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Maternal Mortality in Zimbabwe
Evidence, Costs and Implications

I. SUMMARY

An estimated 3000 women die every year in Zimbabwe during child birth and at least 1.23% of GDP is lost annually due to maternal complications. According to the MMIEG, maternal mortality has worsened by 28% from 1990 to 2010. Most of what needs to be done is known. Past efforts have managed to sustain high levels of ANC visits among pregnant women and skilled birth deliveries yet maternal mortality estimates remain high. While innovative thinking supported by a stronger vital registration system is needed for progress towards reducing maternal mortality, quality of care in maternal health services seems to be the missing link. In addition, there is need to progressively expanded the scope and entitlements of maternity protection and provide perspectives for policy and action.

II. INTRODUCTION

Maternal mortality is a global concern and a consensus has been reached that the health of mothers and children is an important indicator of national health and the socio-economic development of countries. In 2000, the reduction of maternal mortality was adopted in the global action plan under Millennium Development Goal (MDG) 5. The Partnership for Maternal, Newborn and Child Health and the Countdown to 2015 initiative, which track health systems and policy environments for improving maternal, newborn and child health have put maternity protection as part of global and national initiatives for improving maternal and newborn health. The Countdown to 2015 initiative seeks to promote government leadership and intersectoral action for protecting pregnant and breastfeeding women and their infants, providing a strong call for collaboration between actors in health and labour sectors.

Despite the commitment set out in the millennium development goals, maternal mortality remains unacceptably high in many parts of the world. In 2010, an estimated 285,000 maternal deaths occurred globally marking a decline of in maternal mortality ratio (MMR) of 47% from the 1990 levels[1] . However, the decline has not been uniform across the globe as Sub-Saharan Africa shoulders over half (56%) of the maternal mortality burden[2] . For every woman who dies, roughly 20 suffer serious injury or disability. Babies and young children who have lost their mothers in childbirth are up to ten times more likely to die prematurely than their peers. Inequities and challenges such as armed conflict, natural disasters and HIV/AIDS hamper progress, with child and maternal mortality concentrated in the world's poorest countries, primarily in sub-Saharan Africa and South Asia.

Zimbabwe is ranked among the 40 countries in the world with high MMR of over 960 maternal deaths per

1 WHO, UNICEF, UNFPA & the World Bank, 2012. Trends in maternal mortality 1990-2010. World Health Organisation: Geneva

2 Ibid

100,000 live births[3] . Having made remarkable progress during the first decade of independence in improving access to health services through the Primary Health Care approach, which enabled access to basic health care services for about 85% of the population, resulted in a 20% decline in mortality rate. Unfortunately the country then failed to sustain this progress. As a result, the country has not made any progress from the 1990 MDGs base year maternal mortality levels. This is partly due to the prolonged political and economic crisis in the country and has been exacerbated by the HIV/AIDS epidemic for the last two decades[4] . It is estimated that around 3000 maternal deaths occurred in Zimbabwe in 2010[5] . This note reviews evidence on Zimbabwe related to maternal mortality, highlighting the associated costs and draws implications in a bid to refocus efforts towards ensuring safe motherhood.

III. MATERNAL MORTALITY ESTIMATES IN ZIMBABWE

Maternal mortality, defined[6] as the death of a woman while pregnant or within 42 days of termination of pregnancy, regardless of the site or duration of pregnancy, from any cause related to or aggravated by the pregnancy or its management, is hard to measure in the absence of a complete registration of deaths and accurate ascertainment of cause of death[7] . Efficient allocation of resources is difficult in the absence of reliable data on maternal mortality. Zimbabwe, through the Ministry of Health and Child Welfare (MoHCW), implements a national Maternal Death Notification System (complementary to the national Health Management Information System) aimed at strengthening tracking, monitoring and reporting of maternal mortality in the country[8] . This system is far from complete. Of the estimated 3000 maternal deaths in 2010, the Maternal Death Notification Systems recorded only 408[9] deaths. The systems only pick up deaths happening in health institutions and not missing deaths that happen outside institutions and those not attended to by professional health care staff. In addition, women who return home from a hospital or health center and die later from complications are often not reported. About a third (35%) of mothers in Zimbabwe do not deliver in health institution and over half (57%) of mothers do not come back for post natal checkup[10] .

> Key message: Weak vital registration systems complecates measurement and monitoring of maternal mortality
>
> Implication: Strengthening the existing Health Management Information & Vital Registration System is important in improving monitoring of maternal deaths in Zimbabwe.

Any death occurring among these is not likely to recorded. A well-functioning civil registration and vital (CRVS) system, with good attribution of cause of death provides accurate data on the level of maternal mortality and the causes of maternal deaths[11] . This information is important in refining targeting and ensures efficient

3 Ibid

4 UNICEF. (2010b). Situational Analysis on the Status of Women and Children in Zimbabwe: A Call for Reducing Disparities and Improving Equity 2005 to 2010. Harare: UNICEF, CASS & GoZ

5 WHO, UNICEF, UNFPA & the World Bank, 2012. Trends in maternal mortality 1990-2010. World Health Organisation: Geneva

6 International statistical classification of diseases and related health problems, 10th revision (ICD-10) (9), WHO

7 Hill K, El Arifeen S, Koenig M, Al-Sabir A, Jamil K, & Raggers H. 2006. How should we measure maternal mortality in the developing world? A comparison of household deaths and sibling history approaches. Bulletin of the Wealth Health Organisation 84(3): 161-256

8 MoHCW. An Analysis of Notified Institutional Maternal Deaths: January 2010 – December 2011

9 ibid

10 DHS 2010/11

11 WHO, UNICEF, UNFPA & the World Bank, 2012. Trends in maternal mortality 1990-2010. World Health Organisation: Geneva

allocation of resources in the fight against maternal mortality. The existing CRVS, run by Registrar General Department in conjunction with MOHCW and ZIMSTAT, relies heavily on the incomplete HMIS. In the absence of a reliable vital registration system maternal mortality is measured through national survey and modeling, which often yield different estimates. Maternal mortality is a rare event from a statistical point of view which makes its measurement through surveys difficult[12] .

Maternal mortality figures in Zimbabwe vary widely by source. Data from the 2010/11 Demographic Health Survey (DHS) indicate that the maternal mortality ratio (MMR) in Zimbabwe stands at 960 deaths per 100,000 live births (uncertainty range 778-1142 deaths per 100,000 live births) having increased from 612 deaths per 100,000 live births (uncertainty range 458-767 deaths per 100,000) recorded in the 2005/06 DHS based on a seven year recall period (Figure 1). The MMR for DHS 1994 and 1999 (indicated as independent points in the graph) are based on a 10 and 4 year recall period respectively and are therefore not directly comparable to 2005 and 2010 figures. Estimates obtained from models developed by the Maternal Mortality Inter-Agency Group (MMIEG) show that the MMR increased during the last two decades from 450 deaths per 100,000 live births in 1990 to about 690 deaths per 100,000 live births in 2005. The latest MMR (2010) ranges from 320 to 920 deaths per 100,000 live births with an average of 570 deaths per 100,000 live births 2010. Whichever figure one looks at, the MMR in Zimbabwe is unacceptably high and global commitments remain far from reach. According to the MMIEG, maternal mortality has worsened by 28% from 1990 to 2010. ZDHS figures suggest at least a two fold increase in the MMR from 1994 to 2010.

> Key message: Maternal mortality in Zimbabwe increased by at least 28% from 1990 to 2010.
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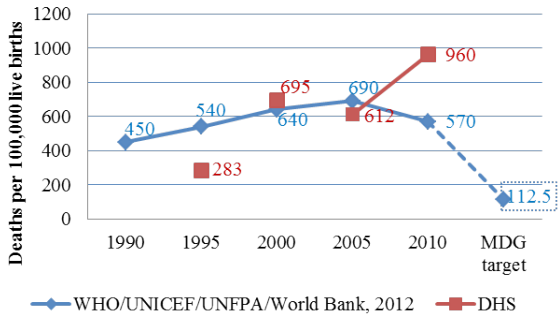
> Implication: Review current strategies and focus efforts on provision of proven and eddtrengthening the existing Health Management Information & Vital Registration System is important in improving monitoring of maternal deaths in Zimbabwe.

Figure 1: Maternal Mortality Ratio in Zimbabwe



IV. MAJOR CAUSES OF MATERNAL MORTALITY IN ZIMBABWE

Various studies have outlined the causes of maternal mortality in Zimbabwe. The Zimbabwe Maternal and Perinatal Mortality Study (ZMPMS)[13] of 2007 identified the leading direct causes of maternal mortality in Zimbabwe as post-partum hemorrhage, pregnancy induced hypertension and puerperal sepsis. Leading indirect causes include HIV and AIDS which account for about 26% of all maternal deaths. The MMIEG attributes about 39% of maternal deaths to AIDS related indirect causes. The ZMPMS findings are consistent with regional studies on maternal mortality which rank hemorrhage as the top killer followed by hypertension (Figure 2). Most causes of maternal deaths could be addressed

> Key message: Maternal mortality remains high despite high levels of ANC and skilled birth attendance.
>
> Implication: Renewed efforts required to ensure quality of care in the provision of maternal health services.

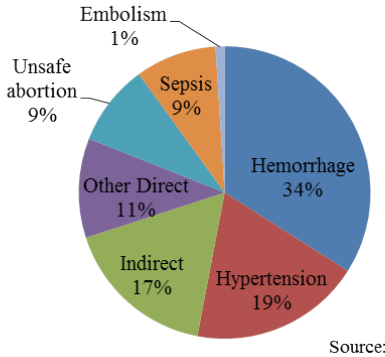
12 Yazbeck, A.S. 2007.Challenges in measuring maternal mortality. The Lancet, 370(9595):1291 - 1292

13 Munjaja S, Nystrom L, Nyandoro M, Magwali T .2007. Maternal and Perinatal Mortality Study. Ministry of Health and Child Welfare

successfully by access to emergency obstetric care (EmOC).

Findings from the ZMPMS show that skilled antenatal care (ANC) and birth attendance are facilitators to addressing the delay in deciding to seek health care services and the delay to access care at the health facility which happen to account for about 67% of maternal deaths in Zimbabwe. Studies elsewhere have shown that higher skilled birth attendance is associated with lower maternal mortality rates[14 15] . The country has sustained high levels of ANC visits (90%)[16] among pregnant women and skilled birth deliveries (66%)[17] over the past five years yet maternal mortality remains high. Part of the problem lays in the quality of care. The National Integrated Health Facility Assessment (NIFA)[18] offers some explanation to the phenomenon. Of the observed ANC case management by health workers, only 14% met the standard to identify danger signs in pregnancy with only 4% and 2% inquiring for fever and convulsions respectively. Only about 2% screened for pre-eclampsia signs during ANC while only about 11% assessed for pre-eclampsia/eclampsia (testing urine for protein) during labour and delivery. Of the observed health workers, less than half (46%) provided all routine preventative medicines. Slightly more than a third (36%) provided education on birth preparation, while only 12% provided adequate counselling on danger signs in pregnancy. The deterioration in quality of care in health institutions could be partly responsible for the increasing maternal mortality in Zimbabwe.

Figure 2: Causes of maternal deaths in Sub-Suharan Africa, 1997-2007



Source: WHO 2010

At the very heart are the gender disparities that contribute greatly to the state of women's health and economic empowerment in many countries. Age-old patriarchal traditions and existing gender role models based on male superiority weigh in heavily. Countless women lack access to decent work that enables them to rise out of poverty or work in safe conditions; many fall outside of traditional legal and social protection systems that safeguard against vulnerability and provide access to health care; many have yet to realize freedom from discrimination and face dismissal on the basis of pregnancy or maternity; and many lack the voice and representation to better their lives.

> Key message: Women from poor household, rural areas and Apostolic faith are at a higher risk of maternal mortality.
>
> Implication: Engage the Apostolic community and revitalise the village health worker programme in order to deliver services closer to the communities in rural areas.

V. INEQUITIES AROUND MATERNAL MORTALITY

Maternal mortality figures obtained from the ZDHS data does not allow a meaningful equity analysis to be carried out. From the ZMPMS, we know that about three quarters (73%) of all maternal deaths are attributable to the three delays namely: (1) the delay in deciding to seek health care services (56%); (2) the delay to reach a health care facility once a decision to seek care has been made (5%), and (3) the delay to access care at the health facility (11%). Further, the findings indicate that the risk of maternal death

14 Nour N M.2008. An introduction to maternal mortality. Reviews in obstetrics and Gynecology 1(2) 77-81

15 Graham J W, Bell S J & Bullough HW C. Can Skilled Attendance at Delivery Reduce Maternal Mortality in Developing Countries? Centre for Research on Women's Health, Department of Obstetrics and Gynecology, Aberdeen Maternity Hospital

16 DHS 2010/11

17 Ibid

18 MoHCW.2012. The Zimbabwe National Integrated Health Facility Assessment report

increased significantly by delivering outside institutions, operative delivery, delivery by non-skilled persons and belonging to the Apostolic faith religious groups. Affiliation to the apostolic faith (which constitutes about 33% of the population) has been linked to limited use of modern health care facilities as a result of the teaching, doctrine and regulations of the ultra-conservative Apostolic groups in Zimbabwe[19]. A secondary analysis of ZDHS 2010/11 data on health seeking behavior which carries implications on the first two delays corroborates the ZMPMS study. The results from the study suggest that affiliation with Apostolic faith is a substantial and significant risk factor in reducing the utilization of maternal health services[20]. Other significant factors identified by the secondary analysis study included women's education, household wealth status and place of residence. The significance of household wealth status has implications across the three delays. The requirement to pay user fees to access health services further drives a wedge between women from poor and the rich households. Limited health, communication and transport service coverage leave a lot of women at risk, mainly through the second and third delay in rural areas where service coverage is sparse. We know from past studies that non usage of modern health care services puts pregnant women at higher risk of mortality[21]. From the recent ZDHS 2010/11, we also know that lowly educated women, women from rural areas and poor households are less likely to have ANC visits to skilled personnel, deliver in a health facility and be attended to by a skilled health professional during delivery. Although additional evidence is required, this evidence suggests that lowly educated women, women from poor households and rural areas are at a higher risk of mortality compared to their educated counterparts and women from richer households and urban areas.

> Key message: At least USD 132 million is lost to the economy due to current maternal health complications.
>
> Implication: Investing in maternal health is a wise social and economic policy decision.

VI. COSTS IMPLICATIONS OF DETERIORATING MATERNAL HEALTH TO THE NATION

In a bid to highlight that investing in maternal health is a wise social and economic policy decision, the costs of maternal conditions of the recent past under the assumption that no additional efforts are invested was calculated. Investing in improving maternal health can translate into improvements in food security and nutrition at community and national levels as women constitute over half (55%)[22] of the labour in the agricultural sector, the mainstay of Zimbabwe's economy, and are estimated to produce over 80%[23] of the food supply. The contribution of female labour goes far beyond the agricultural sector as we know from the recent labour force survey that over half (54%) of Zimbabwe's working age population are females whose income is spent predominantly on the welfare of families[24 25]. There are, therefore, numerous macroeconomic benefits

19 Maguranyanga, B. (2011). Apostolic religion, health and utilisation of maternal and child health services in Zimbabwe. Unpublished research report. Collaborating Centre for Operational Research and Evaluation, UNICEF and M consulting group

20 Ha W, Salama P, Gwavuya S. (In press). Equity and Maternal and Child Health- Is Religion the Forgotten Variable? Evidence from Zimbabwe. Paper submitted for publication under Global Thematic consultation for the post 2015 Development Agenda, UNICEF/UNWOMEN

21 Graham J W, Bell S J & Bullough HW C. Can Skilled Attendance at Delivery Reduce Maternal Mortality in Developing Countries? Centre for Research on Women's Health, Department of Obstetrics and Gynecology, Aberdeen Maternity Hospital

22 ZIMSTAT.2012. 2011 Labour force Survey. Zimbabwe National Statistics Agency: Harare

23 International Labour Organization .2009.Global Employment Trends for Women, ILO: Geneva

24 ZIMSTAT.2012. 2011 Labour force Survey. Zimbabwe National Statistics Agency: Harare

25 Safe Motherhood Interventions in Low-income Countries: an economic justification and evidence of cost Effectiveness. Health Policy 53 (3):201-228

to increased worker productivity from those living in healthier households and from the women whose lives are improved by maternal health intervention, which translates into growth in the national income. Mortality reduction targets as expressed in the MDGs do not address any of the chronic non-fatal, physical and or socially disabling consequences which are more likely to happen than the maternal death itself[26] .

An attempt to measure the losses in both maternal mortality and the disabling consequences is being made through the Disability Adjusted Life Years (DALYs). According to WHO 2004 estimates, about 2,593 DALYs per 100,000 females are lost per year in Zimbabwe due to maternal causes[27]. Using current population figures, at least 174,739 DALYs will be lost each year if nothing more is done in addition to the current efforts in maternal health. Valued at the per capita GDP of US$757[28], the country is losing at least US$132 million (1.23% of the 2012 National GDP) per year in potential national income as a result of maternal related conditions (Table 1). While cost effective interventions in maternal health have since been identified through studies carried out in other countries[29] , little evidence is available for cost effective maternal health interventions specific for Zimbabwe.

The 2007-2015 road map[30] on maternal and neonatal health outlines a comprehensive package of maternal health services which include family planning, antenatal care, clean and safe delivery, including essential obstetric and neonatal care which are considered to be cost effective but no evidence is provided to that effect. Funding to the health sector remains far below national and international targets. The 2013 budget shows that per capita allocations towards health of US$18 is about half of the recommended US$ 34 by the National Health Strategy (2009-2013) and remains below the 15% Abuja Declaration target (currently at 10% of total expenditure)[31] .

VII. INTERVENTIONS UNDERWAY TO REDUCE MATERNAL MORTALITY

It is important to underline that Maternal Health is reflective of the status of the overall Health System. The better and more effective the Health System, the better the Maternal Mortality Ratio is likely to be.

Directly or indirectly, the following activities by the UN are supporting the improvement of Maternal Health in Zimbabwe:

1. Reforms of policies that contribute towards the well-being of the mother and newborns

i. Technical and financial support to the Health Sector Investment case

ii. Technical and financial support to the Child Survival Strategy

iii. Technical and financial support for the new Postnatal Care Guideline

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26 Nieburg P. 2012. Improving maternal mortality and other aspects of women's health. Center for Strategic and International Studies (CSIS): Washington

27 WHO.208. The global burden of disease: 2004 update. World Health Organisation: Geneva. Available at www.who.int/evidence/bod

28 2011 World Bank estimate

29 Borgi J. What Is the Cost of Maternal Health Care and How Can it Be Financed available on http://www.jsieurope.org/safem/collect/safem/pdf/s2941e/s2941e.pdf accessed 25 January 2013

30 MoHCW.2007. The Zimbabwe National Maternal and Neonatal Health Road Map 2007-2015. GoZ: Harare

31 Ministry of Finance, 2013 National Budget

iv. Technical and financial support to the Food and Nutrition Policy

v. Technical and financial support for the change of immunization schedule

vi. Technical and financial support for the introduction of Newborn Corners and Helping Babies Breath in Zimbabwe

2. Direct programme support

i. Support to midwifery school procurement of training materials and equipment

ii. Support to the national midwifery training program and recruitment of tutors

iii. Strengthen postnatal service component in regards to maternal health

iv. Procurement equipment and supplies for BEMOC and CEMOC for primary and secondary health institutions

v. Introduction basic newborn care in all primary health centers in maternity under the form of Newborn Corner

vi. Provision in-service B-EmONC training to practicing midwives

vii. Procurement of essential drugs for all primary and secondary health facilities based on the agreed medicines package with the MoHCW (including blood as of 2013)

viii. Procurement and distribution of midwifery kits, delivery beds and consumables for emergency obstetric care

ix. Procurement and distribution of neonatal resuscitation equipment including ambubags, suction devices and neonatal stethoscopes

x. Review of the Village Health Worker Training Manual to strengthen the maternal and newborn health component, particularity post natal visits Training of Village Health Workers

xi. Procurement and supply of working tools and supplies, including a bicycles to 5000 VHWs (objective 20,000)

Provision of incentives to VHWs

xii. Introduction of Point of Care in Maternity to improve PMTCT services

xiii. Contributes financially to the Health Worker Retention Scheme which is providing incentives to over 19,000 Health Workers, in particular for Midwifes and Medical Doctors at peripheral levels so that Cesarean section are decentralized as well as midwifery skills

xiv. Advocate for abolishment of user fees for maternity services supported by the Health Services Fund

xv. Establishment of mother waiting homes at health facilities

xvi. Provision of ambulances

xvii. Family planning interventions

VIII. CONCLUSIONS

Despite the grim maternal health indicators, Zimbabwe stands a chance to ensure safe motherhood through making extended efforts in investing in proven and effective maternal health services and strengthening health monitoring systems. The evidence presented clearly suggests that the business as usual mode is inadequate and falling far short of the needed efforts to register any progress.

Strengthening the civil registration vital statistics (CRVS) system - Is important to effectively monitor maternal deaths and efficiently target interventions while more resources are needed to extend coverage of postnatal care and improve the quality of care of the existing maternal health service coverage. However, the non-usage of the available health services by women affiliated to some conservative Apostolic groups threaten maternal health coverage in Zimbabwe considering that the Apostolic community now constitute about 33% of the population and this number continues to grow.

I**nnovative data collection methods for real-time monitoring -** In the interim leading up to the long-term goal of fully functioning vital registration systems, promising innovative data collection and data analysis methods should be further explored. To date, there is no single adequate methodology for real-time monitoring of maternal mortality, and little research has been done in this area despite its importance.

Health system quality improvements – A critical element that is driven by the programmatic national scale activities of the Health Transition Fund and further complemented by related programmes aimed at maternal health.

Communication for Development (C4D) initiatives – Social norms, cultures, values and traditions have an impact on the health-seeking behavior of some members of society. C4D should be designed to influence behavior through an intricate understanding of the underlying factors that drive the health-seeking behavior of some groups (e.g. members of the conservative Apostolic Faith religion)

Ratification of maternal protection conventions - The country has not ratified any of the international labour standards on maternity protection (No. 3, 1919; No. 103, 1952; No. 183, 2000). It has however made some progress in integrating provisions of C183 as part of current labour legislation. These Conventions, together with their corresponding Recommendations (No. 95, 1952; No. 191, 2000), present an expanded scope and entitlements of maternity protection and provide perspectives to improve the overall quality of maternal health services.

Promoting activism on maternal deaths – Recognising that maternal mortality is as much a social issue as it is a medical one, and further acknowledging that 3000 maternal deaths a year is simply unacceptable, a thrust towards more direct and visible activism may be required to raise awareness and prompt stakeholders in to more concerted action to deal with maternal deaths in Zimbabwe.

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