ORIGINAL ARTICLE

Maternal Death and the Millennium Development Goals

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ABSTRACT

Maternal health is one of the main global health challenges and reduction of the maternal mortality ratio, from the present 0.6 mio. per year, by three-quarters by 2015 is the target for the fifth Millennium Development Goal (MDG 5). However this goal is the one towards which the least progress has been made. There is not a simple and straight-forward intervention, which by itself will bring maternal mortality significantly down; and it is commonly agreed on that the high maternal mortality can only be addressed if the health system is strengthened. There is a common consensus about the importance of skilled attendance at delivery to address the high, maternal mortality. This consensus is also reflected in the MDG 5, where the proportion of births attended by skilled health personnel is considered a key indicator. But even if countries invest massive efforts to increase skilled care, there will be a time lag. In addition, there is a need of major investment in human resources to counter the present momentum of emigration of qualified personnel from low income countries. To address the lack of skilled attendance, alternative strategies should therefore be developed and incorporated within the existing health system. One plausible solution could be to involve lower level providers such as community health workers to provide health facility based care under close supervision of authorized midwives. Upgrade of mid-level staff to provide life-saving obstetric surgery may also be an important innovative strategy. Along with the strategy of aiming at increasing the number of health facility based deliveries and the empowerment of non physicians to provide obstetric surgery, some preventive functions of basic care targeting women who prefer to deliver outside the health facilities should be developed. Finally, political leadership, openness to discuss women's rights, including abortion, and involving the community i.e. MDG 3 is essential to attain MDG 5.

MATERNAL DEATH AND THE COMMITMENT FROM THE INTERNATIONAL COMMUNITY

Maternal health is one of the main global health challenges and reduction of the maternal mortality ratio by three-quarters by 2015 is the target for the fifth Millennium Development Goal (MDG 5). However this goal is the one towards which the least progress has been made and complications during pregnancy and childbirth remain a leading cause of death and disability among women of reproductive age in developing countries [1]. The international community has during the past two decades repeatedly dedicated itself to reduce the number of maternal deaths. In 1987, the Safe Motherhood Initiative, a coalition formed by the WHO, UNICEF, the World Bank and the United Nations Population Fund was launched at a conference in Nairobi. It committed itself to cut the number of maternal deaths by half by year 2000. Some years later, in 1994 at the International Conference on Population and Development (ICPD), this goal was reiterated and another target of a further 50% reduction by 2015 was added. In 1995, the Fourth World Conference on Women in Beijing gave substantial attention to maternal mortality and confirmed the commitments made at the ICPD. Now, almost 20 years after the first initiative, these aims have not been realised and the world is still faced with unacceptable high numbers of maternal deaths. The figures speak for themselves: in 1995 an estimated 515,000 women died from complications of pregnancy and childbirth, in 2000 the corresponding figure was 529,000 [2].

ADDRESSING MATERNAL DEATHS

Less than one percent of the 529,000 maternal deaths taking place annually occur in the developed world. The skewed distribution of maternal deaths can be illustrated by the following example: in Malawi, pregnancy complications kills one of 50 women in reproductive age, whereas the same is the situation for one out of 50,000 women in Sweden [3]. Further, for every woman dying, at least 30 others will suffer complications which often end up being long-term and devastating. They include infertility and damage to the reproductive organs. The main causes of maternal deaths are: bleeding/hemorrhage (25%), infections (13%), unsafe abortion (13%), eclampsia (12%), and obstructed labour (8%). Other direct and indirect causes account for the remaining 28% of maternal deaths [4]. There is not a simple and straight-forward intervention, which by itself will bring maternal mortality significantly down; and it is commonly agreed that the high maternal mortality can only be addressed if the health system is strengthened.

Focusing on the health system, to address the poor health among rural populations and to improve maternal and child health, increasing emphasis was, in the 1970s and 1980s, placed on primary health care for all through training of community health workers (CHWs) and traditional birth attendants (TBAs). However, CHWs and TBAs were often just trained briefly and left without a well functioning back up system. As a consequence, concern about whether the initiative at all had a positive impact on maternal deaths was raised and governments were advised to stop training TBAs [4]. Since the 1990s, safe motherhood programmes have instead increasingly focused on the need for skilled attendance and emergency obstetric care.

SKILLED ATTENDANCE

In the early 20th century, industrialized countries halved their maternal mortality by providing professional midwifery care at childbirth and in the 1950s maternal mortality was further reduced by improving access to hospitals [5]. A similar picture has been generated in many low income countries where increased access to skilled attendance with the back up of a well functioning health system has resulted in decreased maternal mortality [6-8]. Based on these experiences, long-term initiatives and efforts to provide skilled professional care at birth are believed to be the way forward when aiming at addressing maternal mortality.

The consensus about the importance of skilled attendance at delivery is also reflected in the MDGs, where the proportion of births attended by skilled health personnel is considered a key indicator for the MDG 5 of improving maternal health and reducing maternal mortality. It has been agreed that concerted efforts should aim at globally increasing the number of births assisted by skilled attendants to 80% in 2005 and 90% in 2015 [9]. However, issues surrounding maternal mortality have proven to be more complex than first realised, and the 2005 goal of 80% skilled attendance was fare from reached: only 50% of the births were assisted by skilled attendance in 2005 [4]. In assuring increased access to skilled attendance, it has to be acknowledged that even if countries invest massive efforts to increase skilled care there will be a time lag. It has been estimated that additional 334,000 midwives need to be trained to assure all pregnant women access to skilled attendance [4]. Training this number of midwives will require new midwifery schools and teachers. In the meantime it will in particular be the poor women in rural communities who will suffer from difficult access to safe delivery care. In addition, retention of workers, especially in the poorest countries, is a global concern, and there is a need of major investment in human resources to counter the present momentum of emigration of qualified personnel [10, 11].

TBAs are not considered skilled attendance, and since 1990, international agencies and academics, without robust evidence, have persuaded governments to stop training TBAs. Furthermore, TBAs, regardless of whether they have received training or not, are in-

creasingly being excluded from having a role in maternity care programmes. Evidence from a meta-analysis of training of TBAs, which identified no effect of training TBAs on maternal mortality [12] has lent support to this decision. The failure to detect an effect in the meta-analyses might, however, reflect difficulties in showing a modest effect on a rare event, such as maternal mortality and the exclusion of TBAs may end up being counterproductive, especially in the present context, where there is severe lack of human resources. Instead of excluding TBAs from providing maternity care, they may be considered as resource persons, who could be involved in maternity care programmes, provided they are working under close supervision from trained nurses/midwives. Hence, alternative strategies where TBAs knowledge and skills are acknowledged and incorporated within the existing health system may prove beneficial. A recent study modelled six possible scenarios of maternity care to test, whether birth attendants trained for a shorter time (six months) versus those trained for longer (midwives) would achieve higher coverage [13]. Facility-based births with skilled midwives and assistants working under their supervision effectively increased the number and proportion of women with professionally assisted births. These findings support the idea of a health care model, where trained TBAs work under close supervision of authorized midwives.

EMERGENCY OBSTETRIC CARE

In addition to facility based skilled attendance, a well functioning health system with provision of equipment, drugs and other supplies is needed for the effective and timely management of delivery complications, which may lead to maternal deaths. Recently, much emphasis has been on making emergency obstetric care available to all women, who need it. It does not imply that all births should take place in well-equipped health facilities, but only that if a pregnant woman develops complications, she should be able to access essential obstetric care. To ensure improved access to emergency obstetric care, a well functioning referral system is mandatory. This means overcoming delays in recognition of complications and in gaining timely access to appropriate emergency obstetric care facilities [14]. Additionally, for those women who develop obstetric complications, a health worker (or team of health workers) who are trained, authorized, and supported to deliver the emergency care required has to be present. Caesarean section is an intervention, which can be life saving for both the mother and the child. In many countries it is only physicians who are authorized to perform caesarean section. However, in rural areas there is often a shortcome of trained physicians. To provide comprehensive emergency obstetric care in such settings, alternative solutions should be sought, such as upgrading midlevel staff to provide life saving obstetric surgery. Evidence from Mozambique, where no difference in post-operative complications and the duration of post-operative hospital stay was found when comparing 958 caesarean deliveries performed by medical assistants trained for surgery with 1133 performed by specialists in obstetrics and gynecology, support such an approach [15]. Similar successful experiences have been achieved in Tanzania and Malawi.

COMMUNITY INVOLVEMENT

As indicated above, the MDG 5 of reducing maternal mortality by three quarters are unlikely to be achieved. One of the reasons for this may be that current safer motherhood programmes, which mainly focus on the importance of deliveries taking place in health facilities by skilled attendance, do not reach the poorest households. As a result of the health facility based focus, community based interventions have been neglected and undervalued [16]. However both policies for skilled care and community care are crucial for an effective health system. This is illustrated in the WHO's model of health systems, which includes the community as a key component. Strong community services promote demand for skilled care. In Nepal, community based interventions which aimed at involving women's groups and strengthening the health system increased uptake of antenatal and skilled delivery care and led to a significant reduction in both neonatal and maternal deaths [17]. Further, a meta-analytic review of effectiveness of TBA training to improve access to skilled birth attendance found positive associations between TBA training and TBA knowledge of the value and timing of ANC services, TBA behaviour in offering advice or assistance to obtain ANC, and compliance and use of ANC services by women cared for by TBAs or living in areas served by TBAs [12].

In spite of strong advocacy for facility based deliveries, some women will choose to deliver at home either with a skilled attendant, an CHW or an TBA. For mothers who deliver at home, facility based obstetric care alone is not likely to be a credible strategy for reducing maternal death. Therefore, along with the strategy of aiming at increasing the number of health facility based deliveries, some preventive functions of basic care targeting women who prefer to deliver outside the health facilities should be developed. Such strategies have been evaluated and found to be associated with low maternal mortality ratio in e.g the Netherlands and Malaysia [18]. Since the majority of all maternal deaths are caused by hemorrhage, one compelling strategy to reduce maternal mortality could be provision of oxytocin by CHW or TBAs [19]. If such an approach is utilized for treatment of postpartum haemorrhage it might prevent many of the 140,000 annual maternal deaths from haemorrhage [20]. Evidence from Tanzania where TBAs were trained to recognize post partum hemorrhage and to give misoprostol, supports such a course [21]. Likewise, acknowledging that infections are the second-most important cause of death, the lives of many mothers may be saved, if antibiotics were made more easily accessible for CHWs and TBAs [20].

UNSAFE ABORTION

It has been argued that the MDGs are too conservative, since they are not addressing one of the major contributors to the high maternal mortality, namely unsafe abortion. Every year 68,000 women die as a consequence of complications from unsafe abortions, making it one of the most significant contributors to the 529,000 annual maternal deaths. The target of reducing the maternal mortality ratio by three-quarters by 2015 is not likely to be achieved if the problem of unsafe abortion is not addressed too. In addition, treatment of abortion complications represents a significant burden to health care systems in countries with restrictive abortion laws; in some hospitals women admitted with incomplete abortion account for 50% of all gynaecological and obstetrical patients; and it has been shown that the majority of these women have in fact had an unsafe abortion [22, 23]. Debate has been ongoing about the negligence of unsafe abortion in the millennium development framework, especially in the context of the ICPD. At the ICPD meeting it was, after significant debate and discussion, decided to give priority to unsafe abortion and thereby reducing the negative impact of unsafe abortion on women's health. It was further acknowledged that achieving the ICPD goal of a 50% reduction in maternal mortality by the year 2000 would not be accomplished without a serious, long-term commitment to addressing the consequences of unsafe abortion. The ICPD commitment to address the problem of unsafe abortion is reflected in Paragraph 8.25 in the ICPD Programme of Action, which acknowledges that improving abortion-related care is an essential strategy for improving women's health. On this background and based on years of advocacy by NGOs on the need to integrate sexual and reproductive health objectives into the MDGs, it was in 2005 suggested that the risks women face from unplanned births and unsafe abortion should be incorporated into the monitoring of the MDG framework [24]. In October 2006, the United Nations' General Assembly gave its endorsement to include universal access to reproductive health by 2015 as one of the international community's Millennium Development targets [25].

CONCLUSION

Up till year 2007, reducing maternal mortality has been the least successful among the MDGs. With only eight years left, it is more than doubtful, that the goal will be reached by year 2015. However, research has shown the way to some essential approaches, namely reconsidering inclusion of TBAs, upgrading mid-level health staff, supervising and encouraging staff, among others by trusting its capability to use oxytocin and antibiotics, and even do obstetric surgery, and at the same time attempting to reverse brain-drain of qualified health staff. Political leadership and willingness to discuss women's rights, family planning and safe abortion openly, i.e. MDG 3 ("promote gender equality and empower women") and involving the community in general are as essential for MDG 5 ("improve maternal mortality") as for achieving MDG 6 (combat HIV/AIDS, Malaria and other diseases).

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