



# Prevention of Maternal Mortality in Nigeria: Public Health to the Rescue



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## Introduction

Maternal mortality; the death of a woman during pregnancy and within 42 days of delivery irrespective of the gestational age and site of the pregnancy; continues to be a source of public health concern especially in developing countries where maternal mortality indices show high levels of prevalence of these pregnancy-related deaths. Although there has been a reduction in the number of deaths over the years till date, there remains a considerable gap of what has been left undone. The need to ensure good maternal health can never be over-emphasised especially as the mother has a significant impact on the welfare of the family. The death of a mother may be the beginning of poverty, malnutrition, lack of education for children and a myriad of other adverse socioeconomic effects which affects her family and the society at large [1-4].

## Maternal Health and Mortality

Maternal health is an essential subject with enormous global and economic implications in the life of humans. Ensuring the continuity of populations is critical. The health of a woman during pregnancy, childbirth and within the weeks after childbirth is essential to ensure the adequate wellbeing of the home and family especially in matters relating to childbirth, childcare, breastfeeding, home care etc. Reproductive health is defined as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and its functions and processes [5,6].

In order to address the issues of preventing maternal mortality and promoting maternal health globally, several conferences and measures have been held; they include the

United Nations Decades for Women Population Conference which was held in Mexico (1984), the Safe Motherhood Initiative which was launched in Nairobi, Kenya (1984), the International Conference on population and development in Cairo, Egypt (1994), the Beijing Conference for Women (1995), the maternal health targets of the Millennium Development Goals as well as the Sustainable Development Goals set in the years 2000 and 2015 respectively, the Maputo Declaration and Action Plan, Safer Pregnancies Initiative, Mother Care Project (1988-1998) amongst others. The implementation of these programmes and initiatives has indeed contributed to the lowering trends of maternal mortality ratios (which is the number of maternal deaths per 100,000 live-births) around the world with maternal mortality ratios as low as 6 per 100,000 live-births present in Australia. However, in developing countries, despite reducing maternal mortality ratios, the number of maternal deaths remains unacceptably high with maternal mortality ratios of 814 per 100,000 live-births in Nigeria, 319 per 100,000 live-births in Ghana, 121 per 100,000 live-births in Morocco etc. Sub-saharan Africa has been reported to have the highest maternal death proportions of about 56% of global maternal deaths [1,3,7,8].

## Maternal Mortality in Nigeria

In Nigeria, despite the administration of a wide range of maternal health service strategies including free antenatal care, training of skilled birth attendants etc.; as well as the availability of resources, the situation of maternal health remains one of the worst in Africa as evidenced by prevailing maternal mortality ratios [7]. Nigeria contributes greater than 10% of maternal deaths globally [5,9].

This prevailing problem in Nigeria is strongly linked to the weak implementation of maternal health policies and services as well as the presence of a number of cultural and socioeconomic factors [10] including lack of funds, lack of birth preparedness etc. The maternal health care system in Nigeria is one which is characterized by traditional, faith-based and orthodox health providers. The presence of factors such as traditional and faith-based health providers linked with the socioeconomic and deleterious cultural determinants of maternal health can be implicated as a plausible reason for the seemingly weak health system. This implication is evident in the number of pregnancies being managed by these non-orthodox methods; the inability to recognize danger signs in pregnancy and the ensuing high maternal death rates [4,11-13].

Apart from the problems posed by these factors, maternal health is also plagued with problems of poverty, illiteracy, lack of knowledge, delay in reaching health facilities either due to inaccessibility, poor roads, poor communication networks, poor transportation systems or long distances to be covered as well as delays in receiving appropriate care at health facilities which is characterized by absence of quality maternal health services, inadequacy of skilled birth attendants, inadequate medical supplies during labour, delivery and after the delivery; There is thus the need to focus on prevention of maternal deaths in Nigeria by tackling these problems affecting the ability of pregnant women to access timely and quality maternal health services [14-16].

### Public Health Strategies to Prevent Maternal Mortality in Nigeria

The prevention of maternal mortality and consequent improvement in the maternal health of Nigerian women is an all-encompassing task, which though tedious; is achievable through concerted efforts of health care providers, members of the society and government as a whole. There is an existing inter-relationship between these above-stated factors which is evident in poor government health and socio-economic expenditures required to ensure the health and well-being of a populace whose health-seeking behaviours are poor either as a result of poverty, cultural beliefs etc. This, in turn, results in diminishing health indices and in the case of this paper: higher numbers of maternal mortality. There is thus the need of implementing actions that would improve an all-around commitment of government (through policies, funding etc.); the society (through improved health-seeking behaviours, change of bad cultural habits and lifestyles etc.) and health care providers (through the provision of quality and effective health care services [8,16]. This illustration of maternal mortality (which is an event) in terms of epidemiology is best described using the epidemiological triad to show the various risk factors that interplay in causing this health problem. Firstly, women of reproductive age are shown as the host with a number of factors including nutritional status, illiteracy, ignorance, age as well as genetics playing

important roles. Causative agents include mainly post-partum haemorrhage, eclampsia, obstructed labour as well as puerperal infections. Environmental factors in this triad include the social dis-empowerment of women, delay in health-seeking behaviour, political-based influences and harmful traditional practices amongst others [11-16].

To effectively prevent and control the occurrence of maternal mortality, there is the need to apply another epidemiological principle based on the application of the different levels of prevention including primordial, primary, secondary, tertiary and quaternary levels of prevention [12,14].

### Primordial Prevention of Maternal Mortality

Primordial prevention deals with inhibiting the development of risk factors associated with the development of cases of maternal mortality. Primordial prevention consists of actions to minimise future hazards to health and hence inhibit the establishment of factors (environmental, economic, social, behavioural, cultural) known to increase the risk of disease [3,5].

Examples of primordial prevention include health promotion to change wrong and harmful cultural beliefs and practices including female genital mutilation (FGM) as well as early and forced marriage etc.; which unnecessarily exposes the girl child and women as a whole to preventable mortalities and morbidities. Despite the drive to eliminate these harmful practices, these practices are presently accepted as a cultural norm in areas where they are practised in Nigeria; as they see them as an avenue to be admitted to their society as well as being held in high esteem in these societies. A re-orientation of the affected areas (using a bottom-up approach) to see the dangers in these practices is thus an essential move in the right direction [17,18].

### Other Examples Include

Improving sanitation through education, re-orientation from the poor sanitary habits as well as provision of necessary amenities to ensure adequate sanitation. This is necessary as it prevents exposure to infectious agents which are known causes of maternal mortality. Provision of education for the girl-child and mothers which has been shown to be beneficial in reducing early marriages, advancing women's empowerment, family planning and reproductive health [8,19].

Establishing healthy communities, promoting a healthy lifestyle in childhood which translates into better lifestyles adopted in adulthood as a woman (for example, through prenatal nutrition programs and supporting early childhood development programmes), or developing green energy approaches. Similarly, increasing sports programmes in schools may help reduce obesity in subsequent generations. As these are all population-level programmes, primordial prevention is conceptually linked to population health and health promotion. However, clinicians can play a role by bringing problems to notice and advocating for action on determinants [8,9,16,20].

## Primary Prevention

Primary prevention of maternal mortality deals with inhibiting the occurrence of maternal mortality in women of childbearing age whom have been or are exposed to certain risk factors liable for worsening the incidence of maternal mortalities. This is achievable through alterations of behaviours and exposures that result in increased maternal mortality prevalence. They aim to promote healthy behaviours, improve host resistance, and foster safe environments that reduce the risk of disease/adverse event occurrence [1,2].

This is done through general health promotion and specific protection with examples including focused antenatal care which emphasizes targeted and individualized care planning as well as birth planning; proper nutrition which is essential for adequate growth and development as well as the ability to effectively protect the body from infection and disease processes; campaign against adolescent pregnancies which is critical for ensuring that the girl child can attain quality education and fully realize their potential [2,4].

Others include the provision of family planning services, reproductive health promotion, provision of accessible, affordable, quality essential obstetric care services; encouraging the utilisation of these reproductive health services, improvement of public health services as well as thorough cleaning of operating rooms to prevent post-operative infections and sepsis amongst others [4,9,21].

## Secondary Prevention

Secondary prevention of maternal mortality involves the early detection and prompt treatment of pre-clinical pathological changes occurring during pregnancy (prenatally), during birth (perinatally) as well as those occurring after delivery (postnatally). These contribute to preventing the progression of such pathologies into adverse consequences including maternal death. Secondary prevention of maternal mortality also involves the provision of safe pregnancy termination services especially for instances when pregnancy poses a danger to the health of the mother etc.

Secondary prevention is achieved through the provision, training and retraining of skilled birth attendants at designated health facilities at the time of delivery of all pregnant women as well as to adequately manage complicated deliveries; provision of necessary obstetric equipment, instruments and materials amongst others [4,5,15].

## Tertiary Prevention

Once a complication has occurred during pregnancy, and it has been treated in its acute clinical phase, tertiary prevention seeks to soften the adverse impact caused by the disease on the patient's function, longevity and quality of life. Examples include cardiac rehabilitation following a cardiomyopathy, seeking to

alter behaviours to reduce the likelihood of another adverse cardiac event.

Tertiary prevention can include modifying risk factors, such as assisting a cardiac patient to lose weight or making environmental modifications to reduce an asthmatic patient's exposure to allergens. Where the condition is not reversible, tertiary prevention focuses on rehabilitation, assisting the patient to accommodate his disability. For reversible conditions, such as many types of heart disease, tertiary prevention will reduce the population prevalence, whereas for incurable conditions it may increase prevalence if it prolongs survival [2].

Quaternary prevention is the set of health activities to mitigate or avoid the consequences of an unnecessary or excessive intervention of the health systems. This can be achieved through education of relevant stakeholders of this part of the health sector to ensure that a standard is maintained in the care of every pregnant woman and that this group of women can achieve and maintain a good quality of life. [4].

The role of public health strategies in the prevention of maternal mortality is enshrined in the Sustainable Development Goals (SDG) 3 and 5 which propose to ensure healthy lives, promote well-being for all at all ages and ensure gender equality through specific actions including "ensuring universal access to sexual and reproductive health care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes by 2030." These cut across all through the various levels of prevention as elucidated in this discourse. Family planning is at the primary level of prevention to prevent unwanted and mistimed pregnancies. The secondary level of Prevention is achieved through safe termination of a pregnancy when not wanted, or the continuation of a wanted pregnancy to term through quality antenatal and delivery care. Tertiary Prevention is achieved through the management of complications of pregnancy that lead to maternal deaths [22].

## Conclusion

The prevention of maternal mortality is essential in ensuring sustainability of the human race through preservation of those whose role it is to procreate. Ensuring that these individuals who play a vital role in family welfare across the globe are preserved is a duty for all stakeholders. The need for the protection of maternal health can never be overemphasized. We call on all stakeholders to advocate and implement these time honed public health strategies for protecting maternal health and preventing maternal deaths.

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