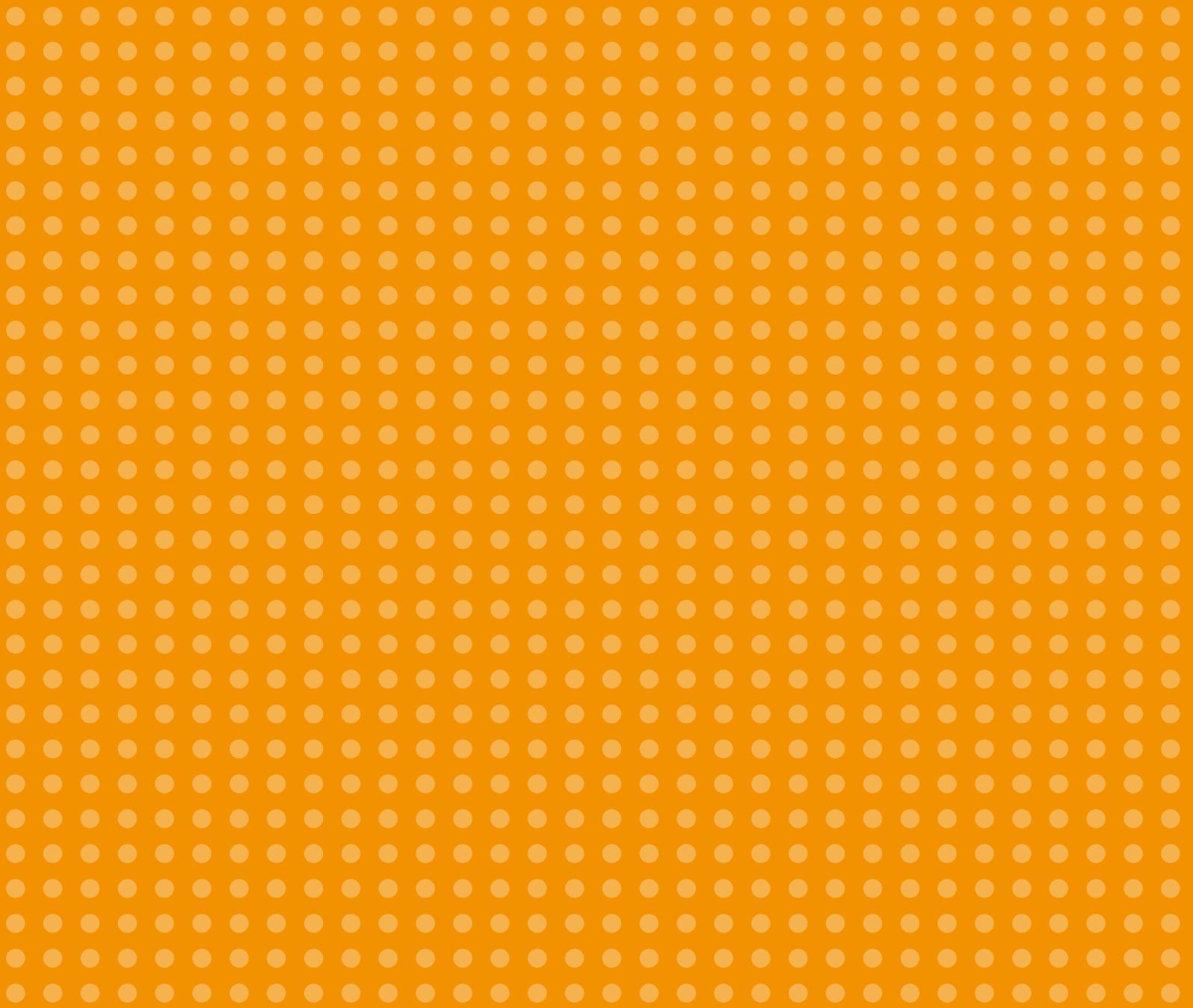


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Every day 810 women die  
from preventable causes  
related to pregnancy  
and childbirth.



## TRANSFORMATIVE RESULT: ENDING PREVENTABLE MATERNAL DEATHS

# CHAPTER 1

# COST OF ENDING PREVENTABLE MATERNAL DEATHS

## SUMMARY

Ending maternal deaths from preventable causes is a cornerstone of the ICPD Programme of Action and an important indicator in the Sustainable Development Goals. Substantial progress has been made in reducing maternal mortality over the past 25+ years and globally, the number of maternal deaths has dropped 38 per cent since 2000. However, an estimated 295,000 women still die at or around the time of childbirth annually, with the least developed countries bearing the majority of the burden and 86 per cent of maternal deaths occurring in sub-Saharan African and Southern Asian countries. To drive progress towards Goal 3.1 for a “global maternal mortality ratio (MMR) less than 70 per 100,000 live births by 2030,” the *Every Woman Every Child* global movement was launched in 2010 to mobilize international and country-level action “to address the major health challenges facing women, children and adolescents around the world”. Many maternal deaths and injuries are preventable by scaling up evidence-based interventions to be delivered through high-quality and timely care.

The Bloomberg School of Public Health at Johns Hopkins University has developed a model to estimate the global cost of ending preventable maternal deaths in 120 low- and middle-income countries using available country-level data. The evidence-based approach assumes that maternal mortality and morbidity will decline if all women gain access to a core subset of 29 maternal health interventions spanning the continuum of care from the periconceptual to postpartum periods (the time around conception and

after childbirth). To estimate impact, the number of lives saved or mortality rate reductions attributable to expanded coverage of key interventions was quantified using a linear and deterministic modelling platform that applies country-specific conditions of mortality and health from population-based surveys or global databases.

## THE PRINCIPAL FINDINGS

- **The cost from 2020 to 2030 of ending preventable maternal deaths is \$115.5 billion for 120 priority countries.**
- **From 2020 to 2030, \$11.9 billion is available to spend as development assistance at the country level towards ending preventable maternal deaths in the next decade.<sup>2</sup> The total new investment needed to end preventable maternal deaths is \$103.6 billion.**

<sup>2</sup> This estimate of donor funding to address maternal mortality and morbidity 2020–2030 was developed by the Institute for Health Metrics and Evaluation (IHME), an independent global health research centre at the University of Washington. [www.healthdata.org/](http://www.healthdata.org/)

## 1.1 OVERVIEW

Global consensus exists on the need to end preventable maternal deaths. Eliminating preventable maternal deaths is a cornerstone of the ICPD Programme of Action and is an important indicator of both Sustainable Development Goal 3.7 and Goal 5.7.

Supported by this global consensus, progress has been made to reduce preventable maternal deaths. Since 2000, the global maternal mortality ratio has fallen a total of 38 per cent, from 342 maternal deaths per 100,000 live births in 2000 to 211 deaths per 100,000 live births in 2017. Many countries have halved their maternal death rates in the last 10 years.

Despite global agreement and several decades of progress, nearly 300,000 women still die annually from preventable causes at or around the time of childbirth – more than one maternal death every two minutes.

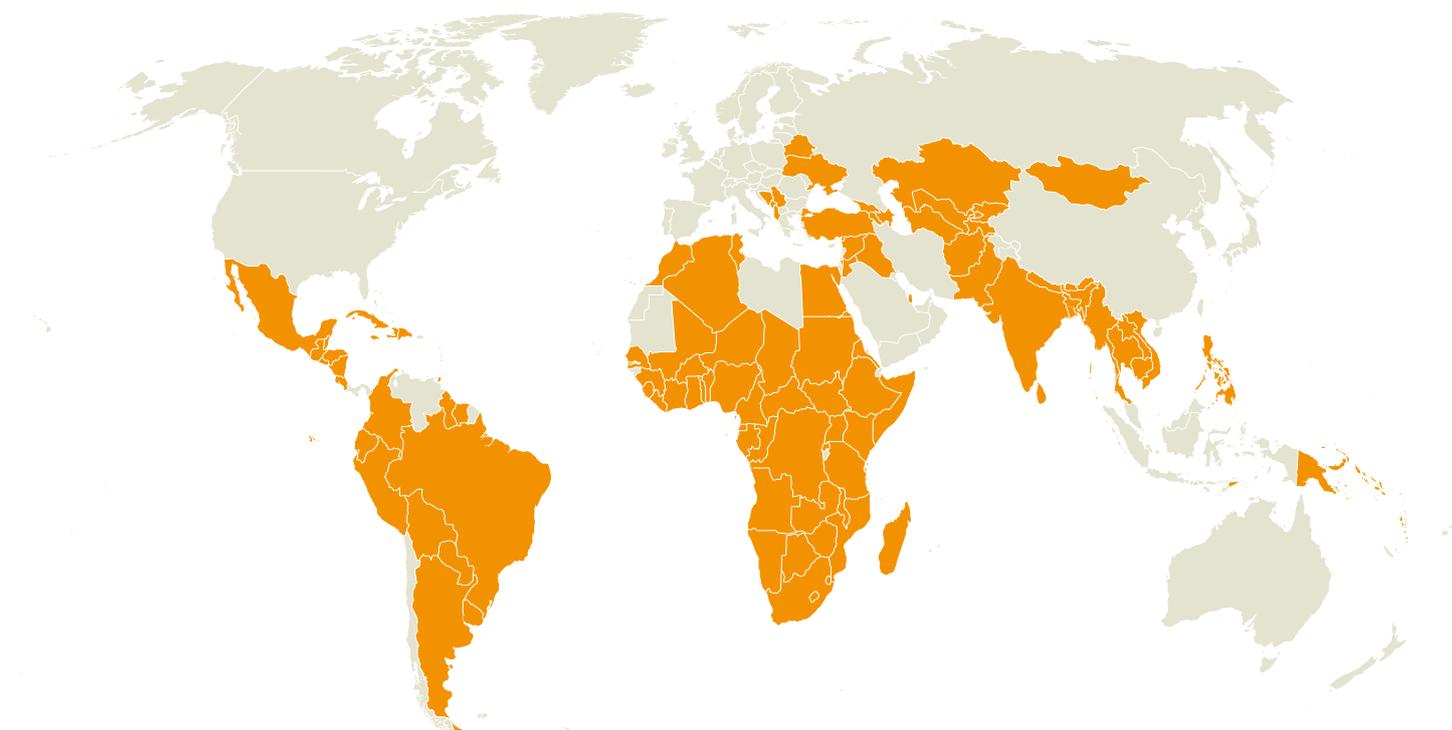
Every maternal death is a human tragedy for the woman and her family. About one million children are left motherless each year. These children are more likely to die within two years of their mothers' death than children with both parents living. And for every woman who dies, 20 or 30 suffer injuries, infections or disabilities. Ongoing high levels of maternal death and disability are also detrimental to the social development and economic well-being of communities and countries.

The majority of maternal deaths are preventable. About three quarters of all maternal deaths are caused by postpartum haemorrhage, hypertensive disorders such as pre-eclampsia/eclampsia, infections, unsafe abortion and other delivery-related complications. In theory, all of the major causes of maternal death can be treated with timely clinical interventions supported by quality care. In practice, however, even if a woman manages to access prenatal care and deliver in a health facility with a skilled birth attendant, poor quality of care can be life-threatening. Non-communicable diseases also play an important and growing role and may contribute to underlying cause of deaths that occur during pregnancy, delivery and the postpartum period.

## 1.2 OPERATIONALISING ENDING PREVENTABLE MATERNAL DEATHS

Ending preventable maternal deaths can only be achieved if all women have access to a core subset of high-quality maternal health interventions spanning across the continuum of care from periconceptual to postpartum. Ending preventable maternal deaths centres on improvements in maternal health interventions in a total of 120 priority LMICs, representing various levels of engagement dependent on country needs. These countries account for more than 99 per cent of all maternal deaths worldwide. For the purposes of this study, ending preventable maternal deaths is achieved when these evidence-based interventions for maternal health have been scaled up to reach 95 per cent of women in the targeted 120 countries. This study includes the needs of internally displaced persons and refugees.

**Figure 2. Map of 120 priority countries for ending preventable maternal deaths**



### 1.3 SCOPE

The estimated global price tag for ending preventable maternal deaths includes the commodity, service delivery and programmatic costs of delivering a package of 29 lifesaving medical interventions to all women during periconceptual, pregnancy/antenatal, and post-partum periods in 120 countries which account for more than 99 per cent of maternal deaths globally.<sup>3</sup>

### 1.4 METHODOLOGY

Ensuring that all women have access to a basic package of health services for prevention and treatment of complications of pregnancy and childbirth will reduce preventable maternal mortality and morbidity. To estimate impact quantified as the number of lives saved or mortality rate reductions attributable to expanded coverage of key interventions, the Lives Saved Tool (LiST) was used to

**Table 4. The path to ending preventable maternal deaths**

<b>Ensure that these 29 interventions are universally available...</b>	Folic acid supplementation/fortification Safe abortion services Post-abortion case management Ectopic pregnancy case management Blanket iron supplementation/fortification TT – Tetanus toxoid vaccination IPTp – Intermittent preventive treatment of malaria during pregnancy Syphilis detection and treatment Calcium supplementation Iron supplementation in pregnancy Multiple micronutrient supplementation in pregnancy Balanced energy supplementation Hypertensive disorder case management Diabetes case management Malaria case management MgSO <sub>4</sub> management of pre-eclampsia Immediate drying and additional stimulation Neonatal resuscitation Antibiotics for preterm or prolonged PROM Parenteral administration of anti-convulsants Parenteral administration of uterotonics Parenteral administration of antibiotics Assisted vaginal delivery Manual removal of placenta Removal of retained products of conception Surgery Blood transfusion Induction of labour for pregnancies lasting 41+ weeks Maternal sepsis case management
<b>In these 120 countries. . .</b>	Afghanistan, Albania, Algeria, Angola, Argentina, Armenia, Azerbaijan, Bangladesh, Barbados, Belarus, Belize, Benin, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Central African Republic, Chad, Colombia, Comoros, Congo, Costa Rica, Côte d'Ivoire, Cuba, Democratic Republic of the Congo, Djibouti, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Georgia, Ghana, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, India, Indonesia, Iraq, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Lao People's Democratic Republic, Lesotho, Liberia, Madagascar, Malawi, Maldives, Mali, Mauritania, Mexico, Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nepal, Nicaragua, Niger, Nigeria, Occupied Palestinian Territory, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Qatar, Rwanda, Saint Lucia, Samoa, São Tomé and Príncipe, Senegal, Serbia, Sierra Leone, Solomon Islands, Somalia, South Africa, South Sudan, Sri Lanka, Sudan, Suriname, Swaziland, Syrian Arab Republic, Tajikistan, Thailand, Timor-Leste, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, United Republic of Tanzania, Uruguay, Uzbekistan, Vanuatu, Viet Nam, Yemen, Zambia, Zimbabwe
<b>At the appropriate time for women . . .</b>	Periconceptual, pregnancy/antenatal, postpartum
<b>Ends preventable maternal mortality caused by... [1]</b>	Embolism (3.2 %), abortion (7.9%), hypertensive disorders (14.0%), postpartum haemorrhage and antepartum haemorrhage (27.1%), other direct causes (9.6%), indirect causes[2] (27.5%), sepsis (10.7%)[3]
<b>Which results in...</b>	Zero preventable maternal deaths

[1] Percentages represent the global causes of maternal death.

[2] Indirect causes of death are defined as those resulting from previous existing disease or disease that developed during pregnancy, which was not due to direct obstetric causes, but which was aggravated by the physiologic effects of pregnancy. Indirect causes include infections (e.g. malaria and hepatitis), cardiovascular disease, psychiatric illnesses (e.g. suicide and violence), tuberculosis, epilepsy and diabetes (WHO et al., 2010).

[3] Percentages may be found at: [www.thelancet.com/journals/langlo/article/PIIS2214-109X\(14\)70227-X/fulltext](http://www.thelancet.com/journals/langlo/article/PIIS2214-109X(14)70227-X/fulltext)

### SPOTLIGHT ON MIDWIFE TRAINING AS A LIFESAVING INTERVENTION: UNFPA MATERNAL AND NEWBORN HEALTH THEMATIC FUND

Launched in 2008 the Maternal and Newborn Health Thematic Fund (MHTF) works in 39 countries with some of the highest maternal mortality rates in the world. The Fund is committed to making childbirth safer for all women, girls and newborns by supporting training for midwives and strengthening health systems overall, especially in their ability to deliver lifesaving emergency obstetric and newborn care. Only 51 per cent of women in low-income countries benefit from skilled care during childbirth. Well-trained midwives could help avert roughly two thirds of all maternal and newborn deaths and deliver 87 per cent of all essential sexual, reproductive, maternal and newborn health services.

**Ethiopia:** In less than a decade, the number of midwives increased 10 times, while the maternal mortality rate fell by 40 per cent.

In 2009, Ethiopia had only 1,275 midwives caring for a population of over 85 million people. This critical shortage contributed to some of the highest maternal and newborn death rates in the world. Through the support of the UNFPA MHTF, policy changes were implemented and resources mobilized from other partners. Today, 12,069 midwives are equitably distributed across Ethiopia. The maternal mortality ratio has fallen over 40 per cent between 2008 and 2015.

**Bangladesh:** 3,000 new professional midwives have been trained and maternal deaths have fallen by nearly 61 per cent.

Since 2010, the UNFPA MHTF has supported the Government of Bangladesh in its pledge to train an additional 3,000 midwives and double the share of births attended by a skilled health professional. Bangladesh has launched two new midwifery programmes, resulting in significant improvements in maternal and newborn health and declines in mortality and morbidity.

model country-specific conditions of mortality and health. LiST is a mathematical modelling tool that allows users to estimate the impact of coverage change on mortality in low- and middle-income countries. Scenarios incorporate baseline coverage of interventions drawn from routine household surveys such as Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS) and the effectiveness of interventions to reduce specific causes of death.

This basic package of health services is intended to be representative of the types of services and costs that are required; it is not a recommendation of what each country, or regions within countries, should do. The actual package would be tailored to each country context. The cost of the programme is estimated by multiplying the number of women reached with each service by the unit cost of providing that service. In addition to these service delivery costs, infrastructure and programme costs for support

functions such as administration, research, training and monitoring and evaluation have also been estimated.

## 1.5 RESULTS AND FINDINGS

The causes of preventable maternal death are well known. The solutions to ending most preventable maternal deaths are equally well known. Now, for the first time, the total resources needed to end preventable maternal mortality are known.

- The total investment needed is \$115.5 billion between 2020 and 2030.
- Donors are projected to provide \$11.9 billion of this amount between 2020 and 2030. The new investment required is \$103.6 billion.

**Figure 3. Methodology for estimating impact of coverage in number of lives saved**



- Annual spending needs to increase from \$4.0 billion in 2020 to \$16.1 billion by 2030 to meet this goal.
- Ending preventable maternal deaths centres on improvements in maternal health interventions in a total of 120 priority countries representing various levels of engagement dependent on country needs.
- There is a relationship between unmet need for contraception and the incidence of preventable maternal death, where countries with high unmet need for family planning often have higher rates of maternal complications and deaths. This study assumes that ending unmet need for family planning will also be achieved by 2030. If unmet need for modern forms of family planning is not eliminated by 2030, the costs of ending preventable maternal deaths by 2030 could be substantially higher.
- More investment in maternal health would also make easily preventable and treatable conditions that arise from complications in childbirth – such as obstetric fistula – extremely rare.
- Providing these interventions in all 120 countries would also have the added effect of reducing newborn deaths by 33 per cent and still births by 57 per cent.

While the resources required are known, what is not known is whether the global community will take the action necessary to end preventable maternal deaths by 2030. Based on this new information, all that stands in the way is a commitment to implement all available and known interventions to save women's lives.

**” Ending preventable maternal deaths by 2030 in 120 priority countries requires investments totaling \$103.6 billion.**