Improve Maternal and Newborn Health and Nutrition

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OVERVIEW

In spite of substantial advances in maternal and newborn health over recent decades, roughly 300,000 girls and women still die due to pregnancy related complications every year. At present, there is widespread agreement within the global community on what needs to be done to prevent these deaths and improve the health and wellbeing of women and babies.

Clinical interventions and health services need to be delivered across a continuum of care – before pregnancy, during pregnancy, and following pregnancy. There must also be an enhanced focus on the role that nutrition plays in saving lives and safeguarding the health of women and newborns.

The interventions discussed in this brief not only address the leading causes of maternal and newborn death, but they also address overall health and wellbeing, encompassing adequate nutrition and the prevention and treatment of maternal injuries.

SECTION 1: FRAMING THE ISSUE

Over the past 25 years, great strides have been made in maternal and newborn health — the number of maternal deaths dropped by nearly half since 1990, and the number of newborn deaths fell 47% between 1990 and 2015. However, of the nearly 125 million women who give birth every year, 43 million do not deliver their babies in a healthcare facility and 21 million do not receive medical care for major obstetric complications.

When one woman dies of pregnancy related complications, an estimated 20 women experience a form of morbidity — such as an obstetric fistula, or uterine prolapse — which carry long-term consequences that can encumber health, wellbeing, and even social and economic status.

Every day, some 830 women die from pregnancy or childbirth related complications, which equates to about one woman every two minutes. In some countries a woman’s lifetime risk of dying in pregnancy is as high as 1 in 17, while in high-income countries on average it is 1 in 3300.

The major causes of maternal death include severe bleeding, infection, pre-eclampsia and eclampsia, complications from delivery, and unsafe abortion. Combined, these causes account for roughly 75% of all maternal deaths. Weak health systems also contribute to maternal mortality rates, particularly wherever facilities lack essential medical supplies and equipment, basic services such as reliable, accessible water and sanitation services and hygiene training, a shortage of skilled-birth attendants, and a general shortage of healthcare workers.

A number of issues further contribute to increased vulnerability to maternal death and disability:

- **Low-income, rural, and marginalized women suffer hindered access to care**: Due to limited access to comprehensive maternal healthcare, these women are most likely to experience pregnancy and childbirth related complications. In the developing world, 40 million women worldwide give birth at home every year without a skilled birth attendant. Even though the rates of women receiving antenatal care around the world have increased, in low-income countries only 51% of women have skilled labor present during childbirth and only 40% receive the suggested number of antenatal visits while pregnant. Studies show a clear link between low income and births in inadequate environments which lack the basic services for infection prevention, critical for a safe delivery. A WHO report looking at assessments from over 50,000 healthcare facilities in low and middle income countries found that 38% did not have access to water.

- **Young women and adolescents are at increased risk**: Early pregnancy and childbearing increases...
the risks of complications for adolescent girls and their newborns. Pregnancy and childbirth complications are a leading cause of death for women aged 15–19 globally and result in 50,000 deaths per year. Babies born to adolescent girls under 18 have a 60% increased risk of death compared to babies born to mothers older than 19. These newborns are also more likely to be pre-term, have low birth weight, or suffer from oxygen deprivation.

- **Nutritional status:** Boosting girls’ and women’s nutritional status is critical to improving maternal and newborn health—and development in general. Undernutrition among pregnant women leads to increased risks of infection, anemia, lethargy and weakness, lower productivity, poor birth outcomes, maternal complications, and even death. Nutrition plays another critical role: in developing countries, every second pregnant woman is iron deficient, and anemia contributes to 20% of all maternal deaths worldwide. Poor nutrition in women in general, and pregnant women in particular, also contributes to newborn death and disability —resulting in some 800,000 deaths annually in the first month of life, or more than a quarter of all newborn deaths. Poor maternal nutrition increases risk for premature delivery, low birth weight, and birth defects. Undernutrition and overnutrition can result in obesity and the Gestational Diabetes Mellitus (GDM), or the onset of diabetes during pregnancy, which is associated with higher incidences of maternal and newborn health complications. Maternal obesity is also associated with a higher risk of pre-eclampsia (hypertensive disorders during pregnancy), the second leading cause of maternal death, which can also lead to newborn and infant death.

- **Unsafe abortion:** One of the leading causes of maternal mortality, unsafe abortion results in 22,000 maternal deaths annually. Unsafe abortions are more likely to occur where abortion is illegal. In these contexts women risk unsafe methods, such as obtaining an abortion from an unqualified provider, self-medicating to induce abortion, drinking toxic fluids, and self-injury. Women who survive these procedures often suffer serious—if not permanent—injuries.

- **HIV:** HIV is a significant factor in maternal deaths, particularly across the developing world. When compared with HIV-negative women, HIV-positive women are eight times more likely to die during pregnancy, childbirth, or in the period immediately after childbirth. In 2015, of the roughly 4,700 AIDS-related maternal deaths worldwide, sub-Saharan Africa accounted for 85%, or 4,000 deaths.

Without treatment, newborns with HIV progress rapidly to AIDS because their immune systems are underdeveloped. Early infant diagnosis is crucial to reducing the persistently high AIDS-related mortalities among children. Half of newborns with HIV die before reaching the age of two, and the highest number of deaths occur between six and eight weeks of life. The majority of these deaths are preventable, by treating opportunistic infections with antibiotics or through antiretroviral therapy.

**SECTION 2: SOLUTIONS AND INTERVENTIONS**

There is global consensus on the health interventions that should be made available to women and newborns along a continuum of care. These holistic, women-centered interventions are not only aimed at preventing the leading causes of maternal and newborn deaths, but look to improve the overall health of women and infants by facilitating proper nutrition, and preventing and treating maternal challenges, such as gestational diabetes, childbirth injuries, and managing blood pressure. Improved care for women during pregnancy plays a decisive role in reducing newborn and infant mortality rates, as well as low-birth weight and stillbirths.

An effective continuum of care includes quality care before, during, and after pregnancy, and services for normal pregnancy and childbirth, as well as emergency obstetric care delivered by skilled healthcare providers within a functioning health system. For the continuum of care to have a significant impact on maternal and newborn health, it must also include access to the necessary facilities, medicines, supplies, equipment, and skilled health providers. Finally, these health services must be available, accessible, acceptable, and of quality (AAAQ) and must be provided in a dignified and respectful manner, free from discrimination and abuse.

While the global community agrees on the clinical interventions needed to improve maternal and newborn health and nutrition, there are still gaps in service. This brief highlights four strategies that have the potential to address these gaps:

- **Ensure access to quality maternal and newborn care, including midwifery care**
- **Expand community-level strategies to reach the most vulnerable women and girls**
- **Address unintended pregnancy through modern contraception and increase access to safe abortion**
- **Provide maternal and newborn nutrition education, counseling and support – and promote exclusive breastfeeding**

**Ensure Access to Quality Maternal and Newborn Care, Including Midwifery Care**

The provision of affordable and quality maternal and newborn healthcare services must go hand-in-hand with access to skilled, knowledgeable, and compassionate midwifery care throughout pre-pregnancy, pregnancy, birth, the postnatal period, and the first months of infancy. This is one of the most important investments a country can make to improve maternal and newborn health. By
including family planning and quality maternal and newborn healthcare within national midwifery standards, 83% of all maternal and newborn deaths and stillbirths could be averted.40

Many countries—including Burkina Faso, Cambodia, Indonesia, Morocco, and Sri Lanka—have significantly reduced maternal and newborn deaths by training and deploying midwives.41,42 Midwives, or skilled birth attendants with midwifery skills, can counsel women on sound nutrition practices—such as the importance of folic acid through food fortification—that strengthen their ability to carry pregnancies to term, prevent birth defects, and save newborn lives.43 Midwives are crucial in the early initiation and ongoing support of breastfeeding in the first moments and weeks of life, a key newborn health and nutrition intervention.44 Continued breastfeeding for the first six months of life has the potential to save the lives of hundreds of thousands of infants and reduce health-care costs.45

Many low- and middle-income countries still have a long way to go before quality midwifery coverage is available for the most underserved populations. Only 42% of midwifery professionals are available in the 73 low- and middle-income countries where 92% of maternal and newborn deaths and stillbirths occur.46,47,48,49 Not only is there a need to increase the number of midwives in these countries, but continued commitment by governments and their development partners must guarantee that midwifery services are available, accessible, acceptable, and of high-quality. One way of doing this is highlighted in the case study below.

Case Study: Improving Midwifery Care in Cambodia

Maternal and newborn mortality has been falling significantly in Cambodia since 2005.50 Key to this decline was a notable investment in midwifery education and a marked increase in the number of midwives providing antenatal care and deliveries within an expanding primary healthcare network. Ensuring increased access to quality maternity care was led by the government, with the support of a range of partners, including NGOs and UN organizations.51-53 Access to improved primary healthcare, with a focus on midwifery, was also seen across the health system, including the public and private health sector. In 2010, skilled birth attendance in a facility accounted for 55% of all births, and home deliveries with a midwife (or 16%). Pre-service education and in-service training for midwives has been prioritized and all health centers have at least one primary midwife.54,55

Expand Community-Level Strategies to Reach the Most Vulnerable Women and Girls

In order to improve maternal and newborn health and nutrition, essential health services need to be provided through functioning health systems that integrate a continuum of community- and facility-based care. Grassroots-level interventions include community mobilization, health and behavior change education, community support groups, and home visits during pregnancy and after childbirth.56 These may be provided by a healthcare provider or a community health worker at the home, village, school, or local clinic. Growing evidence suggests that community-based strategies improve maternal and newborn health outcomes, and positively affect health and nutrition practices—such as the uptake of exclusive breastfeeding.57 Finally, strengthening community participation and engagement—including both women and men—in the design and delivery of health services has led to improvements in their quality, availability, and utilization.58

Effective community-level interventions include:

- **Training and deploying community health workers (CHWs):** Community health workers can play an important role in increasing access to essential health information services, and, in particular, can be instrumental in providing care to underserved populations, including youth and adolescents, in rural areas. Community health workers receive a limited amount of training to deliver a wide range of health and nutrition services to the members of their communities, and to promote sound practices, such as breastfeeding. They typically remain in their home village or neighborhood, serving as a link between their neighbors and the health facility or formal health providers; in this capacity, they can ensure that women at risk and infants are referred to the appropriate health facility, or skilled provider, for needed care and treatment.59-61 A number of countries have embarked on national community health worker programs with positive results. Ethiopia's Health Extension Program (HEP), Pakistan's Lady Health Workers (LHW) Program, and Uganda's Village Health Teams, among others, improve the promotion of essential health information and services.62

- **Mobilizing communities through women’s or community groups:** Evidence from countries in Africa and Asia points to the role of women’s groups in improving maternal and newborn care practices and reducing maternal and newborn deaths. These groups bring women together before, during, and after pregnancy to share common experiences, identify problems, exchange information, discuss ways to access quality maternal and newborn healthcare, identify gaps in the system, and find potential solutions. A meta-analysis conducted in 2013 shows that women’s groups can reduce maternal deaths by 49% and newborn deaths by one-third.63

Case Study: Pakistan's Lady Health Worker Program

With many urban-rural disparities and a drastic imbalance in the health workforce, including insufficient numbers of health workers, nurses, and skilled birth attendants, through the Prime Minister’s Programme for Family Planning and Primary Care, Pakistan created the Lady Health Worker cadre in 1994.64 Lady Health Workers are supplemented by Community Health Volunteers (CHVs) and have the potential to strengthen and expand primary health care networks.65,66 Lady Health Workers and CHVs can ensure that women at risk and infants are referred to the appropriate health facility, or skilled provider, for needed care and treatment.67-69 A number of countries have embarked on national community health worker programs with positive results. Ethiopia’s Health Extension Program (HEP), Pakistan’s Lady Health Workers (LHW) Program, and Uganda’s Village Health Teams, among others, improve the promotion of essential health information and services.70

SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

- 9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

SDG 11: Make cities and human settlement inclusive, safe, resilient and sustainable.

- 11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities, and older persons

International agreements related to improving maternal and newborn health and nutrition include:

- Global Strategy for Women’s and Children’s Health (2010)
- Sustainable Development Goals (2015-2030)
- Global Strategy for Women’s, Children’s, and Adolescents’ Health (2016-2030)
Workers must be recommended by the community, have at least eight years of schooling, and undergo extensive training. The goal of this program is to equip female health workers with the skills to provide essential primary health services in rural and urban slum communities. External evaluation has shown substantially better health indicators in the population served by Lady Health Workers. In the Punjab province, for example, Lady Health Workers have played a critical role in reducing maternal mortality rates. A 2006 study of the region revealed a drop in maternal mortality from 350 to 250 per 1000,000 live births. Infant mortality also declined from 250 to 79 per 100,000 live births.

Address Unintended Pregnancy Through Modern Contraception and Increase Access to Safe Abortion

Roughly 38% of the 210 million pregnancies that occur globally each year are unplanned; 22% end in abortion, more than half of which are unsafe. To eliminate the risks posed by unintended pregnancy and unsafe abortion, girls and women need access to contraceptive information, counseling, products, and services, as well as to be able to plan their pregnancies. Girls and women also need access to quality post-abortion care to treat complications arising from an incomplete or unsafe abortion.

Increasing access to and use of modern contraception is the best way to reduce unintended pregnancies and unsafe abortions. The use of modern contraception also allows for birth spacing, which in turn reduces birth complications, thus increasing the health of both the woman and baby. However, when contraceptive methods fail, or when pregnancies pose a health risk to the mother, access to safe and legal abortion is crucial to reducing maternal mortality and morbidity.

Therefore, liberalizing abortion laws and increasing access to safe abortion services needs to be a priority in places where it is currently highly restricted or illegal. In countries such as Nepal, South Africa, and Tunisia, legalizing abortion has been linked to a drop in maternal mortality.

Where safe abortion services do exist, communities must know how to access them, and available services must be affordable. In countries where abortion remains highly restricted, and therefore often unsafe, post-abortion care (PAC) services should be strengthened and efforts must be made to increase awareness of them. Fear of stigma may prevent women, and especially adolescents, from seeking care for abortion-related complications. PAC providers should not only be trained on appropriate techniques and procedures, but should also know how to provide non-judgmental, confidential, and adolescent-friendly services, which should include counseling on contraception. Evidence shows that providing contraceptive services together with PAC services increases their use, thereby reducing unintended pregnancies and repeat abortions.

In countries where abortion is legal, the following actions promote access to safe abortion:

- Registering essential medicines and making supplies available for safe abortion services;
- Training providers on WHO-endorsed safe abortion methods, including vacuum aspiration for surgical abortion and misoprostol for medical abortion;
- Ensuring abortion is affordable, legal, and confidential for all, without age or marriage restriction.

For more, please reference the brief focused on demand for modern contraception and reproductive health.

Case Study: The Impact of Legal Reform on Availability of Abortion in South Africa

In 1996, abortion was legalized in South Africa, after which there was a significant decrease in infections and hospitalizations for women who had undergone unsafe abortion, especially younger women. A review of national data indicates that abortion mortality dropped by more than 90% between 1994 and 2001.

Provide Maternal and Newborn Nutrition Education, Counselling, and Support – and Promote Exclusive Breastfeeding

Given the intergenerational nature of malnutrition, it is important to recognize the value of nutritional education, counseling, and support services as effective tools to improve maternal and newborn health, and enhance overall health and wellbeing. When girls and women who are malnourished become pregnant, the impacts can be detrimental. Lack of proper nutrition can lead to the birth of underweight babies who face an increased risk of poor health throughout their lives – a risk that can have long-term impacts on intergenerational health. Proper nutrition during the first 1,000 days of a baby’s life, starting from the beginning of a woman’s pregnancy, is critical. This 1000-day window can have a strong impact on a child’s growth and ability to learn.

An increased risk of malnutrition, death, and illness during the postnatal period has been linked to poor and inadequate feeding practices. Even though evidence clearly indicates the benefits of early initiation and exclusive breastfeeding for the first six months of life, only about one in three African babies, for example, is exclusively breastfed. This is due to a lack of awareness of optimal feeding practices and a lack of support from healthcare providers, community members, and families. Babies who are not breastfed within the first hour and exclusively for six months have a higher risk of death, especially from infections. Therefore, it is vital that healthcare providers and community members advising new mothers are educated and equipped with the necessary skills and knowledge to promote and support maternal nutrition and the merits of optimal breastfeeding practices. Special attention and support around breastfeeding must also be given to low birth weight babies and their mothers, HIV-positive mothers, and babies born in emergency settings. It is thus vital to ensure that healthcare providers, as well as community members who often advise new mothers about infant care, have accurate information about the merits of breastfeeding, and are educated and equipped to promote and support maternal nutrition and recommended breastfeeding practices.

A Lancet study estimated that the costs required for breastfeeding promotion are remarkably low. For 75 countries with elevated rates of under-five mortality, the added cost to reaching 99% of families with two home visits through the use of a peer counselor is around US$124 million, or about US$90 for every life saved.

Case Study: Scaling Up Breastfeeding in Bangladesh

Breastfeeding has been widely lauded for enduring health benefits for infants and their mothers. In the past six to eight years, exclusive breastfeeding in Bangladesh has increased by 13%. Bangladesh’s success has been attributed to community mobilization and media outreach around the importance of breastfeeding, along with comprehensive health worker training. This training serves to create a support system at health facilities that provide a vital resource for positive nutritional education. Bangladesh also utilized strategic technical experience of various stakeholders – including civil society, UNICEF, and the Alive and Thrive initiative – incorporated existing evidence and best practices, and worked across sectors to create uniform messaging and practice around breastfeeding promotion.

SECTION 3: THE BENEFITS OF INVESTMENT

If all women and girls had access to modern contraception and maternal and newborn health services, maternal death would drop by more than two-thirds,
and newborn deaths would be reduced by 77%. In addition, unintended pregnancies would drop by 70%, and abortions by 67%.

Investments in maternal, newborn, and reproductive health are sound investments. They not only save lives, but they increase both social and economic benefits for developing nations. Every dollar spent globally on interventions promoting maternal, newborn and child health would reap up to $120 in benefits. Given the important role girls and women play in contributing to national and global economies, ensuring they are healthy makes them more likely to save, invest and deliver better for themselves, their families, communities and societies. Conversely, poor health outcomes, resulting from maternal death and disability, adversely affect the economy and slash family earnings.

Evidence suggests that in Africa and Asia, an 11% boost in gross national product is achievable through the elimination of undernutrition, and that scaling up nutrition interventions targeting pregnant women and young children yields a return of at least US$16 for every US$1 spent. Children who are malnourished during their first 1000 days of life are more susceptible to infectious diseases and have lower cognitive abilities. As a result, early undernutrition can considerably hinder a country’s economic growth.

During the first two years of a child’s life, optimal breastfeeding has the potential to cut under-five deaths by 11% and reduce the long-term negative impact of poor nutrition. Breastfeeding and proper nutrition may also lower the risk of high blood pressure and cholesterol, obesity, diabetes, and some childhood asthmatics and cancers. Providing women with micronutrients can help ensure healthy pregnancies, prevent anemia, enhance fetal growth, and support healthy birth weights. Micronutrients are important for the health of the baby, but also for the overall health and wellbeing of girls and women.

Research has demonstrated that the impact of maternal death on families, and especially on children who are left behind, can be devastating. Maternal mortality has implications for the surviving household’s financial stability and puts the future education of children at risk. Research has shown that newborns whose mothers die in childbirth are far less likely to reach their first birthday than those whose mothers survive. Among surviving daughters, school dropout and early marriage rates soar, repeating the cycle of poverty for the next generation.

**SECTION 4: CALLS TO ACTION**

The vast majority of maternal and newborn deaths can be prevented by known interventions provided through a continuum of care. Access to quality maternal and newborn care and nutrition not only benefits the woman and child, but it has far-reaching benefits for families, communities, and societies as a whole. In order to power progress for all, many different constituents must work together—governments, civil society, academia, media, affected populations, the United Nations, and the private sector—to take the following actions for girls and women:

- Guarantee access to quality, affordable care before, during, and after pregnancy – inclusive of midwifery and obstetric care, modern contraception, safe abortion, and post-abortion care.
  * (Most relevant for: civil society, governments, the United Nations, and the private sector)

- Ensure quality care is inclusive of midwifery and obstetric care, family planning, safe abortion, and post-abortion care.
  * (Most relevant for: civil society, governments, the United Nations, and the private sector)

- Meet the unmet need for modern contraception for girls and women.
  * (Most relevant for: civil society, governments, the United Nations, and the private sector)

- Support the prevention, screening, and treatment of common challenges during pregnancy such as obesity, gestational diabetes, and high blood pressure.
  * (Most relevant for: civil society, governments, the United Nations, and the private sector)

- Increase national budgets for maternal and newborn health and nutrition to meet global health and nutrition targets by 2030.
  * (Most relevant for: governments)

- Set measurable targets for improving maternal and newborn health and nutrition, monitor progress, and strengthen accountability mechanisms, while ensuring the equal involvement of all stakeholders, including civil society.
  * (Most relevant for: civil society and governments)

- Address barriers to healthcare, including user fees, poor infrastructure, and a lack of essential supplies, medicines, and micronutrients.
  * (Most relevant for: governments and the private sector)

- Include girls, young people, and women in the design and implementation of maternal and newborn health and nutrition programs as context experts.
  * (Most relevant for: civil society, governments, the United Nations)

- Hold governments accountable to commitments made in support of girls’ and women’s health, rights, and wellbeing.
  * (Most relevant for: affected populations, civil society, and the United Nations)

- Promote widespread training and education for health workers, women, and community members focused on maternal and child nutrition, counseling, and support.
  * (Most relevant for: affected populations, civil society, governments, and the United Nations)

- Promote and provide women access to nutritious food, counseling on proper nutritional practices such as breastfeeding, and critical micronutrients.
  * (Most relevant for: affected populations, civil society, governments, the United Nations, and the private sector)

**ENDNOTES**
