Review Article

IMPROVING MATERNAL HEALTH AND MEETING TARGETS OF THE FIFTH MILLENNIUM DEVELOPMENT GOAL IN CAMEROON: A framework for action.

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ABSTRACT:

The burden of maternal mortality remains high in Cameroon even though the causes of maternal deaths and evidence-based interventions to address these factors are known. This article appraises the rising trend of maternal mortality in Cameroon, identifies lapses along the continuum of maternal care and raises priority issues relating to government commitment and the need for integration of evidence based interventions for maternal survival. It also presents an intervention model and proffers recommendations that may help Cameroon achieve the fifth Millennium Development Goal.

KEY WORDS: Maternal mortality - Millennium Development Goals - Cameroon - Evidence-based interventions.

AMÉLIORER LA SANTE MATERNELLE ET ATTEINDRE L'OBJECTIF CINQ DES OBJECTIFS DU MILLENAIRE AU CAMEROUN: Un canevas d'action.

RESUME:

Malgré le fait que les causes et les interventions fondées sur des preuves soient connues, le taux de mortalité maternelle reste élevé au Cameroun. Cet article évalue les tendances en hausse récentes de la mortalité maternelle, résume les priorités en rapport avec l'engagement gouvernemental, le besoin des interventions fondées sur des preuves et donne quelques recommandations pouvant aider le Cameroun à atteindre le cinquième Objectif du Millénaire pour le Développement.

MOTS CLES: Mortalité maternelle - Objectifs du Millénaire pour le Développement - Cameroun - Interventions fondées sur des preuves.

I- INTRODUCTION

The Millennium Development Goals (MDGs) are probably the most widely endorsed health and development targets in human history. With adoption in the year 2000 by 147 heads of state, almost every country has formally committed to tackling development challenges related to overlapping goals addressing poverty and hunger, education, health and the environment. There are eight MDGs, three of which are directly health related – MDGs 4 and 5 address child mortality and maternal mortality while MDG 6 targets the high burden diseases, HIV and Malaria. In particular, MDG 5 is aimed at reducing maternal mortality and improving maternal health using targets and indicators detailed in Table I below

Table 1 - MDG 5 Targets and indicators.*

MDG 5 Target	Indicator
1. Reduce by three quarters the maternal mortality ratio in 2015	- Maternal mortality ratio - Proportion of births attended by skilled health personnel
2. Achieve, by 2015, universal access to reproductive health	- Contraceptive prevalence rate - Adolescent birth rate - Antenatal care coverage - Unmet need for family planning

** Source: United Nations Millennium Development Goals [Online]. 2008[Cited 2009 July 12]; Available from: URL:*

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II- DEFINITIONS OF INDICATORS [1]

a. Antenatal care coverage

Antenatal care coverage (at least one visit) is the percentage of women aged 15-49 with a live birth in a given time period that received antenatal care provided by skilled health personnel (doctors, nurses, or midwives) at least once during pregnancy, as a percentage of women age 15-49 years with a live birth in a given time period.

Antenatal care coverage (at least four visits) is the percentage of women aged 15-49 with a live birth in a given time period that received antenatal care four or more times with ANY provider (whether skilled or unskilled), as a percentage of women age 15-49 years with a live birth in a given time period.

b. Births attended by skilled health personnel

Percentage of births attended by skilled health personnel (doctors, nurses or midwives) is the percentage of deliveries attended by personnel trained in providing life saving obstetric care, including giving the necessary supervision, care and advice to women during pregnancy, labour and the post-partum period; to conduct deliveries on their own; and to care for newborns. Traditional birth attendants, even if they receive a short training course, are not included.

c. Maternal mortality ratio

The maternal mortality ratio (MMR) is the annual number of female deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, for a specified year (expressed per 100,000 live births).

d. Contraceptive prevalence

Contraceptive prevalence is the percentage of women married or in-union aged 15 to 49 who are currently using, or whose sexual partner is using, at least one method of contraception, regardless of the method used.

e. Total fertility rate

The number of children that would be born per women if she were to live to the end of her child-bearing years and bear children at each age in accordance with prevailing age-specific fertility rates.

f. Adolescent birth rate

The adolescent birth rate measures the annual number of births to women 15 to 19 years of age per 1,000 women in that age group. It represents the risk of childbearing among adolescent women 15 to 19 years of age. It is also referred to as the age-specific fertility rate for women aged 15-19.

g. Unmet need for family planning

Women with unmet need for family planning for limiting births are those who are fecund and sexually active but are not using any method of contraception, and report not wanting any more children. This is a subcategory of total unmet need for family planning, which also includes unmet need for spacing births. The concept of unmet need points to the gap between women's reproductive intentions and their contraceptive behavior. It is expressed as a percentage based on women who are married or in a consensual union.

III- A PROFILE OF CAMEROON

Cameroon is a central African country with a population of 18.549 million and a growth rate of 2.4% [2]. The Gross Domestic Product (GDP) per capita is $ 1110.9 [3] while total expenditure on health is only 5.2% of the GDP. Of this amount, only 28.1% is accounted for by government expenditures implying that household expenditures on health are disproportionately high [4]. Indices relating to human resource for health are also challenging. Physician density is 2.0 doctors/10,000 population and nursing and midwifery personnel density is 16.0/10,000 population. Availability of hospital beds is 15.0/10,000 population compared to double or triple these figures in developed countries [4]. Health indices in Cameroon are a reflection of these economic and health system constraints. Cameroon has a high maternal mortality ratio (MMR) of 1000/100,000 births similar to the rest of sub-Saharan Africa but almost double that of south Asia, quadruple that of Latin America and 50 times higher than in industrialized countries [2,5]. The prevalence rate of HIV is 5.1% in the general population and up to 10.8% in antenatal care attendees [2,6].

There is a breach in health care coverage along the continuum of care from the need for contraception to the severe shortage of emergency obstetric care services (EmOC) and postnatal care (Table II) [2,7-89]. Although 649,000 births are recorded annually, [2] not all births are attended by skilled personnel. Only two thirds of pregnant women in Cameroon receive adequate antenatal care and a smaller proportion are attended by skilled personnel at delivery. The contraceptive prevalence rate is low at 29%, unmet needs for family planning are high and consequently there are many adolescent births with ensuing morbidity and mortality.

Health reforms initiated within Cameroon's health system in 1993, introduced eight new programs, one of which was the reproductive health program incorporating maternal health. Since 1994 both Mother and Child Protection and Family Planning (FP) services have been integrated at all levels of the health system, together with a risk approach component and adolescent health care. These reforms met with some successes notably a rise in contraception rates, a drop in hospital based maternal mortality and the onset of serious thoughts on adolescent health care [10]. These successes were short lived. Recent studies show that the awareness and practice of basic evidence-based reproductive health interventions are lacking [11].

Table II- Maternal health indicators for Cameroon. [2,3,4]

Indicator	Value
Maternal mortality ratio (adjusted)	1000
Proportion of births attended by skilled health personnel	63%
Contraceptive prevalence rate	29%
Contribution of unsafe abortions to maternal deaths	27.4-34.6%
Fertility rate	4.4
Adolescent birth rate per 1000 women	141.0
Antenatal care coverage (at least one visit and at least four visits)	82%, 60%
Unmet need for family planning	20%
National availability of emergency obstetric care rvices se (% of recommended minimum)	29%
Cesarean section rate	2%

IV- CURRENT TRENDS IN MATERNAL HEALTH

Current trends in maternal health services for Cameroon present a mixed picture. On one hand, attendance in antenatal clinics, deliveries attended by skilled personnel and institutionalized deliveries seem to be improving marginally [8]. The number of women who recorded a single attendance at antenatal clinic has increased from 79% to 83%, while deliveries attended by skilled personnel and institutionalized deliveries have increased marginally to 62% and 59% respectively. However, in spite of these modest improvements, the maternal mortality ratio is on the rise and in fact has doubled since 1998 [8].

It is reasonable to assume that without prompt and aggressive action, the MDG 5 target will not be met (Figure 1 and 2). The goal to scale down MMR by three-quarters implies that it will be reduced from 1000 to 250 deaths per 100,000 live births. Such a reversal of trends will require massive financial, infrastructural and organizational overhauls in addition to readjusting service delivery targets to the most vulnerable groups namely; the poor, uneducated rural women.

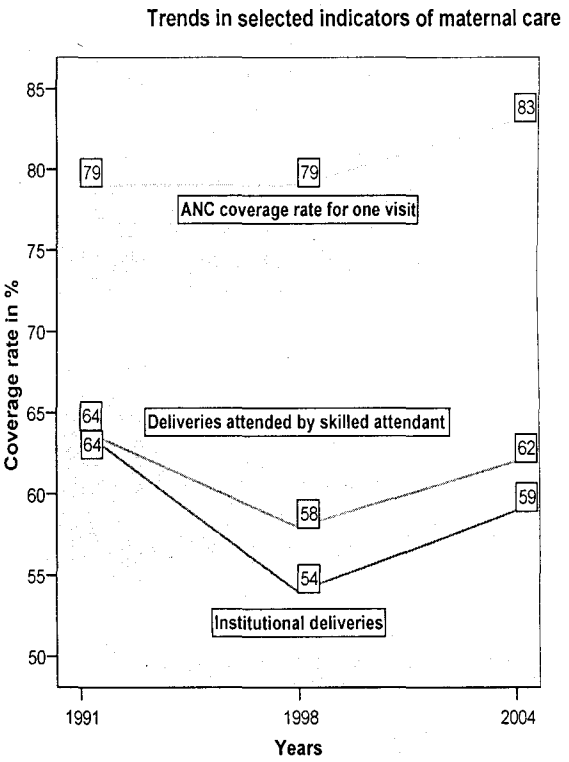

Figure 1- Trends in selected indicators for maternal care in Cameroon.*

Source: Institut National de la Statistique (INS) et ORC Macro. 2004. Enquête Démographique et de Santé du Cameroun 2004. Calverton, Maryland, USA: INS et ORC Macro.

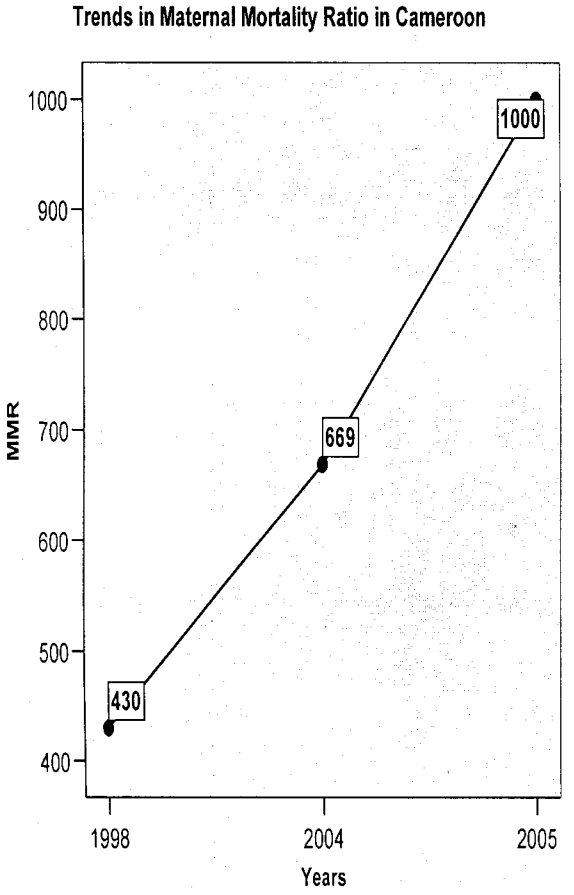

Figure 2- Trends in maternal mortality ratio in Cameroon.*

* Source: Institut National de la Statistique (INS) et ORC Macro. 2004. Enquête Démographique et de Santé du Cameroun 2004. Calverton, Maryland, USA: INS et ORC Macro.

V- REDUCING MATERNAL MORTALITY - PRIORITY ISSUES FOR CAMEROON

The reduction of maternal mortality should be of utmost priority to Cameroon because maternal health is a key marker for human development. It reflects wealth, literacy, status of the woman and health system infrastructure. To broaden the scope of this problem, all other indicators such as Infant Mortality Rate (IMR) and Neonatal Mortality Rate (NMR) are significantly influenced by maternal health and mortality. Addressing the factors that drive maternal mortality will at the same time achieve the result of mortality reduction in neonates and infants thus moving Cameroon closer to achievement of not only MDG5 but also MDG4. Critical success factors for strategically addressing maternal mortality in Cameroon are:

A. Government prioritization and commitment
B. Integrating evidence-based interventions for improving maternal survival

A. Government prioritization and commitment

Performance of a health system is more effective when there is strong governance and effective institutions. Government prioritization and political commitment in terms of leadership and stewardship of financial resources have brought about significant reductions in maternal mortality in other developing countries [12]. It is indeed possible to achieve the same in Cameroon.

B. Integrating evidence-based interventions for improving maternal survival

A large range of evidence-based, cost-effective preventive and treatment interventions are available with potential or documented capacity to improve health outcomes in mothers. Studies in developing countries show that inclusion of such evidence-based interventions in Maternal Neonatal and Child Health (MNCH) programs could prevent 20-30% of maternal deaths and an equal proportion of newborn deaths [13].

The following are some evidence-based interventions that provide a continuum of care from pre-conception through pregnancy to the critical phase of delivery and the immediate post-partum period where a large number of maternal deaths occur:

1. Access to contraception and family planning services

Contraception is one of the evidence-based interventions for reducing maternal mortality. Access to safe contraception can reduce maternal mortality due to unsafe abortion and the obstetric risks of unwanted pregnancies. Maternal mortality has been successfully curbed in Bangladesh by reducing fertility rates. [14] This intervention requires minimal resources and infrastructural modifications and is not dependent on the availability of skilled health personnel. [15] An estimated 20% of obstetric-related and 90% of abortion-related morbidity and mortality could have been avoided in the year 2000 if effective contraception was used by women wishing to stop or postpone childbirth [16].

2. Access to safe abortion

Unsafe abortions are responsible for 4 % of maternal deaths in Africa, [17] and up to 50% of maternal deaths in hospital based studies. [18] The WHO recommends the provision of safe abortion services at the first referral level within the legal and policy framework of the country in question [19]. Abortions are still illegal in Cameroon except for reasons like rape, incest and to save the mother's life. Liberalization of abortion laws has been shown to reduce the number of incomplete abortion cases in hospitals in South Africa. [20] In the absence of adequate legislation to provide safe abortion services for unwanted pregnancies, secondary prevention should include prompt post-abortal care and contraception [21].

3. Expanding antenatal care (ANC) coverage

Antenatal coverage in Cameroon, estimated for one and four visits to be 82% and 60% respectively, has remained relatively unchanged since 1991. Supply problems of maternal health services are widely acknowledged – lack of skilled care at delivery, limited access to EmOC, scarcity of drugs and consumables. However, demand remains a problem of equal proportions and raises the question – why is utilization of health services low even in areas where maternity facilities are available? Having less than four visits and initiating ANC after the fourth month of pregnancy are positively associated with increased maternal mortality [22]. Poor ANC attendance is associated with more abortions, poor obstetric outcomes and maternal mortality [23]. Even though the true value of institutionalized ANC as a sole intervention in reducing maternal mortality and morbidity has been questioned and some authors have suggested a more tailored and aggressive door-step approach, [24] the association between use of ANC services and the use of safe delivery may explain its role in reducing maternal mortality [25].

4. Building capacity for delivering intra-partum care

Intrapartum care involves institutionalized deliveries or adequately supervised home births, deliveries assisted by skilled health personnel and the availability of emergency obstetric care. Maternal deaths in low income countries have been attributed to delays in deciding to seek care, delays in reaching care in time and delays in receiving adequate treatment [12]. Over 17 years, Egypt doubled the proportion of deliveries assisted by skilled birth attendants and reduced its maternal mortality ratio by 50% [26]. Strong evidence exists, suggesting that emergency medical care must be an integral part of any intervention to reduce maternal mortality [27]. The WHO recommends that Cesarean section rates range between 5 and 15% to reduce maternal mortality [28]. With a Cesarean section rate of only 2%, [8] it is clear that there is inadequate access to Cesarean section.

5. Strengthening post natal care

More than 60 % of maternal deaths occur in the postpartum period. The first 24 hours is the period of highest risk. [29] Post natal care, especially in the immediate postnatal period, is recommended to reduce both maternal and infant morbidity. The evidence suggests that high risk groups may benefit more from postnatal services [30].

6. *Community participation in maternal health services*

The community's key role in stewardship of health is evolving, especially in developing countries. Public consultation, community participation and collective ownership of health resources are increasing in some countries. In Burkina Faso for example, participation by community representatives in public primary health clinics has increased the coverage of immunization, the availability of essential drugs, and the percentage of women who get two or more antenatal visits. [31] Recent evidence suggests that even though the provision of skilled services is essential to reduce maternal mortality, community interventions i.e. services provided by lay individuals, in homes, schools or not within the scope of 'usual care' can also reduce maternal mortality [32].

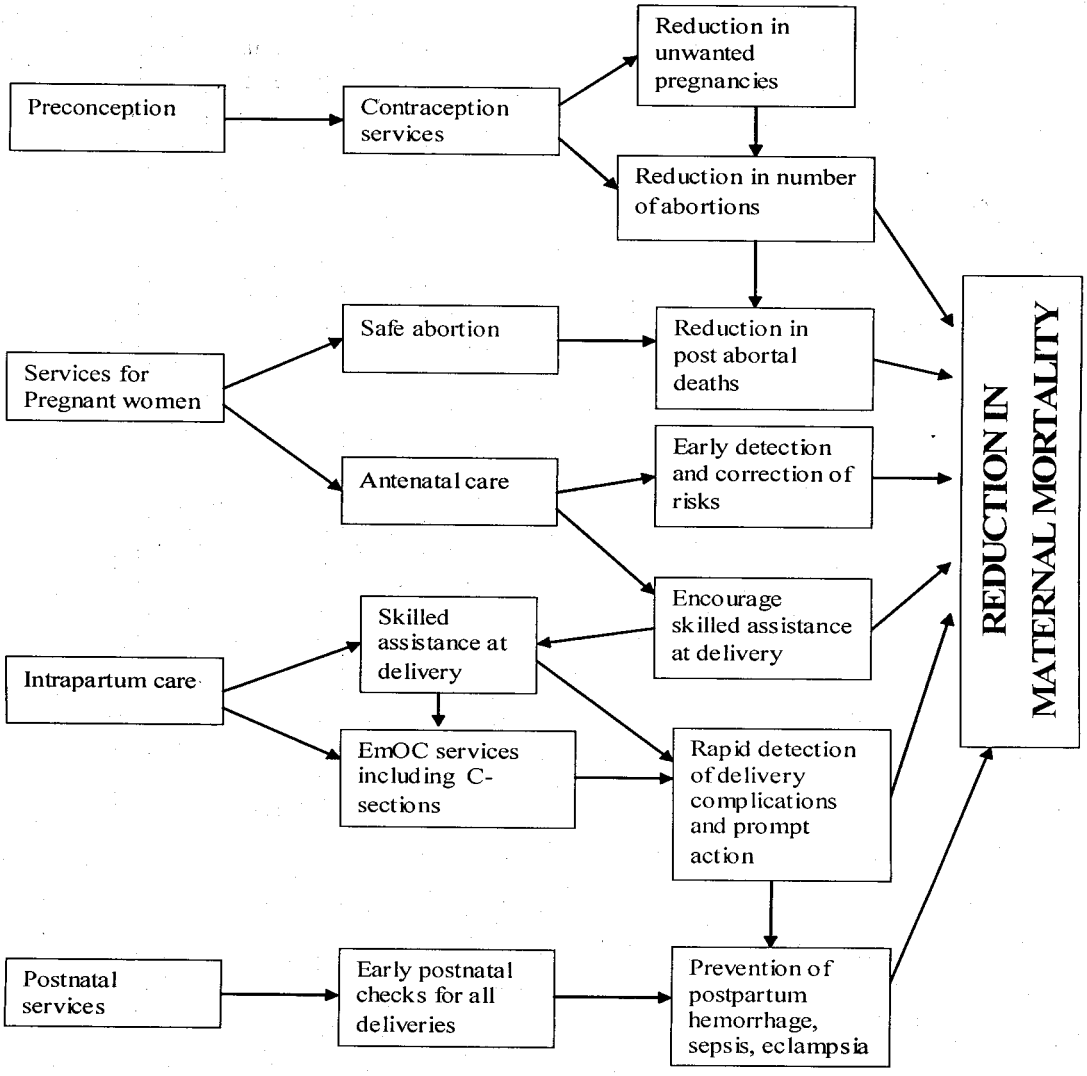

Figure 3- An intervention model.

VI- THEORETICAL STEPS TO MEET MDG-5 BY 2015

- Increase number of deliveries attended by skilled birth attendants to 100%
- Reduce unmet need for contraception to zero
- Legalize abortions
- Ensure 100% national coverage of emergency obstetric care services

VII- RECOMMENDATIONS FOR MEETING MDG5 TARGETS IN CAMEROON

Efforts to improve maternal health and meet the targets for MDG5 must address practically each phase of the continuum of care from pre-conception to the critical phase of the immediate post-partum period.
The following recommendations are suggested to address these lapses in the continuum of care for women of child bearing age.

Box 1- Recommendations for Meeting MDG5 Targets in Cameroon

- Increased social marketing of contraception
- Strengthening health systems - universal coverage of primary health
- Expanding Coverage of Antenatal Care Services
- Legislation on abortion
- Renewed Investment in human resources for health
- Provision of necessary equipment
- Government participation in financing of health care:

i. Scale-up social marketing of contraception

Cameroon has a strong potential for social marketing schemes and has used this strategy in HIV/AIDS control with commendable results. The uptake of contraception from social marketing efforts has not been optimal, most likely due to poverty [33]. Interventions aimed at scaling up these efforts, reducing the prices of all forms of contraception and increasing the availability may make a difference.

ii. Legislation on abortion

Cameroon made an official stand on the question of abortion, which was not in favor of legalization. In as much as moral and traditional values must be upheld, compromises must always be made for the greater good. Abortions are allowed if the mother's life is in danger. With the high rates of teenage pregnancies and the large number of unsafe abortions it may be reasonable to assume that there is a risk to maternal life in most unwanted teenage pregnancies. Redefining maternal risk may be necessary to reduce some maternal deaths. It is also worth noting that the medical practitioners have supportive views to the provision of such services [34].

iii. Strengthen health systems - universal coverage of primary health care

Maternal mortality and morbidity can be reduced by sustained and integrated efforts within gradually expanding and strengthened health systems. The fulfillment of development targets for maternal health is difficult to foresee while large proportions of the Cameroon are yet to be covered by effective primary health care services. The World Health Organization, in its World Health Assembly resolution WHA58.33 called on all member states to plan the transition to universal coverage of primary health care including maternal health services, for their citizens [35]. YATES (2009) recommends that countries not able to achieve universal coverage may start by initially providing free services for pregnant women and children as a strategy towards achieving the MDGs [36]. There is also room for integration of well-funded vertical programs such as HIV/AIDS programs into the maternal healthcare framework. This will enable staff with experience in such overlapping areas as the prevention of mother-to-child transmission, participate effectively in maternal health. Other gaps and weaknesses are the need for strengthened linkages between hospitals, health centers, and the community; capacity building for traditional birth attendants and ensuring appropriate home-based care for mothers and new born babies.

iv. Expanding coverage of antenatal care services

While arguing for strengthened health systems, expanded coverage of antenatal care deserves a special mention. ANC is not currently included in the social marketing package. It should be encouraged more fervently. If more women attend ANC, more women will have skilled birth attendants and maternal mortality will reduce. In a study of women's preferences for place of delivery, the most important facility attributes were a respectful provider and availability of drugs and medical equipment. If these attributes were improved at existing facilities the proportion of women attending ANC and preferring institutionalized delivery would increase by as much as 50% [37]. ANC usage in Cameroon is associated with more education, more wealth and urban residence [7]. This implies that special attention should be paid to the poor, uneducated rural women.

v. Renewed investment in human resources for health

Successful delivery of essential health care services depends on a sufficient supply of health workers. Now more than ever, there is a need for capacity building of human resources for health. The World Health Organization (WHO) found that African countries operating below a threshold of 2.28 health care professionals per 1,000 population (including doctors, nurses, and midwives), were on average, unable to achieve 80 percent coverage rate for deliveries by a skilled birth attendant. [38] In addition to shortages, nearly all African countries including Cameroon, face skill-mix imbalances, uneven geographic distribution, negative work environments, and a weak knowledge base [39]. The lack of health workers is a major bottleneck in implementing evidence-based interventions and remains a significant challenge to meeting the MDGs. Recently established medical schools in Cameroon are an indication of political will to provide better services and coverage for all Cameroonians. It is essential however, that policymakers plan ahead and make clear decisions about the numbers and skill mix of health

workers needed to achieve the MDGs. What grades of personnel will help Cameroon meet her MDGs? More physicians? More nurses, midwives or community health workers? It is expedient that this audit of health workers be done in a framework of urgency as it takes several years to bridge the gap by training health workers and even more time to acquire the skills so critical for delivering effective maternal health services. Mid-level health providers, who undergo shorter periods of training and have less incentive to emigrate, may be the cadre of workers to offer much needed EmOC in rural areas. Approaches to prevent the migration of skilled personnel, strategies to retain trained staff and incentives for workers willing to work in hard-to-reach areas should be explored. There is also a critical need to strengthen research and training capacity in EmOC for staff on the field and to improve remuneration for services provided. Such efforts to bridge training gaps will improve delivery of obstetric interventions and reduce maternal mortality.

vi. Provision of the necessary equipment

Trained staff should not be handicapped by the lack of equipment. The man power and technical infrastructure go hand in hand. Basic kits for uterine evacuation and Cesarean sections should be available at all primary referral levels.

vii. Government participation in financing of health care

Government share of total expenditure on health in sub-Saharan African countries has historically been low compared to household contribution which is mainly in the form of out-of-pocket expenses. Higher levels of government spending will imply less out-of-pocket expenditure on health care and improved access to basic services like skilled birth attendants and EmOC for vulnerable populations like women and children. Removing financial barriers encourages hospital utilization and reduces the financial burden of health on households. User fees were introduced along with structural adjustment programs in sub-Saharan African countries in the 1980s, as a means of improving the quality of health services. The experience seems to be that user fees have been ineffective, inefficient and inequitable as a financing mechanism. Whereas charging pregnant women only USD0.75 for an insecticide treated bednet lessened demand by 75%, removing health fees increases utilization of maternal health services. In Burundi, average monthly number of institutionalized births rose by 61% and the number of caesarian sections went up by 80% after the abolition of fees for maternity services. [36] Universal coverage for health care through social insurance schemes or progressive taxes, will improve access to care for needy women. Fee exemptions for women and children; initiation of community health insurance schemes will offer similar advantages. These are major interventions in reducing maternal mortality [40].

VIII- CONCLUSION

MDG 5 is designed to promote human development by improving maternal well being, but achieving this goal will require reforms in financing mechanisms for maternal health services, extensive revision of the framework for delivering such services and major health workforce investments. Priority issues to be dealt with in the supply of maternal health services in Cameroon have been identified and include access to contraception, safe abortions, expanding the scope of antenatal services, effective intrapartum care including availability of EmOC and offering postnatal care especially in the critical 24 hours after delivery. In addition to improving the quality and quantity of supply, the demand for these various services will also have to be stimulated through social marketing and financing reforms that encourage utilization of health services by removing existing barriers to the most vulnerable populations – women and children in the rural areas.

The prospect of Cameroon meeting its MDG 5 targets is feasible only if there is prompt, aggressive and sustained effort to address these priority issues ■

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