United States of America.

*** The CIS countries are Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, the Republic of Moldova, the Russian Federation, and Ukraine.

**** Excludes Sudan, which is included in sub-Saharan Africa.

3.4 Prevention and approach to reduce Maternal mortality ratio worldwide

No single health intervention can by itself significantly reduce maternal mortality. The scope and nature of maternal conditions call for packages of interventions. Three main pathways can avert adverse outcomes — preventing pregnancy, preventing complications, and preventing death from complications of pregnancy and childbirth. The first pathway is the only true primary prevention strategy.

Preventing complications involves maintaining a normal pregnancy and managing mild complications. If complications occur, maternal death can be avoided by effective, timely, and appropriate clinical interventions, often referred to as emergency obstetric care.[20]

Maternal mortality have been on the agenda both locally and globally a long time, since The Safe Motherhood Initiative launched in 1987 the focus and international efforts to address maternal mortality started. 1990 when the first worldwide MMR estimates was published, the whole world open their eyes for this issue. Since then many interventions has called upon action, I will mention work done by WHO and other health organizations.

In 2000 WHO launched the Making Pregnancy Safer (MPS). This initiative focuses on the health sector and seeks to contribute to the improvement of maternal health. More specifically the initiative supports efforts in all parts of the world to accelerate the reduction of maternal mortality. It is now widely recognized that existing efforts will not be sufficient to reduce maternal and newborn deaths at a rate that will achieve the goals that was set, and that an accelerated programme is needed.[24] This sense of urgency lies at the heart of the strategic approach of MPS.

Today, MPS has put a new plan in place in countries in order to 1) tighten forces and better support interventions for universal coverage 2) sustain quality healthcare in conditions of diverse social values and changing social, economic and political conditions and 3) work with countries and partners to strengthen their capacity to achieve universal health coverage.

IMPAC – the Integrated Management of Pregnancy and Childbirth – Is a guidance and a tool to increase pregnant women's access to high-quality health services. The approach aims at improving maternal and newborn health by addressing different factors that are crucial for the access to skilled care before, during and after pregnancy

and childbirth. It targets health systems, health workers, as well as families and communities. [24,20]

Halfdan Mahler, Director-General of WHO outlined a 4-part strategy to combat maternal mortality:

- 1) adequate primary health care and an adequate share of available food for females from infancy to adolescence, and universally available family planning;
- 2) good prenatal care, including nutrition, with early detection and referral of those at high risk;
- 3) the assistance of a trained person at all births; and
- 4) access to the essential elements of obstetric care for women at higher risk.[22]

Several interventions have shown to improve maternal survival in epidemiological studies and they should be appropriate for universal application. These interventions are now ready for wide-scale implementation, and hopefully can be a part of MPS strategies. These include magnesium sulphate and calcium supplementation for the prevention of hypertensive disorders of pregnancy, effective dissemination strategies for guidelines on the prevention and treatment of post-partum haemorrhage, and the recommended provision of at least four antenatal visits to pregnant women and one post-partum visit to new mothers. Increasing awareness of the close link between maternal and newborn health has also resulted in the introduction of effective programmes for the prevention and treatment of malaria and HIV, through measures to expand provision of insecticide-treated mosquito nets and intermittent preventive treatment of malaria in pregnancy, interventions to prevent mother-to-child transmission of HIV, preventive measures to avoid HIV infection – particularly among young people – and antiretroviral treatment for HIV-positive women and children.

Millennium Developmental Goal 5, is one of the 8 Millennium goal set in year 2000 by 189 countries with aim to reach the goals by 2015. MDG 5 aims at improving maternal health. This goal was translated into two targets:

- to reduce maternal mortality by three quarters between 1990 and 2015, and to achieve universal coverage of skilled care at birth by 2015.

The two key indicators for monitoring the progress towards the first target are the maternal mortality ratio and the proportion of births attended by skilled health personnel.

WHO has also developed a tool called Beyond the Numbers[25] which provides five

approaches to case reviews of maternal deaths and complications, to gain the evidence on where the main problems lie and what can be done in future.

The guide focuses on finding out exactly why mothers die. For example: Is it because they are unaware of the need for care, or unaware of the warning signs of problems in pregnancy? Or Is it because the services do not exist, or are inaccessible for other reasons, such as distance, cost or sociocultural barriers? Or Are women dying because the care they receive is inadequate or actually harmful?

This is list of prevention strategies;

Primary prevention strategies

These strategies aim to prevent the condition from occurring through education and services. Examples include improving sex education and providing family planning services, improving pre-conception care and improving diagnosis and treatment of sexually transmitted infection to prevent ectopic pregnancy and intrapartum and postpartum infections.

Secondary prevention strategies

These strategies detect and treat conditions early in order to minimize the effects. Examples include increasing community awareness and patient knowledge about normal pregnancy and the signs and symptoms of possible problems, increasing emphasis on patient satisfaction with care in order to improve patients' adherence to the recommendations of their health care workers and improving antenatal, labour and delivery techniques and postpartum follow-up.

Tertiary prevention strategies

These strategies provide direction on how to treat conditions in an optimal fashion in order to reduce mortality and morbidity rates. Examples include improving obstetric and medical treatment of complications and improving practices, facilities, referral services and organization of services.

3.5 MDG 5 is the goal reachable by 2015?

The analysis of trends of MMR shows that at the global level, maternal mortality has decreased at an average of less than 1% annually between 1990 and 2005 – far below the 5.5% annual decline, which is necessary to achieve the fifth MDG. To achieve that goal, MMRs will need to decrease at a much faster rate in the future – especially in sub-Saharan Africa, where the annual decline has so far been approximately 0.1%. Eastern Asia had the largest decline of 47.1%, as opposed to 1.8% in sub-Saharan Africa. Unlike the other MDG regions, sub-Saharan Africa experienced an increase in the number of maternal deaths (from 212 000 in 1990 to 270 000 in 2005) with a concomitant increase in the number of live births (from 23 million in 1990 to 30 million in 2005) resulting in the negligible change in MMR from 1990 to 2005. The fifth MDG aims to improve maternal health and targets reducing MMR by 75% between 1990 and 2015 – that is, it seeks to achieve an expected 5.5% annual decline in MMR from 1990. However maternal mortality (as measured by MMR) has decreased at the global level at an average of less than 1% annually between 1990 and 2005. Moreover, on the regional basis, none of the MDG regions achieved 5.5% between 1990 and 2005, although Eastern Asia came close to that goal with a 4.2% annual decline.

To make the achievement of the fifth MDG a reality, MMR will have to decrease at a much faster rate– especially in sub-Saharan Africa, where the annual decline has so far been about 0.1%. The realization of this goal will require increased attention to improved health care for women, including prevention of unplanned pregnancies and unsafe abortions and provision of high-quality pregnancy and delivery care, including emergency obstetric care.[] Greater attention to improving sexual and reproductive health care and universal access to all its aspects are required to prevent unintended pregnancies and unsafe abortions, to manage abortion complications, to prevent morbidity and mortality due to sexually transmitted infections and to provide high-quality pregnancy and delivery care, including essential obstetric care. WHO supports countries in improving maternal health and focuses on 75 priority countries that account for 97% of all maternal deaths worldwide. WHO aims to reduce maternal mortality by providing and promoting evidence-based clinical and programmatic guidance. In addition, WHO promotes skilled care at every birth. It has developed educational modules for midwifery training and offers training for trainers in

midwifery education in the regions of WHO. Further, WHO promotes the approach of involving individuals, families and communities to increase access to quality care.

The overarching goal of this strategic approach is that all women and newborns will have access to skilled care services during pregnancy, childbirth and the postpartum and newborn periods, thereby minimizing maternal morbidity and mortality.

Ultimately a world in which women go through pregnancy and childbirth safely and newborn babies are assured health.[23]

High levels of mortality and morbidity persist, despite the fact that the causes, determinants, and the solutions are well known.

4.1 Conclusion

There is a lot of promising work done in order to reduce Maternal mortality rates worldwide. With WHO, UNICEF, World population funds and UNFPA all working towards the same goal, it seems that the power and funds is sufficient.

With growing political and financial support for programmes and research initiatives aimed at improving maternal and newborn health, and the shift from single issue, sectoral approaches to health care to collaborative forms of delivering primary health care in a continuum of care, raises hopes and expectations that the long-awaited gains in maternal health that are so critical for the well-being and development of populations.

And now knowing that more than 90% of maternal deaths are preventable with proper care, the world should continue work with prevention with increasing focus and funding local and global.

5.1 Discussion

Every minute, at least one woman dies from complications related to pregnancy or childbirth – that means 529 000 women a year. In addition, for every woman who dies in childbirth, around 20 more suffer injury, infection or disease – approximately 10 million women each year. More than 90% of these deaths could have been prevented if proper care was available. [2,20]

Women need not die in childbirth. Every young woman should be given the information and support she needs to control her reproductive health, help her through

a pregnancy, and care for her and her newborn well into childhood. The vast majority of maternal deaths could be prevented if women had access to quality family planning services, skilled care during pregnancy, childbirth and the first month after delivery, or post-abortion care services and where permissible, safe abortion services. 15% of pregnancies and childbirths need emergency obstetric care because of risks that are difficult to predict. A working health system with skilled personnel seems to be the key to saving these women's lives.[13,14]

The clinical interventions needed to avert much of the disease burden from maternal deaths require a reasonably well-functioning health system. Globally, little progress has been made in reducing maternal mortality over the past 20 years, although there is some evidence of decline in countries where maternal mortality ratios were already low (fewer than 100 maternal deaths per 100,000 live births). Community-based maternity care programs with trained midwives, medical supplies, and a referral system can reduce the risk of dying by 66%. Safe motherhood begins with a healthy environment (women's status, political commitment, and socioeconomic development), which is influenced by women's health and nutritional status, reproductive and health behaviour, and access to family planning and maternal care services.

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