2013 STATUS REPORT ON MATERNAL NEWBORN AND CHILD HEALTH

AFRICAN UNION

Acknowledgements

This status report focuses on specific interventions that promote low-cost, high-impact maternal, newborn, and child health in Africa including family planning, immunizations, nutritional support, health service integration, and health care financing. The report reviews the status of these interventions in relation to maternal, newborn, and child health in Africa and makes concrete, targeted recommendations for ways to improve and expand these interventions. Furthermore, this report presents the status of maternal, newborn, and child health in Africa against the background of selected and relevant indicators in the Maputo Plan of Action, a document promoting universal access to comprehensive sexual and reproductive health services in Africa.

The support and critical contribution of key partners to this publication is hereby acknowledged and appreciated. Specifically, support from the United Nations Population Fund (UNFPA), the United States Agency for International Development (USAID) and Australian Agency for International Development (AusAID), the Partnership for Maternal, Newborn, and Child Health (PMNCH), AfriDev, the Global Alliance for Vaccines and Immunization (GAVI), the Africa-America Institute (AAI), is recognized and commended.

Table of Contents

List of Acronyms and Abbreviations

AAI	Africa-America Institute
AIDS	Acquired Immunodeficiency Syndrome
AU	African Union
AUC	African Union Commission
AusAID	Australian Agency for International Development
CARMMA	Campaign on Accelerated Reduction of Maternal, Newborn and Child Mortality in Africa
CMR	Child Mortality Rate
CRS	Congenital Rubella Syndrome
DPT	Diphtheria, Pertussis and Tetanus
GAVI	Global Alliance for Vaccines and Immunization
HIV	Human Immunodeficiency Virus
HPV	Human Papilloma Virus
IMR	Infant Mortality Rate
MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
MNCH	Maternal Newborn and Child Health
MPoA	Maputo Plan of Action
PMNCH	Partnership for Maternal, Newborn, and Child Heath
SAMM	Severe Acute Maternal Morbidity
SBA	Skilled Birth Attendant
SRHR	Sexual and Reproductive Health and Rights
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

Foreword

The African Union Heads of State and Government, at their 15th Ordinary African Union Assembly, mandated the African Union Commission to report annually on the state of maternal, newborn, and child health in Africa, until 2015. I am, therefore, pleased to present this second report on the status of maternal, newborn, and child health in Africa.

Healthy women are the foundation of a strong community and healthy newborns and children are the future. Despite these facts, numerous African women and their children suffer unnecessary mortality and morbidity each year. These tragic losses and related disabilities can be prevented and managed through proven, high-impact, low-cost interventions. Therefore, I am pleased that this report focuses on specific interventions that promote affordable, effective maternal, newborn, and child health in Africa including family planning, immunizations, nutritional support, health service integration, and health care financing. The report first reviews the status of these interventions in relation to maternal, newborn, and child health in Africa and then makes concrete, targeted recommendations for ways to improve and expand these interventions. Furthermore, this report presents the status of maternal, newborn, and child health in Africa against the background of selected and relevant indicators in the Maputo Plan of Action, a document promoting universal access to comprehensive sexual and reproductive health services in Africa.

At the 20th Ordinary African Union Assembly, the African Union heads of state and government requested that the African Union Ministers of Health review the status of maternal, newborn, and child health in Africa and report their findings to the Assembly. In turn, this report will serve as a vehicle through which the ministers fulfill that directive.

I call upon all stakeholders to utilize the findings and recommendations of this report to improve the state of maternal, newborn, and child health in Africa.

H.E. Dr. Mustafa S. Kaloko
Commissioner for Social Affairs
African Union

Executive Summary

African leaders are committed to improving the wellbeing of women and children. These commitments have been expressed through a variety of channels including the Maputo Plan of Action, the Campaign on Accelerated Reduction of Maternal, Newborn, and Child Mortality in Africa, and commitments made at the 15th and 20th Ordinary African Union Assemblies.

The Heads of State and Government who deliberated on the Campaign on Accelerated Reduction of Maternal, Newborn and Child Mortality in Africa and at the Summit event hosted by the Republic of Benin, made a number of commitments to further support efforts to improve maternal, newborn and child health in Africa. One of these decisions was for the African Union Commission to report annually on the state of maternal, newborn and child health in Africa. More specifically it requests the Ministers of Health of the African Union Member States to:

- examine the progress made regarding the state of maternal, newborn and child health;
- map out concrete and innovative strategies at a larger scale in order to adequately address the health needs of African women and children; and
- submit a report to the 21st Session of the Ordinary African Union Assembly.

This *Annual Status Report on Maternal, Newborn, and Child Health in Africa (2013)* fulfills that requirement. The report has six sections namely: background; child health; maternal health; integration of services; financing; maternal, newborn, and child health interventions; and recommendations for action. This year's report focuses on low-cost, high-impact maternal, newborn, and child health interventions in Africa, such as family planning, immunization, nutrition, integration of health services, and health financing.

Background: The Continental Policy Framework on Sexual and Reproductive Health and Rights and the Maputo Plan of Action for its operationalization are key tools guiding Africa's efforts to achieve the United Nation's Millennium Development Goals 4 and 5 by 2015.[1] The Campaign on Accelerated Reduction of Maternal, Newborn, and Child Mortality in Africa serves as a critical advocacy platform for improvement of maternal, newborn and child health. Launched by 40 of the 54 African Union Member States, this campaign has motivated national ownership of significant maternal, newborn, and child health initiatives.

In 2010, after reviewing implementation of the Maputo Plan of Action, the 15th Session of the Ordinary African Union Assembly instructed the African Union Commission to report annually on the status of maternal, newborn, and child health in Africa until 2015.[2] In response, the African Union Commission collaborated with its partners to develop and submit the *First Annual Report on the Status of Maternal, Newborn, and Child Health in Africa* to the 19th Ordinary African Union Assembly in 2012.

In January of 2013, at the 20th Ordinary African Union Assembly, the African Union heads of state and government instructed the Conference of African Union Ministers of Health to review the maternal, newborn, and child health situation in Africa and report back to the Assembly. The Heads of State and Government also asked the ministers to use their report to underscore the outcomes of the event, "Reinforcing the Campaign on Accelerated Reduction of Maternal Mortality in Africa," where heads of state and government had reaffirmed their commitment to promoting the health of women and children. Subsequently, the African Union Commission and its partners prepared this *Second Annual Report on the Status of Maternal, Newborn, and Child Health in Africa.*

Child health: Globally, over 20,000 children under age five die each day and the majority of these deaths are caused by preventable illnesses. The four major killers of children under five are pneumonia (18 percent), diarrheal diseases (15 percent), preterm birth complications (12 percent), and birth asphyxia (9 percent). In Africa south of the Sahara, malaria is still a major killer, causing about 16 percent of deaths among children under five.[3] Additionally, under-nutrition is an underlying cause in more than a third of deaths among African children under five.

All countries are aiming to achieve Millennium Development Goal 4: reduction of child mortality by two-thirds. In the last 22 years, African countries south of the Sahara have reduced their child mortality by 39 percent and have doubled their annual rate of reduction from 1.5 percent to 3.1 percent. Among the 44 countries for which Millennium Development Goal 4 data are available:

- 2 have achieved the goal (Egypt and Liberia),
- 4 countries are on track to achieve the goal,
- 26 countries have made insufficient progress toward the goal, and
- 12 have made no progress toward the goal.[4]

Newborn health, a subset of child health, has recently received great attention due to the world's slower rate of decline in neonatal mortality, as compared to child mortality. In Africa, approximately 29 percent of child deaths occur during the neonatal period.[5] Child mortality rates cannot fall, and Millennium Development Goal 4 cannot be achieved, without efforts that also focus on reducing neonatal deaths.

[1] The Millennium Development Goals are eight international development goals that were officially established after the Millennium Summit of the United Nations in 2000, following the adoption of the United Nations Millennium Declaration. All 189 United Nations member states and, at least 23 international organizations, have agreed to achieve these goals by 2015. Target A under Goal 4 is to "Reduce by two thirds, between 1990 and 2015, the under-five mortality rate." Under Goal 5, Target A is to "Reduce, by three quarters, the maternal mortality ratio" and Target B is to "Achieve universal access to reproductive health."

[2] Under declaration no. Assembly/AU/Decl.1{XV}

[3] Black et al. Lancet 2010:375(3790):1969-1987

[4] Countdown to 2015. Building a Future for Women and Children. 2012 Report. http://www.countdown2015mnch.org/reports-and-articles/2012-report

[5] Black et al. Lancet 2010:375 (9730):1969-1987

Understanding the causes of child and neonatal death allows program planners to tailor child health interventions to the unique needs of each region and population. This chapter discusses many child and neonatal services and focuses on nutrition and immunization as low-cost, high-impact interventions with the greatest potential to improve child health in Africa.

Maternal health: In 2010, approximately 800 women died each day due to pregnancy and childbirth complications. Out of these 800 daily deaths, 440 occurred in Africa south of the Sahara. The major causes of maternal death in Africa are:

- Haemorrhage (33.9 percent),
- Indirect causes including disease during pregnancy, poor health at conception, and a lack of adequate care during and after pregnancy (16.7 percent),
- Sepsis (9.7 percent),
- Hypertensive disorders (9.1 percent), and
- HIV/AIDS (6.2 percent).[6]

The risk of a woman living in Africa south of the Sahara dying from a pregnancy-related cause during her lifetime is about 97 times higher than it is for a woman living in a developed country.

All African countries have committed to achieve the first target under Millennium Development Goal 5: reducing the maternal mortality ratio by two-thirds. Although levels of maternal mortality in Africa have declined by 41 percent since 1990, progress has been variable across the continent. In 60 percent of African countries (32 of 54 countries) had a maternal mortality ratio of more than 300 maternal deaths per 100,000 live births. Among the African countries for which Millennium Development Goal 5 data are available:

- 1 country has achieved the goal (Egypt),
- 2 countries are on track to achieve the goal,
- 23 are making progress toward the goal,
- 9 have made insufficient progress toward the goal, and
- 9 have made no progress toward the goal.[7]

Reduction of maternal deaths can be achieved by increasing the proportion of births assisted by a skilled birth attendant, improving contraceptive use, increasing immunization coverage, and by improving maternal nutrition. Because 20 of the world's 25 countries with the highest adolescent fertility rates are located in Africa, this report focuses on family planning as a low-cost, high-impact intervention with potential to accelerate Africa's progress toward achieving Millennium Development Goal 5. Although the number of African women using contraceptives increased from 69 to 75 million between 2008 and 2012, this increase has been uneven across countries. In July of 2012, at a family planning summit in London, donor countries pledged US $2.6 billion to support family planning interventions over the next eight years. This financial support could provide 120 million girls in the global south with family planning services. In addition to family planning, this report also emphasizes maternal nutrition and immunizations as low-cost, high impact interventions to achieve Millennium Development Goal 5 in Africa.

Integration of services: Maternal, newborn, and child health service integration is discussed in this report as an effective means to manage and deliver care so clients receive a continuum of preventive and curative services according to their needs over time and across different levels of the health system. Integration of maternal, newborn, and child health, family planning, and HIV services has the potential to simultaneously address multiple patient needs in one location and efficiently and effectively move a country closer to achieving Millennium Development Goals 4, 5, and 6.[8] Coverage is difficult to estimate and often masks important regional, national, and sub-national disparities including socioeconomic disparities. These inequities are often amplified for services that require a functional health system (such as delivery with a skilled birth attendant), compared to those that do not (such as immunizations).

[6] WHO Maternal and perinatal health: causes of maternal death http://www.who.int/reproductivehealth/topics/maternal_perinatal/epidemiology/en/

[7] Countdown to 2015. Building a Future for Women and Children. 2012 Report. http://www.countdown2015mnch.org/reports-and-articles/2012-report

[8] Under Goal 6, Target A is to "Have halted, by 2015, and begun to reverse the spread of HIV/AIDS" and Target B is to "Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it."

Financing maternal, newborn, and child health interventions: Despite the commitment of all African Union Member States to allocating at least 15 percent of their national budgets to health, financing maternal, newborn, and child health interventions remains one of the key challenges to improving the continent's health outcomes. This report highlights a series of innovative strategies to address national funding needs for maternal, newborn, and child health. While there are promising developments in domestic and international funding mechanisms, fund leveraging and effective use of financial resources remain challenges among all African Union member states. The chapter encourages countries to learn from innovative global and national financial mechanisms that have been used to raise funds for other health programmes, such as HIV/AIDS and malaria.

Recommendations for action: The final section of the report includes a set of recommendations that draw on the document's key findings and focus on low-cost, high-impact maternal, newborn, and child health interventions. These interventions include inspiring political will, improving nutrition services, providing immunizations, addressing maternal health challenges, improving access to family planning, and strengthening the health system.

Background

The Continental Policy Framework on Sexual and Reproductive Health and Rights (SRHR) and the Maputo Plan of Action (MPoA) for its operationalization are key tools that continue to guide Africa's efforts to achieve the United Nation's Millennium Development Goals (MDGs) 4 and 5 by 2015. The Campaign on Accelerated Reduction of Maternal, Newborn and Child Mortality in Africa (CARMMA) serves as a critical advocacy platform for improving maternal, newborn and child (MNCH) health in Africa. Launched by 40 of the 54 African Union (AU) member states, CARMMA has motivated significant national ownership of maternal, newborn, and child health initiatives.

In 2005, the AU adopted the SRHR Policy Framework in response to a call for the reduction of maternal, newborn, and child morbidity and mortality in Africa.[9] The framework was developed as Africa's contribution to the United Nation's International Conference on Population and Development Programme of Action.[10] The framework also aimed at accelerating implementation of the MDGs, particularly those related to health, including MDGs 4, 5, and 6. The international public health community and country governments accepted this framework and its emphasis on SRHR as a central component of human development.

In 2006, the AU adopted the MPoA as a strategy to implement the SRHR Policy Framework.[11] The MPoA also supported the *Plan of Action on the Family in Africa,* which the AU adopted in 2004 as an advocacy instrument for strengthening family units by addressing their needs, improving their general welfare, and enhancing family members' life chances.

After reviewing the MPoA's implementation in 2010, the 15th Session of the Ordinary AU Assembly instructed the African Union Commission (AUC) to report annually on the status of MNCH in Africa until 2015.[12] In response, the AUC collaborated with partners to develop and submit the *First Annual Status of MNCH in Africa Report* to the 19th Ordinary AU Assembly in 2012.

In January of 2013, at the 20th Ordinary AU Assembly, the AU heads of state and government instructed the Conference of AU Ministers of Health to review the MNCH situation in Africa and report back to the Assembly. The AU Heads of State and Government also asked the ministers to use their report to underscore outcomes of the "Reinforcing the CARMMA" event, where Heads of State and Government had reaffirmed their commitment to the health of women and children. Consequently, the AUC and its partners have prepared this *Second Annual Status Report on Maternal, Newborn and Child Health in Africa*.

This report is presented in six sections. Following this background section is a section on child health that examines the status of child, infant, and neonatal mortality in Africa. This section also reviews the impact of nutrition and immunizations on child mortality and morbidity and outlines a series of high-impact, low-cost interventions to improve child health outcomes in Africa. In the second section, maternal health is discussed in terms of levels and trends in mortality and morbidity, adolescent sexual and reproductive health, nutrition, and immunizations. The family planning section reviews fertility levels and trends, contraceptive prevalence rates, unmet family planning needs, and strategies to reposition family planning. Service integration has been treated as a separate chapter to demonstrate the importance of integrating universal access to high-impact, low-cost interventions across the continuum of care, from pregnancy to childhood to adolescence. The final two chapters discuss financing of MNCH services and outline a set of recommendations for scaling up low-cost, high-impact MNCH interventions in Africa.

[9] Under Executive Council declaration no. EX.CL/225 (VIII)

[10] In 1994, the United Nations coordinated the International Conference on Population and Development in Cairo, Egypt. The conference's resulting Programme of Action is the steering document for the United Nations Population Fund (UNFPA).

[11] Under Executive Council declaration no. EX.CL/Dec.516 (XV)

[12] Under declaration Assembly/AU/Decl.1{XV}

2. Child Health

Although there has been a significant reduction in global child deaths, the world is still only half way towards reaching the MDG 4 target of reducing the child mortality rate (CMR) by two-thirds by 2015. Of particular concern is the slower rate at which neonatal mortality is falling compared to CMR.[13] At the end of 2011, the global mortality rate among children under five was 51 deaths per 1,000 live births. Though substantial progress has been made in reducing mortality among children under five, much more must be done to reach the MDG target of 29 deaths per 1,000 live deaths by 2015.[14] Fortunately, over the last 22 years, five of the United Nation's nine MDG developing regions reduced their child mortality rates by over 50 percent.[15]

Among these regions, North Africa reduced its rate by 68 percent and Africa south of the Sahara achieved a 39 percent reduction. Cumulatively, all African countries have doubled their annual rate of child mortality reduction, from 1.5 percent in 1990 to 3.1 percent in 2012.

[13] UNAIDS. Global Report: UNAIDS Report on the Global AIDS Epidemic 2010. Geneva: UNAIDS; 2010. Report No.: UNAIDS/10.11E | JC1958E. Geneva: UNAIDS/WHO.

[14] UNICEF et al (2012) Levels and trends in child mortality

[15] The United Nation's nine MDG developing regions include: North Africa, Africa South of the Sahara, Latin America and Caribbean, Caucasus and Central Asia, Eastern Asia (excluding China), Southern Asia (excluding India), South East Asia, West Asia, and Oceania.

2.1. MORTALITY AMONG CHILDREN UNDER AGE FIVE

Globally, over 20,000 children under age five die each day, the majority of them from preventable causes.[16] The leading global causes of death among children under five are pneumonia (18 percent), preterm birth complications (14 percent), diarrhea (11 percent), intrapartum-related complications such as birth asphyxia (9 percent), and malaria (7 percent). Under-nutrition is the underlying factor in more than one-third of deaths among children under five.

Additionally, the number of preterm births is increasing in most countries where preterm birth complications are the main causes of newborn deaths. Sixty percent of preterm births, globally, occur in Africa and Asia. Of the 11 countries, globally, with preterm birth rates above 15 percent, 9 are in Africa south of the Sahara

Most of the world's deaths among children under five occur in Africa south of the Sahara and Southern Asia. In 2011, all 24 countries with an under five mortality rate of over 100 deaths per 1,000 live births were from these two regions and 23 out of the 24 countries were from Africa south of the Sahara. By 2011, 28 countries in Africa south of the Sahara had child mortality rates below 100 deaths per 1,000 live births and 20 countries (41 percent) had child mortality rates over 100. Six of the 28 countries with child mortality rates below 100 deaths per 1,000 live births have achieved child mortality rates below 40. These countries are showing promising progress towards achieving MDG 4 target by 2015. Eight African countries (17 percent) with CMRs over 150 are less likely to meet the MDG 4 target and, therefore, may need to increase their efforts to reduce child mortality (See Figure 1 and 2).

Whereas most African countries have recorded tremendous reductions in child mortality rates since 1990, only Egypt has been able to achieve the MDG 4 target and just five other African countries are on track to achieving the this target (See Figure 3).[19]

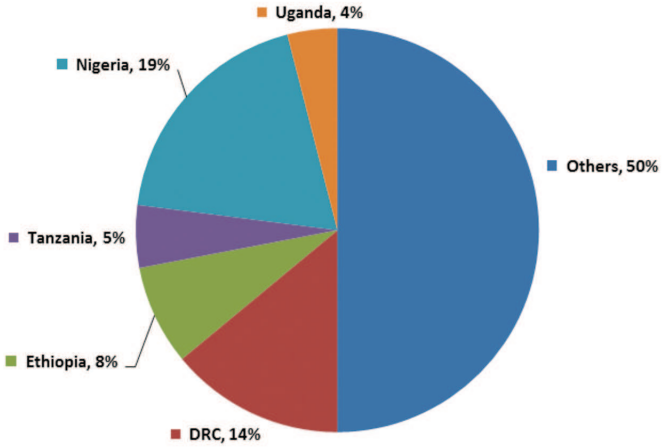


Figure 1. Five African Countries with Highest Prevalence of Mortality among Children Under Age Five, 2009[18]

[16] WHO and UNICEF (2012) Count down 2015: building a future for women and children

[17] Ibid

[18] IGME (2010). Levels & Trends in Child Mortality. Report 2010. New York: UNICEF.

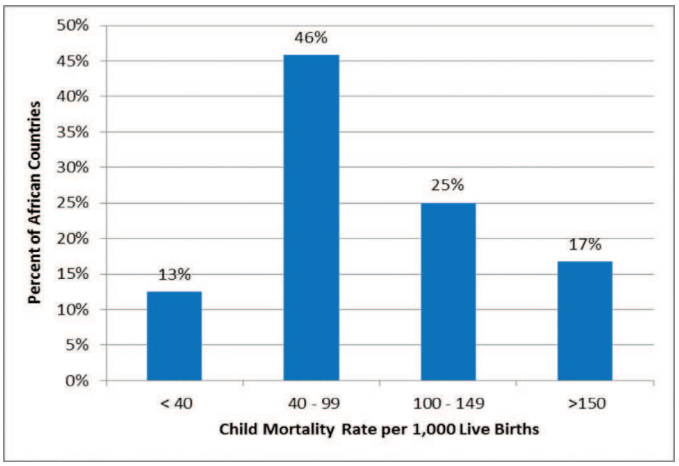


Figure 2. Child Mortality Rates in Africa

Pneumonia and diarrhea, the leading killers of children under five, have been labeled "diseases of poverty" because they are closely associated with factors such as poor home environments, under-nutrition, and lack of access to health services.[20] Efforts to tackle childhood pneumonia have had mixed results, leading to both impressive achievements and lost opportunities.

In recent years, new pneumonia vaccines have become available and most low-income countries have introduced the haemophilus influenzae type b (Hib) vaccine. Pneumococcal conjugate vaccines are also increasingly available, but gaps in vaccine uptake could greatly reduce impact.

Globally, major progress has been made in providing access to improved drinking water sources and promoting exclusive breastfeeding in the first six months of life. Effective treatment of diarrheal disease includes oral rehydration salt solutions to prevent life-threatening dehydration, Zinc supplementation to reduce the duration and severity of diarrheal episodes and prevent future infections, and continued feeding of the child during use of rehydration and zinc supplementation.

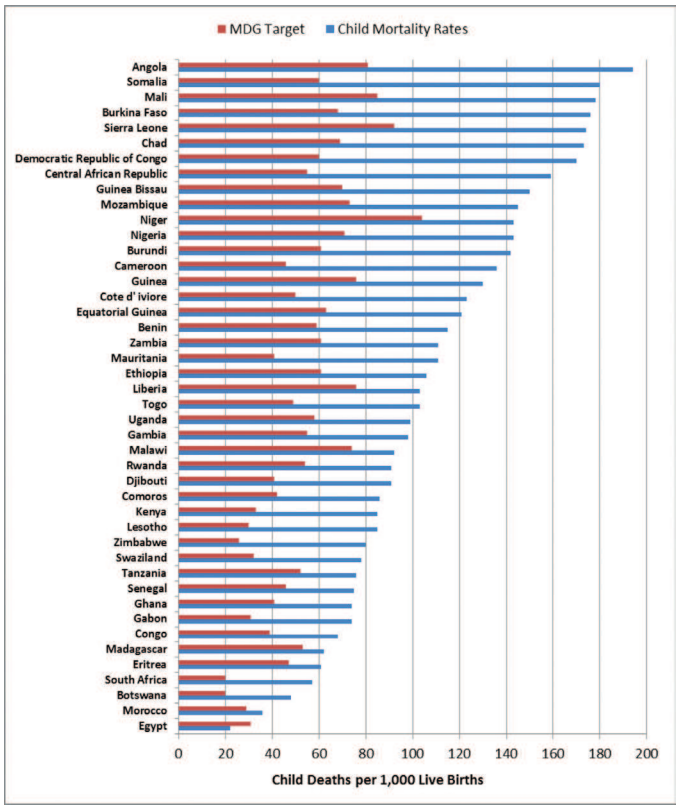


Figure 3. Progress in Achieving MDG 4: Current Child Mortality Rate (CMR) and MDG 4 Targets

Unfortunately, these inexpensive, life-saving treatments remain inaccessible for the vast majority of children in the poorest countries, especially among those in the poorest groups. More worrisome is the lack of progress in expanding treatment coverage since 2000. Globally, less than one-third of children with diarrhea receive oral rehydration salts and Zinc use also remains low. Fortunately, the Global Alliance for Vaccines and Immunization (GAVI) is supporting distribution of the rotavirus vaccine in developing countries and plans to expand distribution to other nations.[21]

Reducing mortality among children under five can be accelerated by expanding effective preventive and curative interventions that target the main causes of post-neonatal deaths (i.e., pneumonia, diarrhea, malaria, and under-nutrition) and the most vulnerable newborns and children.

[20] UNICEF (2012) Committing to child survival; A promise renewed

[21] A rotavirus vaccine protects children from rotaviruses, which are the leading cause of severe diarrhea among infants and young children

2.2. INFANT MORTALITY RATE

The infant mortality rate (IMR) is the number of deaths among infants under one year of age, per 1,000 live births. In Africa, IMR dropped 26 percent over 20 years, from 102 deaths per 1,000 live births in 1990 to 75 deaths per 1,000 live births in 2009. This represents a marginal 2 percent reduction in the actual number of infant deaths: from 2.64 million in 1990 to 2.59 million in 2009. In the same period, 2.5 million infant deaths were recorded in Africa south of the Sahara. This region contributed a staggering 97 percent of all infant deaths that occurred in Africa in 2009.

The continental IMR data masks the wide variations between countries. For example, 47 countries registered reductions in IMR between 1990 and 2009, but these reductions ranged from 3 to 73 percent.

The majority of African countries have registered positive, albeit slow, progress in reducing their IMR. The IMR dropped by at least 50 percent between 1990 and 2009 in Liberia, Eritrea, Madagascar, Cape Verde, Tunisia, and Egypt. Aside from Ethiopia and Malawi, all of these countries also showed progress in reducing their mortality rate among children under five. Although child and infant mortality rates tend to be higher in post-conflict settings, the achievements in Liberia and Eritrea demonstrates that political will and pertinent policy interventions can translate into significant positive change.

None of the countries found in the Central or Southern Africa sub-regions are included in this list of top performers. Furthermore, two of the three countries where IMR has increased (Cameroon, Chad, and Zimbabwe) are located in Central Africa. It is worth noting that these countries have high prevalence rates of illnesses, such as malaria, that are major causes of infant deaths.

2.3 NEONATAL MORTALITY

Around 40 percent of all deaths among children under five occur in the neonatal period (i.e., the first four weeks after birth) and, each year eight million babies die before birth, during delivery, or in the first week of life. Many women in the world's poorest countries deliver their babies at home rather than in a health facility, putting themselves and their babies at greater risk if complications occur. Globally, just 60 percent of deliveries take place in health facilities. Another significant cause of neonatal mortality is infection, including sepsis, meningitis, tetanus, pneumonia, and diarrhea. Low birth weight (less than 2,500 grams) greatly increases the risk of infant mortality. Low birth weight infants who survive often have impaired immune systems and increased risk of disease during their first months and years of life. These children are also likely to have cognitive disabilities and remain undernourished throughout their lives.

Although the global mortality rate among children under five has been declining, the proportion of deaths during the neonatal period has been increasing. Over the last 22 years, all regions have seen slower reductions in neonatal mortality than in mortality rates among all children under five. More specifically, neonatal mortality has had an average annual reduction rate of 1.8 percent per year, whereas mortality rates among children under five have declined at a rate of 2.5 percent per year.[22]

Countries in Africa south of the Sahara account for 38 percent of global neonatal deaths, have the world's highest neonatal mortality rate (34 deaths per 1,000 live births in 2011), and are among the countries showing the least progress in reducing neonatal mortality. Neonatal mortality rates in Africa range from 7 deaths per 1,000 live births in Egypt to 50 deaths per 1,000 live births in Somalia. Just nine countries in Africa have neonatal mortality rates below 23 deaths per 1,000 live births. These include Mauritius (9), Seychelles (9), Republic of Cape Verde (10), Botswana (11), Namibia (18), Algeria (16), South Africa (14), Eritrea (21), Rwanda (22), and Congo (22) (See Figure 4).

Postnatal care visits provide an opportunity for health workers to teach mothers and other caregivers how to effectively care for infants and, in turn, prevent neonatal deaths. Newborn care topics include early and exclusive breastfeeding, keeping the baby warm, increasing hand washing, providing hygienic umbilical cord and skin

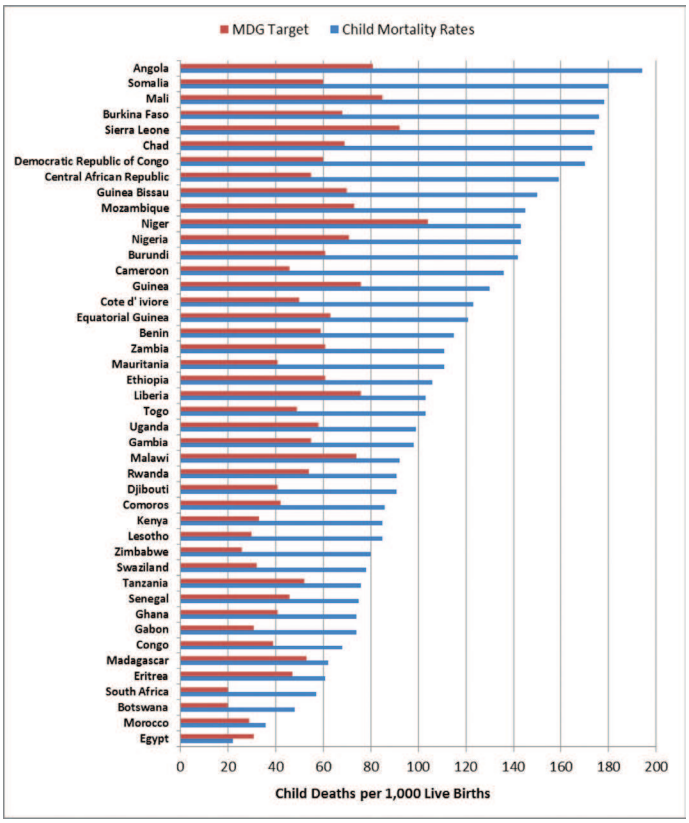


Figure 4: Neonatal Mortality Rates in African Countries

care, and identifying conditions that require additional professional care/or and counseling. Community health workers can play a critical role in providing care to newborns whose caregivers do not have easy access to a health facility.

A growing body of evidence confirms the significant advantages of early breastfeeding, preferably within the first hour after birth. Since fewer than half of all newborns breastfeed within one hour after birth, much more needs to be done to promote this practice.

Efforts to address neonatal mortality must include investment in commodities needed to reduce these deaths. The United Nation's Commission on Life-Saving Commodities for Women and Children has identified antibiotics, chlorohexidrine, antenatal corticosteroids, and resuscitation devices as key commodities that must to be procured more regularly to reduce neonatal mortality.

[22] UNICEF et al (2012) Levels and trends in child mortality

2.4 NUTRITION

Globally, more than one-third of all deaths among children under five are caused by under-nutrition.[23] Twenty four countries bear 80 percent of the global burden of chronic under-nutrition and half of these nations are located in Africa.[24, 25] (see Table 1) Chronic under-nutrition has caused stunting in approximately 165 million African children (40 percent) and around 51 million children also suffer from wasting.[26] In Africa, the link between poor nutrition and infectious disease has always been a particularly vicious cycle. Lack of vital nutrients, such as Vitamin A and Zinc, can weaken the immune system, making children more vulnerable to infections. Under-nutrition also weakens the overall immune system, which needs adequate protein, energy, vitamins, and minerals to function properly. Undernourished children are at far greater risk of death and severe illness due to pneumonia, malaria, and diarrhea than are well-nourished children.[27] Under-nutrition weakens the muscles needed to clear secretions from the respiratory tract, thereby increasing children's risk of developing pneumonia. In addition, undernourished children are at a higher risk for severe, frequent, and prolonged cases of diarrhea.[28]

Simple, inexpensive interventions applied during pregnancy and throughout the child's first two years of life-can prevent under-nutrition, decrease mortality, support growth, and promote child health and well-being.[29] Interventions that greatly reduce under-nutrition and improve children's chances of survival include early initiation of breastfeeding, exclusive breastfeeding for the first six months, complementary feeding, and micronutrient supplements. A non-breastfed child is 14 times more likely to die from all causes in the first six months of life than an exclusively breastfed child. Vitamin A supplementation reduces mortality from all causes among children ages 6 to 59 months. Nutrition interventions are among the most feasible and affordable development investments that African countries can undertake.

In addition to nutrition interventions, a growing body of evidence suggests that immunizations are also highly effective and sustainable strategies for improving child health. Since 1987, the World Health Organization (WHO) has advocated for Vitamin A supplements and the measles vaccine to be distributed simultaneously. The WHO also promotes national immunization day as a means to reach undernourished children with a package of integrated, cost-effective health interventions that includes both micronutrients and vaccinations.

With Africa's population projected to reach 2 billion by 2050, the unprecedented challenge of feeding the continent's children looms large. Fortunately, there is much opportunity to integrate nutrition and immunization interventions and, thereby, reach a greater number of children with life-saving services.

[23] Black, Robert E., et al., 'Maternal and Child Under-nutrition: Global and regional exposures and health consequences', *The Lancet*, vol. 371, no. 9608, 19 January 2008, pp. 243–260. Note that earlier estimates of more than 50 percent of deaths being caused by under-nutrition relate to the age group 6–59 months, whereas the latest estimate extends to all children under five years old.

[24] UNICEF defines under-nutrition as "the outcome of insufficient food intake and repeated infectious diseases. Under-nutrition includes being underweight for one's age, too short for one's age (stunted), dangerously thin (wasted), and deficient in vitamins and minerals (micronutrient malnutrition)."

[25] UNICEF (2009)Tracking progress on child and maternal nutrition: A survival and development priority

[26] UNICEF defines moderate and severe wasting as "below minus two standard deviations from median weight for height of reference population." UNICEF defines moderate and severe stunting as "below minus two standard deviations from median height for age of reference population."

[27] http://www.thousanddays.org/about/

Ranking	Country	Stunting prevalence (%)	Number of children who are stunted (thousands, 2008)	Percentage of developing world total (195.1 million)
1	India	48	60,788	31.2%
2	China	15	12,685	6.5%
3	Nigeria	41	10,158	5.2%
4	Pakistan	42	9,868	5.1%
5	Indonesia	37	7,688	3.9%
6	Bangladesh	43	7,219	3.7%
7	Ethiopia	51	6,768	3.5%
8	Democratic Republic of the Congo	46	5,382	2.8%
9	Philippines	34	3,617	1.9%
10	United Republic of Tanzania	44	3,359	1.7%
11	Afghanistan	59	2,910	1.5%
12	Egypt	29	2,730	1.4%
13	Vietnam	36	2,619	1.3%
14	Uganda	38	2,355	1.2%
15	Sudan	40	2,305	1.2%
16	Kenya	35	2,269	1.2%
17	Yemen	58	2,154	1.1%
18	Myanmar	41	1,880	1.0%
19	Nepal	49	1,743	< 1%
20	Mozambique	44	1,670	< 1%
21	Madagascar	53	1,622	< 1%
22	Mexico	16	1,594	< 1%
23	Niger	47	1,473	< 1%
24	South Africa	27	1,425	< 1%

Table 1: The Global Burden of Chronic Under nutrition[30]

Because there is often a long latency period before the effects of chronic under-nutrition can be felt at the country-level, nutrition remains a low priority item on many nations' development agendas. When stakeholders fail to recognize the importance of nutrition, undernourished children continue to suffer and, with weakened immune systems, many also experience severe morbidity and mortality from common and preventable illnesses.[31] Undernourished children who survive may become locked in a cycle of recurring illness and faltering growth, with irreversible damage to their physical and cognitive development.[32]

[30] UNICEF (2009) Tracking progress on child and maternal nutrition: A survival and development priority

[31] Pelletier, David L., et al., 'Epidemiologic Evidence for a Potentiating Effect of Malnutrition on Child Mortality', *American Journal of Public Health*, vol. 83, no. 8, August 1993, pp. 1130–1133; and Habicht, Jean-Pierre, 'Malnutrition Kills Directly, Not Indirectly', *The Lancet*, vol. 371, no. 9626, 24–30 May 2008, pp. 1749–1750.

[32] Black, Robert E., et al., 'Maternal and Child Under-nutrition: Global and regional exposures and health consequences', *The Lancet,* vol. 371, no. 9608, 19 January 2008, pp. 243–260.

2.5 IMMUNIZATION

Overwhelming evidence demonstrates that immunizations are among the most successful and cost-effective public health interventions. Over the past few decades, immunizations have eradicated smallpox, lowered the global incidence of polio by 99 percent, and dramatically reduced illness, disability, and death from diseases such as diphtheria, tetanus, whooping cough, pneumonia, meningitis A, diarrhea, and measles. Furthermore, immunizations save lives, prevent illness, improve workers' productivity, and prevent potentially catastrophic health expenditures for both individuals and governments. Despite these advantages, millions of children around the world do not receive the life-saving vaccines recommended by the WHO as part of a routine immunization programme. The WHO recommends that infants receive 11 antigens as part of routine immunization programmes. These include vaccines against diarrhea and pneumonia, the two biggest killers of children under five.

According to UNICEF, "The percentage of children receiving the third dose of [diphtheria, pertussis, and tetanus] (DPT3), is an indicator of how well countries provide routine immunization."[33] There is a moral imperative to reset Africa's ambition so that the measure of success is that all African children are fully immunized. Fully-immunized African children have a better chance of living up to their full potential, both intellectually and physically.

Although immunization coverage in Africa is at its highest level in history, over 20 percent of African children (approximately 8.45 million) have not received vaccines to prevent DPT.[34] Additionally, only 12 out of 54 African countries finance 50 percent of their expanded programmes on immunization; this fact indicates that immunization coverage could be significantly improved with greater investments.[35] African leaders will accelerate their progress toward achieving MDGs 4, 5, and 6 by investing in immunization coverage and working towards equal access to immunizations.

Fortunately, African countries are currently working with their partners to accelerate the roll-out of new vaccines to prevent the major causes of child mortality, such as pneumonia and diarrhea (see Figure 5).

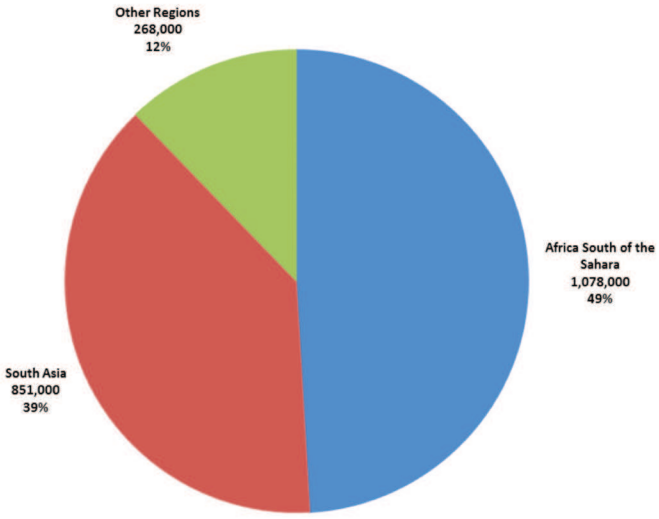


Figure 5. Global Burden of Mortality among Children under Five due to Pneumonia and Diarrhea, by World Region, 2010[36]

[33] http://www.unicef.org/factoftheweek/index_51596.html

[34] http://www.who.int/immunization_monitoring/data/SlidesGlobalImmunization.pdf

[35] 2012 Africa Child Survival Scorecard by Africa Public Health. Info (now Afri-Dev.Info) and Africa Coalition on Maternal, Newborn and Child Health.

[36] Liu et al, 2012, in UNICEF (2012) *Pneumonia and diarrhea: Tackling the deadliest diseases for the world's poorest children)*

Nearly 90 percent of deaths from pneumonia and diarrhea occur in the poorest regions of the world, in Africa south of the Sahara and South Asia. Globally, over 75 percent of deaths among children under five occur in 15 countries, 10 of which are located in Africa south of the Sahara (see Figure 6).

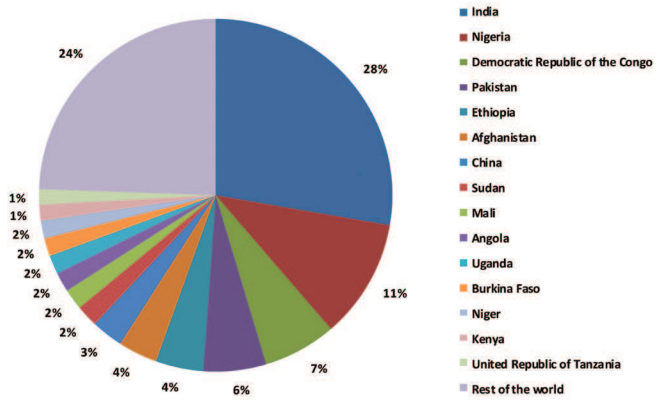


Figure 6. Highest Global Burden of Under Five Mortality due to Pneumonia and Diarrhea, by Country

Pneumonia is the leading killer of children under five, causing 18 percent of all child deaths worldwide. Efforts to control childhood pneumonia through the introduction of new vaccines are gaining ground in developing countries. Nearly all AU Member States have introduced the Haemophilus influenza type b (Hib) vaccine and most of the countries have recorded coverage of over 50 percent (See Figure 7).

Although these data signify progress, pneumococcal conjugate vaccination coverage remains low, with only 23 member states having introduced the vaccine in 2011 (See Figure 8). Fortunately, efforts are now underway to roll out this vaccine to countries with the highest pneumonia burden.

By the end of 2013, more than 25 African countries are expected to have introduced the pneumococcal conjugate vaccine.

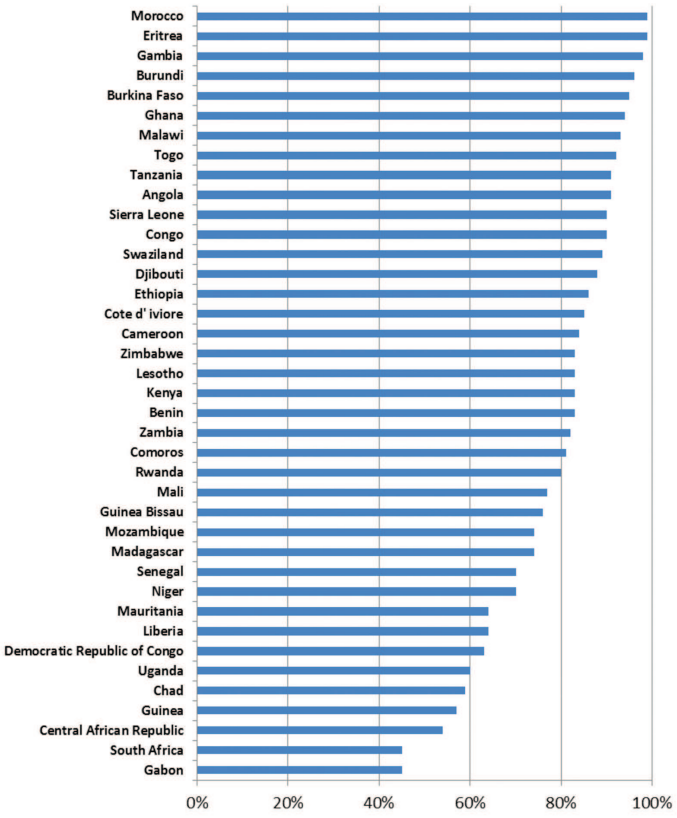


Figure 7. Haemophilus Influenzae (Hib) Type B Vaccine Coverage Rates in African Countries

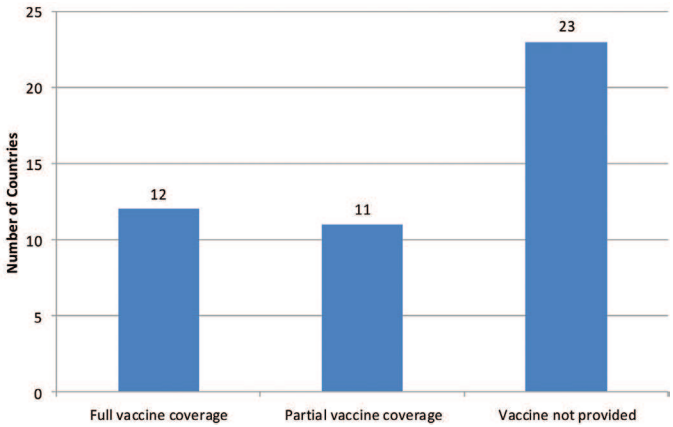


Figure 8. Coverage of Pneumococcal Conjugate Vaccine in African Countries, [2010]

Rotavirus is the leading cause of severe childhood diarrhea and responsible for an estimated 40 percent of all hospital admissions among children under five worldwide.[37] The virus continues to cause deaths in Africa, where the rotavirus vaccine remains largely unavailable. Currently, only eight AU member states (i.e., Malawi, Rwanda, South Africa, Sudan, Tanzania, Ethiopia, and Ghana) have rolled out the rotavirus vaccine. By the end of 2013, more than 10 countries are projected to have rolled out the vaccine.

A recent study found that introduction of the rotavirus vaccination averted up to five times more deaths among children from the poorest households than among children from the richest. It is estimated that equitable coverage of rotavirus vaccination in Nigeria would increase health benefits by 400 percent among the poorest children and double them at the national level.[38]

Africa's fight against the deadly diseases that affect its children and young adults reached a historic landmark in December of 2012 when the 100 millionth African child was vaccinated against meningitis A. This event took place in Africa's "meningitis belt," a region that cuts through 26 countries, from Gambia in the west to Eritrea in the east. This achievement was made possible by strong political will, effective implementation of immunization programmes, and financial commitments by African leaders, finance ministers, and ministers of health. These factors will be critical for ensuring continued progress and sustainability of disease control in Africa. Partnerships between regional and in-country stakeholders, such as civil society and the private sector will also be central to maintaining and advancing these achievements.

Immunization services can also be integrated with MNCH and sexual reproductive health interventions to maximize health program synergies and expand service provision to more people. Furthermore, higher vaccination coverage rates benefit all members of a community, even those who have not been immunized. These benefits derive from the phenomenon of "herd immunity" wherein, over time, increased immunization coverage correlates with lower disease rates within the population as a whole.

Immunizations also reduce the burden of disease on families, health systems, and societies. Lower disease incidence allows health workers to address other community health needs and parents to spend less time caring for sick children.

Child immunization programs also provide an opportunity to integrate other services, such as Vitamin A supplementation, bed net distribution, and family planning information. Integrated service provision will allow stakeholders to advance MNCH commitments, such as the 2006 MPoA, the 2009 CARMMA, and the 2010 Kampala Declaration.[39]

Some of the greatest challenges facing immunization coverage involve inequities, both between and within countries. Household wealth, geographic location, and gender-related factors, such as the mother's education, all have an impact on whether an African child is immunized or not. In many African contexts, there are additional challenges in reaching discrete population groups such as documented or undocumented migrants, displaced or mobile populations, certain tribal or ethnic groups, and people from some religious communities.

Vaccines remove a major barrier to Africa's development. Undoubtedly, immunizing children is one of the continent's most cost-effective strategies. By investing in immunization, African countries can make a lasting contribution to the MDGs. These efforts will also advance the health and development commitments of African leaders and governments and allow children and adults to lead productive, prosperous, and healthy lives.

[37] Pelletier, David L., et al., 'Epidemiologic Evidence for a Potentiating Effect of Malnutrition on Child Mortality', *American Journal of Public Health*, vol. 83, no. 8, August 1993, pp. 1130–1133; and Habicht, Jean-Pierre, 'Malnutrition Kills Directly, Not Indirectly', *The Lancet*, vol. 371, no. 9626, 24–30 May 2008, pp. 1749–1750.

[38] Ibid

[39] The first Review Conference on the Rome Statute of the International Criminal Court took place in Kampala, Uganda in 2010. During the Review Conference, 112 pledges with the purpose of strengthening the Rome Statute system were made by 37 states parties, as well as the United States and the European Union. In addition, the Conference adopted the Kampala Declaration, reaffirming states' commitment to the Rome Statute and its full implementation, as well as its universality and integrity.

3. Maternal Health

With just two years remaining until 2015, the world's nations are not even half way to reaching Target A under MDG 5: reducing the MMR by three-quarters.[40] In response, Africa's maternal health needs have been given tremendous attention by the AU, other African intergovernmental organizations, national governments, and international health organizations. In response to these efforts, more and more women are now seeking health care, family planning services, and health facility-based assistance during labour. Countries and communities must ensure that quality services are available to respond to this increased demand.

Limited access to sexual and reproductive health information and services leaves many African women and girls of all ages, nationalities, and social circumstances powerless to prevent pregnancies that they do not want and cannot afford. Unsafe abortion is often their last, desperate resort. Estimates indicate that 6.2 million unsafe abortions took place in Africa in 2008, contributing to 29 percent of the global total.[41] Unwanted pregnancies and unsafe abortions impose significant costs on families and national health systems, many of which are already struggling with scarce resources. Improved access to contraception will save both lives and resources.

[40] UNAIDS. Global Report: UNAIDS Report on the Global AIDS Epidemic 2010. Geneva: UNAIDS; 2010. Report No.: UNAIDS/10.11E | JC1958E. Geneva: UNAIDS/WHO.

[41] Shah I., Ahman E. Unsafe abortion; global and regional incidence, trends, consequences and challenges. Journal of Obstetrics and Gynecology Canada, 2009, 1149-1158

3.1. MATERNAL MORTALITY

3.1.1. Levels and Trends in Maternal Mortality

In 2010, approximately 800 women died each day due to complications of pregnancy and childbirth including severe bleeding, infections, hypertensive disorders, and unsafe abortions. Out of the 800 daily deaths, 440 occurred in Africa south of the Sahara, 230 occurred in Southern Asia, and just 5 occurred in high-income countries. The risk of a woman in a developing country dying from a pregnancy-related cause during her lifetime is about 25 times higher than that of a woman living in a developed country.

Over 60 percent of African countries have maternal mortality ratios of more than 300 deaths per 100,000 live births. Chad and Somalia have extremely high maternal mortality ratios over 1,000. African countries with the highest burden of maternal deaths are Nigeria (40,000), the Democratic Republic of Congo (15,000), Sudan (10,000), Ethiopia (9,000), and the United Republic of Tanzania (8,500); each of these nations account for between 3 percent and 14 percent of the global maternal mortality ratio.[42]

Despite these high figures, many African countries have low MMRs (i.e., 20 – 99 maternal deaths per 100,000 live births), including Tunisia (56), Egypt (66), Mauritius (60), Sao Tome and Principe (70), Cape Verde (79), and Algeria (81). Countries with moderate MMRs (i.e., 100 – 299 maternal deaths per 100,000 live births) include Botswana (160), Djibouti (200), Namibia (200), Gabon (230), Eritrea (240), Madagascar (240), and Equatorial Guinea.[43] (See Figure 9) Botswana, Lesotho, Namibia, South Africa, and Swaziland showed an increase in maternal deaths from 2000 to 2005 due to the high incidence of HIV. Fortunately, today, these nations' MMRs are dropping as antiretroviral treatments become more available.

Among the more prominent success in Africa is Equatorial Guinea's achievement of MDG 5. The nation's MMR dropped by 81 percent, from 1,200 per 100,000 live births to 240 per 100,000 live births. Equatorial Guinea is among just 10 countries worldwide that have achieved this goal. Other African countries showing promising trends in achieving MDG 5 include Egypt, Sao Tome and Principe, Madagascar, and Eritrea. (See Figure 9)

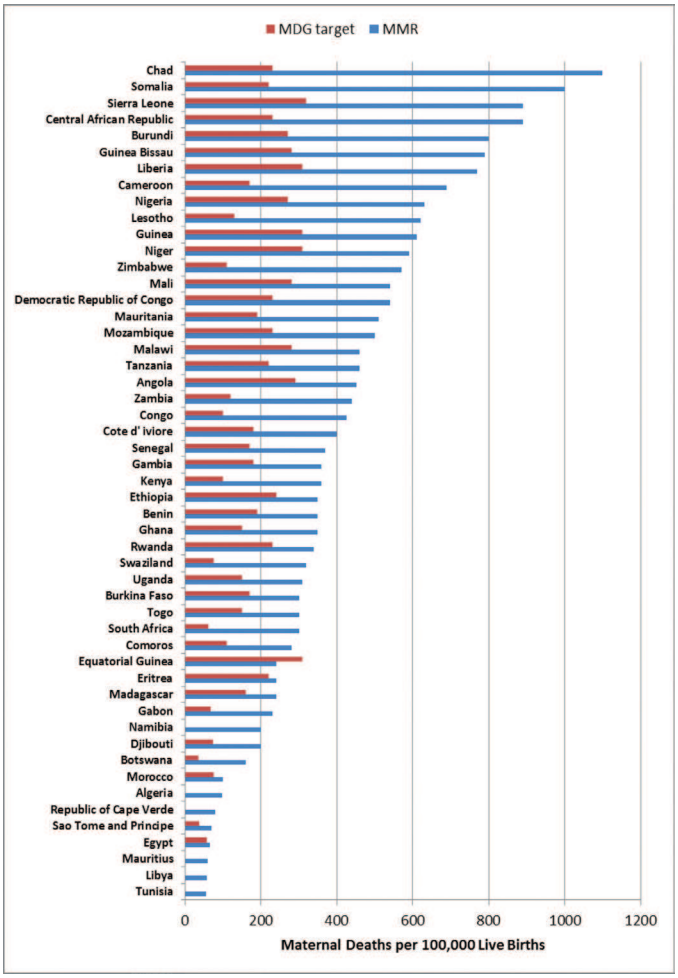


Figure 9. Progress in Achieving MDG 5: Current Maternal Mortality Ratios (MMR) and MDG 5 Targets

[42] Figures for Sudan reflect maternal mortality ratio estimates before South Sudan gained independence in July of 2011. Today, the Republic of South Sudan is estimated to have one of the highest maternal mortality ratios in the world.

[43] Trends in maternal mortality: 1990 to 2010, WHO, UNICEF, UNFPA, and The World Bank estimates (2012)

3.1.2. Causes of and Factors Underlying Maternal Deaths

Maternal deaths are caused by a wide range of complications that may occur during pregnancy, childbirth, or the postpartum period. The four major causes of maternal mortality are hemorrhage (mostly postpartum bleeding), infections (also mostly soon after delivery), hypertensive disorders in pregnancy (preeclampsia/eclampsia), and obstructed labour. Complications after unsafe abortions cause 13 percent of maternal deaths. (See Figure 10) Globally, about 80 percent of maternal deaths are attributed to these five direct causes.[44]

Indirect causes account for 20 percent of maternal deaths and include diseases that complicate or are aggravated by pregnancy, such as malaria, anemia, and HIV. The other indirect causes include women's poor health at conception and a lack of adequate care for both pregnant women and their babies. (See Figure 10)

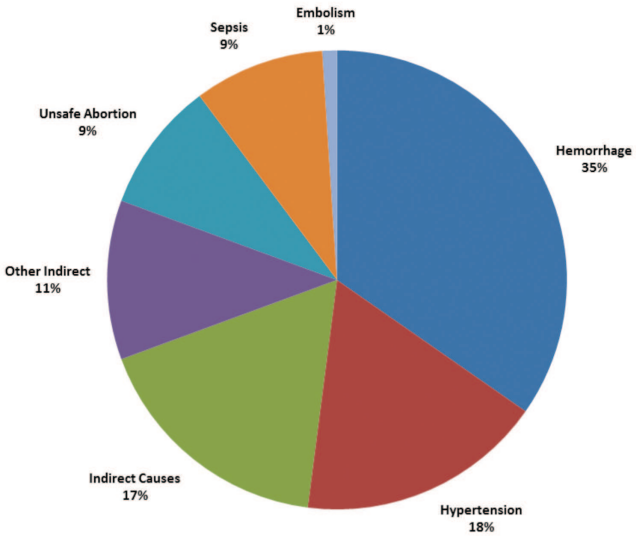


Figure 10. Major Causes of Maternal Deaths in Africa [45]

Absence of skilled health personnel during labour and delivery is a key underlying factor in high maternal mortality. In the 10 countries with the highest MMRs, just 21 to 59 percent of births had a skilled attendant present. In the 10 countries with the lowest MMRs, 63 percent to 100 percent of births had a skilled attendant present.[46]

Many women suffer birth-related disabilities that often go untreated, including injuries to pelvic muscles, organs, and the spinal cord. In addition to compromising their own health outcomes, poor maternal health, nutrition, quality of care at delivery, and quality of care during the newborn period has also been attributed to at least 20 percent of the disease burden among children under five.

While skilled birth attendance is key to reducing maternal deaths, other elements, such as antenatal care and postnatal care, are also required throughout and following pregnancy to ensure maternal health.[47] Antenatal care coverage for the first visit is close to 80 percent for most African countries. However, this drops to less than 50 percent for women who complete all four WHO-recommended antenatal care visits. Postnatal care coverage is even lower.

Globally, Africa bears 62 percent of maternal deaths caused by unsafe abortion. Unsafe abortions claims the lives of at least 29,000 African women and girls each year – most of whom are in their prime years of life (i.e., 15 – 49). Hundreds of thousands more suffer serious, often life-altering injuries, including infertility.

[44] Maternal mortality Fact sheet N°348 May 2012 http://www.who.int/mediacentre/factsheets/fs348/en/index.html

[45] Countdown 2015 Maternal, Newborn and Child Survival Building a Future for Women and Children: The 2012 Report

[46] 2012 Africa Women and Children's Scorecard Focusing on Maternal and Reproductive Health, by Africa Public Health. Info (now Afri-Dev.Info) and Africa Coalition on Maternal, Newborn and Child Health.

[47] WHO defines a SBA as someone "trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns." http://www.who.int/bulletin/volumes/85/10/06-038455/en/

South Africa has been able to reduce much of its maternal morbidity, in part, because of liberal abortion legislation and relatively high rates of skilled attendance at birth. Studies show that the costs associated with complications from unsafe abortion are a significant financial burden on health care systems in the developing world. The annual out-of-pocket cost to treat post-abortion complications among individuals and households is US $200 million in Africa south of the Sahara.[48] In Ethiopia, the direct costs to the national health system for treating post-abortion complications are estimated to be between US $6.5 million and US $8.9 million per year.[49] In Nigeria, treatment for moderate complications caused by unsafe abortions has drained public health care resources and cost the government approximately 60 percent more than simple post-abortion care procedures.[50] In Kenya, studies found that the cost of treating complications from unsafe abortions is two times higher than costs associated with receiving safe abortions.[51]

Underlying factors that prevent women from accessing services and increase their risk for death and disabilities are described in the "Three Delays Model" as follows: delay in the decision to seek care, delay in reaching care, and delay in receiving adequate health care.[52] Women's status in the community and the family are key determinants for their ability to decide to seek care and access services in a timely manner.

Among other interventions, educating young girls is a lasting solution to address maternal health and ensure both child health and familial wellbeing. An educated girl marries later, has fewer children, has more evenly spaced children, seeks medical care sooner for both herself and her children, increases the probability of her children's survival, improves her children's education, and has a lower fertility rate.[53]

[48] World Health Organization (WHO). 2012. Safe abortion: technical and policy guidance for health systems. Second Edition

[49] Vlassoff, Michael, Tamara Fetters, Solomon Kumbi and Susheela Singh. 2012. The health system cost of postabortion care in Ethiopia. *International Journal of Gynecology and Obstetrics,* 118 (Supp. 2): S127-S133

[50] Benson, Janie, Mathew Okoh, Keris KrennHrubec, Maribel A. Mañibo Lazzarino and Heidi Bart Johnston. 2012. Public hospital costs of treatment of abortion complications in Nigeria. *International Journal of Gynecology and Obstetrics,* 118 (Supp. 2): S134-S140.

[51] Centre for Reproductive Rights. 2010. In harm's way: The impact of Kenya's restrictive abortion law

[52] http://www.maternityworldwide.org/what-we-do/three-delays-model/

[53] Human Development Report, UNDP, 2003

3.2 MATERNAL MORBIDITY

For every maternal death, there are approximately 20 other women who suffer pregnancy-related disabilities. This is equivalent to an estimated 10 million women each year who survive pregnancy, yet experience some type of severe negative health consequence.[54] Obstetric fistula is the most well-known of these conditions, disabling tens of thousands of women in Africa each year.[55] Survival after obstetric hemorrhage leaves countless women chronically debilitated, especially those who also suffer from chronic under-nutrition and malaria. Survival after septic abortion or puerperal sepsis often comes at the cost of chronic pelvic pain and infertility.[56]

Severe acute maternal morbidity (SAMM), often termed 'near-miss,' has attracted interest in recent years because of its potential value as a maternal health outcome measure to supplement MMR. Cases of SAMM serve as markers of severe illness and can be used to guide health care staff discussions, education, and facility improvements. Health care facilities may measure their burden of maternal illness by their numbers or rates of SAMM.

Facilities may also track their effectiveness in preventing maternal deaths by calculating a "mortality index": the number of maternal deaths divided by the number of SAMM cases. The lower the mortality index, the more effective the facility is in preventing maternal deaths.

There is currently no national or provincial surveillance system for SAMM in Africa. However, it is hoped that SAMM notification, reporting, and surveillance will increase in the coming years and provide useful data to inform service delivery improvements and, in turn, advance maternal health.

[54] United Nations Children's Fund (2008) State of the World's Children 2009: Maternal and Newborn Health

[55] Wall LL. Obstetric vesicovaginal fistula as an international public health problem. Lancet. 2006;368(9542):1201-1209.

[56] Van Look PF, Cottingham JC. Unsafe abortion: an avoidable tragedy. Best Pract Res Clin Obstet Gynaecol. 2002; 16(2):205-210.

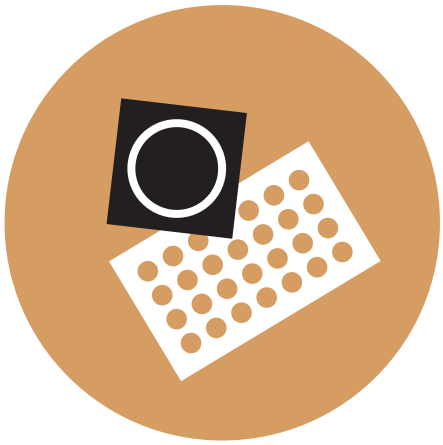
3.3. FAMILY PLANNING

Family planning, emergency obstetric and newborn care, and adolescent reproductive health constitute the three pillars of maternal and newborn health. Family planning improves maternal health, reduces unintended pregnancies and abortions, prevents the spread of HIV/AIDS, and promotes responsible development and environmental sustainability. Furthermore, a recent study concluded that the use of modern contraception enhances women's educational attainment, workforce participation, and economic stability.[57]

Around the world, 222 million women have an unmet need for modern contraception.[58] In 39 African countries, less than 50 percent of married or cohabiting women report use of at least one form of contraception.[59] Meeting women's needs for family planning would prevent 53 million unintended pregnancies each year, resulting in 14.5 million fewer abortions and 250,000 fewer women dying in pregnancy or childbirth.[60]

It is estimated that meeting the unmet needs for family planning could cut the number of maternal deaths by almost one-third. Yet, globally, 44 percent of women in need do not have access to or are not using an effective method of contraception. In response, stakeholders met together at the 2012 London Family Planning Summit and pledged US $2.6 billion to sustain current access to family planning services for 260 million girls and women around the world; this group also aimed to reach 120 million additional women with family planning services by 2020.

Launched in 2012, the United Nation's Commission on Life-Saving Commodities for Women and Children highlights the inequitable access to life-saving medicines and health supplies by women and children around the world and calls the global community to work together to save 16 million lives by 2015. Evidence shows that an estimated US $1.40 is saved on maternal and newborn health care for every dollar invested in family planning and another US $4.00 is saved on treating complications from unplanned pregnancies.



Increasing contraceptive use in developing countries has cut the number of maternal deaths by 40 percent over the past 20 years. By preventing high-risk pregnancies and those that would have ended in unsafe abortion, increased contraceptive use has reduced the global MMR by about 26 percent over the past 10 years. An additional 30 percent of maternal deaths could be avoided by fulfilling the residual unmet need for family planning.[61]

[57] Adam Sonfield, Kinsey Hasstedt, Megan L. Kavanaugh and Ragnar Anderson The Social and Economic Benefits of Women's Ability To Determine Whether and When to Have Children March 2013 http://www.guttmacher.org/pubs/social-economic-benefits.pdf

[58] Singh S and Darroch JE, Adding It Up: Costs and benefits of Contraceptive Services_Estimates for 2012, New York: Guttmacher Institute and United nations Population Fund(UNFPA, 2012)

[59] 2012 Africa Women and Children's Scorecard Focusing on Maternal and Reproductive Health, by Africa Public Health. Info (now Afri-Dev.Info) and Africa Coalition on Maternal, Newborn and Child Health

[60] Population Action International - http://populationaction.org/topics/family-planning/

[61] Cleland J, Conde-Agudelo A, Peterson H, et al. Contraception and Health. Lancet 2012; 380: 149-56

3.3.1. Levels and Trends in Fertility

Today, 75 percent of all Africans live in just 24 countries. As a result, many African governments are concerned about the implications of rapid population growth. In most African countries, over half the population is under the age of 15, which indicates impending demographic momentum (i.e., the phenomenon whereby population growth continues despite reduced reproductive rates).

From 2005 to 2010, fertility in Africa south of the Sahara stood at 5.1 births per woman, more than double the replacement level. This high fertility rate, combined with declining mortality, has resulted in rapid population growth of 2.5 percent per year. The United Nations projects that the population in Africa south of the Sahara will grow from 0.86 billion in 2010 to 1.96 billion in 2050 and 3.36 billion in 2100. This unprecedented growth is creating a range of social, economic, and environmental challenges that make it difficult for the continent to raise living standards. In turn, Africa's policy makers are increasingly interested in the continent's demographic trends.

According to conventional demographic theory, high fertility in the early stages of a demographic transition is often the consequence of a desire for large families. Couples want many children to assist with family enterprises, such as farming, and provide security and care as they age. Furthermore, high child mortality rates often inspire parents to have additional children as a means to replace losses or protect against future loss. Research shows that fertility rates tend to decline as urbanization and education levels rise, economies change, and mortality rates decline.[62]

As shown in Figure 11, more than 36 of 51 African countries (70 percent) have total fertility rates over 4.0. Although several northern African countries are approaching a fertility rate of 2.0, Mauritius is currently the only country in Africa that has attained this rate.

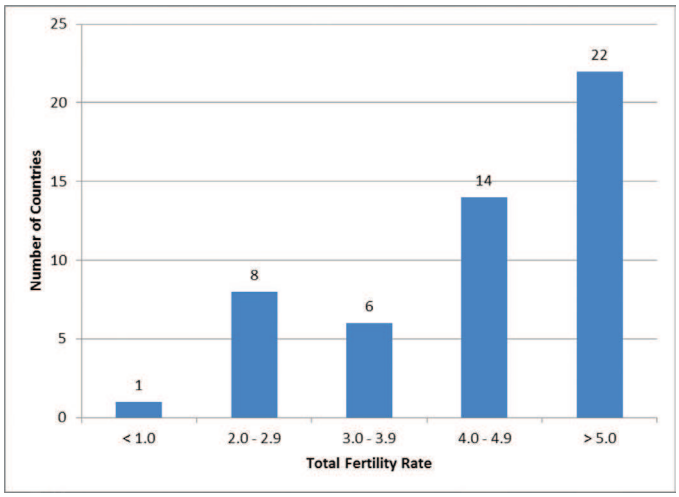


Figure 11. Total Fertility Rate in African Countries [63]

A study based on Department of Human Services' data from 40 countries shows that, on average, fertility rates were lower among countries with better social settings and stronger family planning programmes. In addition, fertility was positively associated with infant mortality, negatively associated with female education, and not associated with poverty.[64]

Reduced fertility rates lead to concurrent declines in youth dependency rates and, in turn, boost income per person. Other benefits include improved social status and economic capacity among women, reduced gender inequality, and increased formal employment opportunities for women. In addition to these immediate economic benefits, lower fertility rates also contribute to improved health and education among children. In the coming years, these children will enter the workforce and contribute more significantly to countries' economic growth.[65]

[62] Fertility Transition: Is sub-Saharan Africa Different? John Bongaarts, John Casterline http://www.popcouncil.org/pdfs/PDRSupplements/Vol38_PopPublicPolicy/Bongaarts_pp153-168.pdf

[63] http://wwwr.worldbank.org/.../FertilityFamilyPlanning_all.xlsx

[64] Anrudh K. Jain and John A. Ross Fertility Differences Among Developing Countries: Are They Still Related to Family Planning Program Efforts and Social Settings?

[65] David Canning, T Paul Schultz The economic consequences of reproductive health and family planning Published Online July 10, 2012 http://dx.doi.org/10.1016/ S0140-6736(12)60827-7

3.3.2. Contraceptive Prevalence Rates

In Africa south of the Sahara, only 17 percent of married women are using contraceptives, compared to 50 percent in North Africa and the Middle East, 39 percent in South Asia, 68 percent in Latin America and the Caribbean, and 76 percent in East Asia and the Pacific. Contraceptive prevalence rates in over 80 percent of African countries are below 50 percent. (see Figure 12) In Africa south of the Sahara, only a few nations' family planning programmes have been successful enough to significantly increase contraceptive use. These include South Africa, Zimbabwe, Botswana, and Kenya.

Between 2003 and 2008, the number of women using modern contraception methods rose by almost 100 million in developing countries (from 504 million to 603 million). This translates to an annual increase of 20 million users. In comparison, between 2008 and 2012, the number of women using modern contraception methods increased by 42 million in the developing world. This translates to an average annual increase of roughly 10 million users. Fifty-two percent of this increase was due to population growth and 48 percent was due to increased contraceptive prevalence rate.

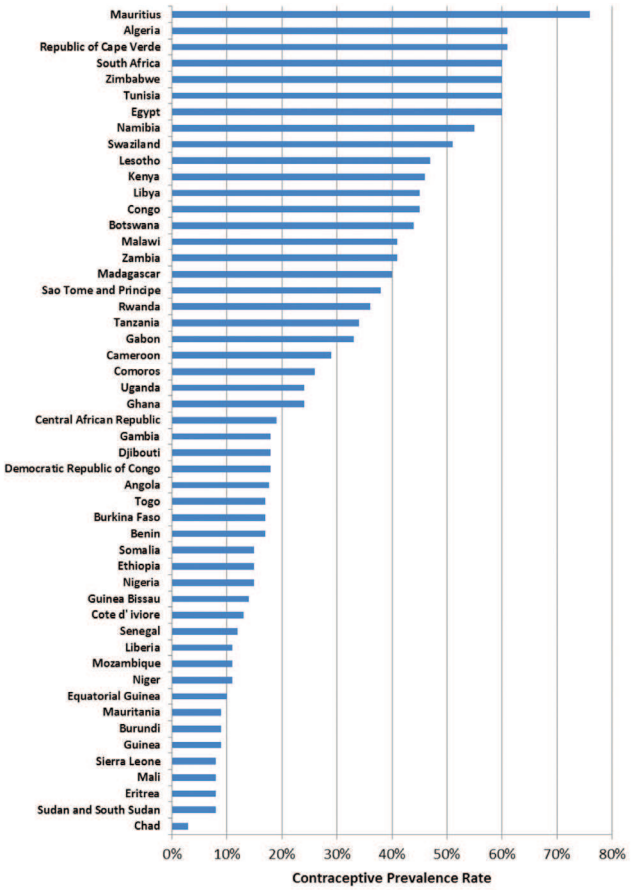


Figure 12. Contraceptive Prevalence Rates in African Countries

Region and Sub-region	All women aged 15-49 using modern methods (in millions)			Married women aged 15-49 using modern methods (in millions)		
	2008	2012	Annual % Change	2008	2012	Annual % change
All Countries in Africa	46	51	2.7	23	24	0.2
All Countries South of the Sahara	31	36	4.2	17	17	0.7
• East Africa	12	17	11.7	20	27	8.6
• Central Africa	2	2	1.9	7	7	0.7
• South Africa	7	9	5.8	54	58	1.9
• West Africa	6	7	2.8	9	9	-0.3
All Countries in North Africa	19	16	-3.9	55	45	-4.8
69 Poorest Countries, Globally	229	252	2.6	39	40	0.7
Developing Countries, Globally	603	645	1.7	56	57	0.4

Table 2. Progress in Number of Women using Modern Contraceptive Methods Globally and in African Regions, 2008-2012 [66]

For example, the proportion of currently married women in the developing world using modern methods barely changed between 2008 (56 percent) and 2012 (57 percent).

Substantial increases in the use of modern contraceptive methods among married women have been recorded in East Africa (from 20 percent in 2008 to 27 percent in 2012). Notably, there was no increase in West Africa or Central Africa, where modern contraceptive use remains low. Because these regions have weak health systems and high mortality rates, they urgently need comprehensive contraception and MNCH services.

A 2012 case study in East and Southern Africa showed promising progress in contraceptive use in Botswana, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Namibia, Rwanda, South Africa, Swaziland, and Zimbabwe. The study outlined nine drivers of change including political will, sustained financing, health system strengthening, and commodity security.[67] Although these interventions have proven successful, much more must be done to increase access to and utilization of contraceptive services in Africa. Nations with low contraceptive prevalence rates, such as Sudan (9 percent), Somalia (15 percent), and Djibouti (18 percent), face formidable challenges to increasing their contraceptive prevalence rates.

3.3.3. unmet need for family planning

Unmet need for family planning refers to the percentage of women who do not want to become pregnant but are not using contraception. Between 2008 and 2012, the unmet need for family planning in developing countries dropped by less than two percent (from 226 to 222 million). Today, in the world's 69 poorest countries, 73 percent of women have an unmet need for family planning. Between 2008 and 2012, this number increased from 153 to 162 million women.[68]

All African countries have an unmet need for family planning and an even greater need for birth spacing, and in most of these countries, at least 5 percent of women do not wish to have any more children. African countries can broadly be categorized into the following two groups:

- Countries where more than 15 percent of women want to stop childbearing altogether: Lesotho and Swaziland; and
- Countries where more than 15 percent of women want improved birth spacing between children: Benin, Burkina Faso, Chad, Côte d'Ivoire, DRC, Eritrea, Ethiopia, Gabon, Ghana, Liberia, Malawi, Mali, Mauritania, Rwanda, Senegal, Sierra Leone, Uganda, and Zambia.

The use and choice of family planning methods depends on both the user's preference and their health system's characteristics. Strong family planning programmes rely on effective family planning service delivery strategies, such as those that offer methods tailored to users' needs, provide family planning counseling and medical expertise for administering methods, and follow up on users' response to the methods. Countries in the region with frail health systems often have financial, human resource, and capacity constraints that make it challenging to improve contraceptive use.[69]

[66] Singh S and Darroch JE, Adding It Up: Costs and Benefits of Contraceptive Services_ Estimates for 2012, New York: Guttmacher Institute and United Nations population Fund (UNFPA), 2012, http://www.guttmacher.org/pubs/AIU-2012-estimates.pdf.

[67] Assessment of Drivers of Progress in Increasing Contraceptive use in sub-Saharan Africa; Case Studies from Eastern and Southern Africa. *Preliminary report* 1 March 2012 African Institute for Development Policy

[68] http://www.guttmacher.org/media/nr/2012/06/19/index.html

[69] Family Planning Trends in Sub-Saharan Africa: Progress, Prospects, and Lessons Learned *Mona Sharan, Saifuddin Ahmed, John May, and Agnes Soucat*

3.3.4. Repositioning Family Planning

Because family planning and reproductive health programmes are key to improving nations' health and demographics, it is important that stakeholders and donors invest more resources to support, expand, and sustain these programs. As the number of women of reproductive age groups increases, the proportion of women who want to use contraception is also increasing.

In many countries, family planning programmes have successfully used mass media communication campaigns to raise awareness about the benefits of family planning, legitimize small families, and change reproductive preferences.[70] Programmes can use these same communication channels to address many of the reasons why women with unmet family planning needs do not use contraception. Well-designed, evidence-based messages can explain the risks associated with pregnancy among women who are breastfeeding or have sex infrequently, address concerns about contraception risks and side effects, publicize ways to access family planning commodities, and address religious or other opposition to modern contraceptives.

Health service integration offers another, complementary way to reach women with family planning services. Whenever women seek health care, there is an opportunity to identify and address their unmet need for family planning. Oftentimes, women who are pregnant, seeking an abortion, delivering a baby, or receiving HIV services are more receptive to, and in need of, family planning information and
services.[71] Integrating family planning into these and other health services is convenient for clients and can address other health problems.

In July of 2012, the London Family Planning Summit brought together governments, United Nations agencies, and foundations with the aim of revitalizing global commitments to family planning and access to contraceptives as a cost-effective and transformational development priority. Family Planning 2020 builds on the partnerships launched at the London Summit on Family Planning.[72] This partnership will sustain the momentum from London and ensure that all stakeholders are working together to achieve and support the goals and commitments established at the Summit.[73]

[70] Dayaratna V, Winfrey W, McGreevey W, et al. Reproductive Health Interventions: Which Ones Work and What Do They Cost? Washington, DC: The Futures Group International, POLICY Project; 2000. Available at: www.policyproject.com/pubs/occasional/ op-05.pdf.

[71] Bernstein S. Public Choices, Private Decisions: Sexual and Reproductive Health and the Millennium Development Goals. New York: UN Millentnium Project; 2006. Available at: www.unmillenniumproject.org/reports/srh_main.htm.

[72] Family Planning 2020 is a global partnership that supports the right of women and girls to decide, freely, and for themselves, whether, when, and how many children they want to have. Family Planning 2020 works with governments, civil society, multi-lateral organizations, donors, the private sector, and the research and development community to enable 120 million more women and girls to use contraceptives by 2020. Family Planning 2020 is an outcome of the 2012 London Summit on Family Planning where more than 20 governments made commitments to address the policy, financing, delivery and socio-cultural barriers to women accessing contraceptive information, services and supplies. http://www.psi.org/first-anniversary-update-london-summit-family-planning

[73] http://www.londonfamilyplanningsummit.co.uk/index.php

3.4. ADOLESCENT SEXUAL AND REPRODUCTIVE HEALTH

Globally, African countries constitute 20 of the 25 countries with the highest adolescent fertility rates. In many African countries, adolescents make up to one-third of the population. These young people face a range of health and social challenges. For example, adolescent girls who engage in sexual activity before they have acquired adequate knowledge and skills to protect themselves are at a higher risk of unwanted pregnancy, unsafe abortion, and sexually transmitted infections, including HIV/AIDS. Consequently, adolescent pregnancy is growing, as well as the number of young girls exposed to HIV.

Globally:

- Approximately 16 million adolescent girls give birth every year, most in low- and middle-income countries;
- An estimated three million girls aged 15-19 undergo unsafe abortions every year;
- In low- and middle-income countries, complications from pregnancy and childbirth are a leading cause of death among girls aged 15-19 years;
- Stillbirths and newborn deaths are 50 percent higher among infants of adolescent mothers than among infants of women aged 20-29 years; and
- Infants of adolescent mothers are more likely to be born with low birth weight.

In many AU member states, a high prevalence of underage marriage and childbearing is associated with higher maternal mortality and morbidity, as well as neonatal and infant mortality. In 30 African countries, 30 percent to 75 percent of underage girls are forced into marriage. Twenty-two of these nations are also among the world's 30 countries with the highest MMRs and 23 are among the world's 30 countries with the highest CMR.[74]
Underage marriage is detrimental to the health and social development of African youth and Africa, as a whole. Today, the practice places an estimated 37.4 million young girls at risk for:

- Maternal mortality,
- HIV infection,
- Lack of access to reproductive and sexual health, and
- Social, psychological, and physical violence.

Underage marriage excludes many girls from education and inhibits their ability to contribute to Africa's economic and social development. Reducing underage marriage will improve girls' sexual and reproductive health, rights, aspirations, and capacity to contribute to the development of Africa.[75]

In the developing world, one in seven girls is married before the age of 15 and some child brides are as young as eight or nine. Pregnancy during adolescence is associated with higher risk of health problems like anemia, sexually transmitted infections, unsafe abortion, postpartum hemorrhage, and mental disorders, such as depression. Pregnant adolescents also bear negative social consequences and often have to leave school. Girls who have not completed their education are less employable and often suffer long-term, economic limitations.

[74] 2013 Africa Scorecard on Multi-Faceted Violence Against Young Girls & Women produced by Afri-Dev. Info & the Africa Coalition on Maternal, Newborn and Child Health

[75] On Youth Development, from just health – to health, human and social development: Transition document of the Africa Public Health Alliance to the Africa Health, Human and Social Development Alliance.

Unmet needs for family planning, especially birth spacing, are high among adolescents. AU member states and the regional economic communities, with support from civil society organizations, are working to address these challenges. Specifically, these stakeholders are providing technical support to strengthen health systems and improve staff capacity to provide adolescent-friendly sexual and reproductive health services.

Many adolescents need sexual and reproductive health services, including accurate information, effective contraception, and treatment for sexually transmitted infections. Unfortunately, these services are often not available or are provided in a way that makes adolescents feel unwelcome and embarrassed. Much must be done to sensitize health providers about the adolescents' needs and developmental characteristics so they can more successfully reach these youth with effective support and services.

African Countries with 75% or more Births Attended by an SBA, 2000–2009
(in order of achievement)

1. Mauritius
2. Algeria
3. Tunisia
4. Botswana
5. South Africa
6. São Tomé and Príncipe
7. Namibia
8. Zimbabwe
9. Egypt
10. Cape Verde

3.5. SKILLED BIRTH ATTENDANCE

A skilled birth attendant (SBA) is an accredited health professional, such as a midwife, nurse, or doctor, who has been educated and trained to proficiency in the skills necessary to manage normal deliveries and diagnose, manage, or refer obstetric complications.[76] SBAs must be able to manage normal labour and delivery, perform essential interventions, initiate certain patient treatments, and supervise patient referrals for services that are beyond their competence or not possible in a particular setting.

The proportion of births attended by SBAs is currently lower in Africa south of the Sahara than it is in all other developing regions worldwide. In the six worst-performing countries, Burundi, Chad, Eritrea, Ethiopia, Niger, and Somalia, only one-third of women delivered with the help of an SBA. Kenya, Lesotho, Liberia, Madagascar, Somalia, and Zambia recorded either a lack of progress or regression on this indicator. For example, in Sudan, births attended by an SBA dropped from 86.3 percent from 1990–1999 to 49.2 percent from 2000–2009. This decline is most likely due to political instability and conflicts within the country.

Between 13 percent and 33 percent of maternal deaths could be averted by the presence of an SBA during labour and delivery.[77] However, many SBAs are not properly trained in international, evidence-based standards for skilled management of basic and emergency obstetrics. Throughout Africa, health programs must ensure they have, not only an adequate quantity of SBAs, but also, that the SBAs are thoroughly and accurately trained[78] and that they maintain their skills.

[76] WHO (2004) Making pregnancy safe; critical role of skilled birth attendant. A joint statement by WHO, ICM and FIGO. Geneva; WHO

[77] Graham, W. Bell, JS. Bullough, W. (2001). Can skilled attendance reduce maternal mortality in developing countries? Stud HSO&P. 17 (97-129). http://www.kit.nl/net/KIT_Publicaties_output/ShowFile2.aspx?e=1552

[78] Gill, K. et al (2007). Women deliver for development. *Lancet* (2007); 370; 1347-57.

3.6 NUTRITION

Key indicators of maternal nutrition are stature, body mass index, and micronutrient levels. Poor maternal nutrition contributes to at least 20 percent of maternal deaths and increases the probability of other pregnancy risks, such as newborn deaths. Short maternal stature, often a result of childhood stunting, is also a risk factor for obstructed labour due to a disproportion between the baby's head and the mother's pelvis. Prolonged obstructed labour, combined with a lack of access, or delayed access, to Caesarean delivery services, can result in maternal mortality, neonatal mortality due to birth asphyxia, or debilitating long-term health consequences, such as obstetric fistula. In many countries with high maternal under-nutrition, women also lack access to emergency Caesarean delivery services.

Limited information is available on maternal micronutrient deficiencies. A WHO review of nationally representative surveys from 1993 to 2005 found that 42 percent of pregnant women worldwide are anaemic, more than half due to iron deficiency. Prenatal folic acid deficiency, also widespread, is associated with increased risk of neural tube defects. Further research is needed to understand the relationships between maternal under-nutrition and short- and long-term maternal and child health outcomes.

The period from conception to the child's second birthday, the first 1,000 days, provides a critical window of opportunity in which interventions to improve maternal and child nutrition can have a significant, positive impact on children's prospects for survival, growth, and development.

In response, experts and programme partners around the world have agreed on the following package of nutrition interventions for the child's first 1,000 days:

- Maternal nutrition during pregnancy and lactation, particularly iron and folic acid supplements during pregnancy;
- Initiation of breastfeeding within the first hour after birth, exclusive breastfeeding for the first six months, and continued breastfeeding up to at least 24 months of age; and
- Adequate complementary feeding from six months onward and micronutrient interventions, as needed.

Early initiation of breastfeeding, preferably within the first hour after birth, reduces a mother's risk of post-partum haemorrhage and contributes to reducing overall neonatal mortality.[79] The colostrum found in breast milk provides infants with protective antibodies and essential nutrients, strengthens their immune system, and reduces their risk of death in the neonatal period.[80]

[79] Edmond, Karen, et al., 'Delayed Breastfeeding Initiation Increases Risk of Neonatal Mortality', Pediatrics, vol. 117, no. 3, 1 March 2006, pp. e380–e386; and Mullany, Luke C., et al., 'Breastfeeding Patterns, Time to Initiation and Mortality Risk Among Newborns in Southern Nepal', Journal of Nutrition, vol. 138, March 2008, pp. 599–603.

[80] Huffman, Sandra L., et al., 'Can Improvements in Breast-feeding Practices Reduce Neonatal Mortality in Developing Countries?' Midwifery, vol. 17, no. 2, June 2001, pp. 84–86.

3.7 IMMUNIZATION

Guidelines published by WHO in 2011 support a new vaccination strategy that includes the introduction of rubella-containing vaccines. Earlier thinking in rubella disease control had emphasised immunising adolescent girls and women of child-bearing age to decrease the risk of CRS. However, in many settings, barriers to access resulted in limited vaccine coverage among these groups and the rubella virus continued to circulate. The new approach focuses on interrupting transmission of rubella virus, thereby eliminating rubella as well as CRS over the long term.

Accelerating the use of a combined measles-rubella vaccine in Africa will improve disease control and reach a larger number of those most in need of protection. Beginning in 2013, many African countries are launching large-scale "catch up" measles-rubella immunization campaigns. Several countries are also self-financing the introduction of the vaccine in their routine immunization programmes. Promoting a single, cost-effective vaccine that prevents two life-threatening diseases is a major step toward accelerating measles and rubella control in Africa.

There are, however, considerations for programmes seeking to increase coverage. Rubella infection just before conception or during pregnancy can lead to miscarriage, stillbirth, and cause congenital rubella syndrome (CRS) in newborns. CRS causes many birth defects including heart problems, deafness, or blindness. The WHO estimates that, in 1996, 22,000 children were born with CRS in Africa. Because few countries in Africa had introduced the rubella-containing vaccine in 1996, current estimates are believed to be in line with these figures.

The rubella vaccine given at the appropriate time offers long-term protection against CRS and is often given in combination with measles vaccines such as the measles rubella vaccine or the measles mumps rubella vaccine. The measles rubella vaccine is considered safe and costs just US $0.50 per dose. Although Africa has one of the highest burdens of CRS, it also has one of the lowest uptake rates of rubella-containing vaccines in the world. In 2010, more than one-third of all countries, most of which are in Africa, were not using the rubella vaccine in their national immunization programs.

Cancer is an emerging health issue in Africa and, in many African nations, cervical cancer is the leading cause of cancer-related deaths among women. In 2008, 542,000 deaths were attributed to cancer in Africa. This number is expected to rise to 970,000 by 2030.[81] Safe and effective vaccines against human papilloma virus (HPV) types 16 and 18, which cause about 70 percent of cervical cancer cases, provide a tremendous opportunity to reduce cervical cancer incidence in Africa. Immunizing girls before the initiation of sexual activity and possible exposure to the HPV is a key strategy to prevent cervical cancer. The WHO recommends that all girls ages 9 to 13 years receive the HPV vaccination through national immunization programmes in African countries where cervical cancer constitutes a public health priority and vaccine introduction is feasible.

2013 is a landmark year for Africa's girls, as the first seven African countries pilot ways to deliver the HPV vaccine and other health interventions designed to improve the lives of adolescent girls. These projects will pave the way for countries to strengthen capacity and build the infrastructure needed to vaccinate girls nationwide.

[81] Ferlay J, Shin HR, Bray F, Forman D, Mathers CD, Parkin D. GLOBOCAN 2008, Cancer Incidence and Mortality Worldwide: IARC Cancer-Base No.10 [Internet]. Lyon, France: International Agency for Research on Cancer, 2010. Available from : http://globocan.iarc.fr

3.8. REINFORCING THE CAMPAIGN ON ACCELERATED REDUCTION OF MATERNAL, NEWBORN, AND CHILD MORTALITY IN AFRICA (CARMMA)

The Campaign on Accelerated Reduction of Maternal Mortality in Africa (CARMMA) is an AUC initiative designed to promote and advocate for renewed and intensified implementation of the *Maputo Plan of Action (MPoA) for the Reduction of Maternal Mortality in Africa*. Although the principal focus of CARMMA is maternal mortality, it also addresses the impact of maternal mortality on child mortality and family health outcomes.

CARMMA was launched in May of 2009 during the AU's Conference of Ministers of Health in Addis Ababa. CARMMA derives its significance and authority from previous maternal health and MDG commitments made by African Heads of State and Government.

In implementing the MPoA, African leaders are making an unprecedented effort to revise, update, and develop policies, strategies, and plans related to sexual and reproductive health and rights (SRHR). The main challenges and lessons most countries have encountered in implementing the MPoA relate to inadequate resources, weak health systems, inequities in access to services, a weak multi-sector response, inadequate data, and national development plans that do not prioritize health.[82]

CARMMA was inspired by concern over the slow progress African nations were making in reducing maternal mortality by 75 percent before 2015. There was also growing concern over new challenges to social development and women's health including threats from the global financial crisis, unpredictable aid future, climate change, and food crises.[83]

Under leadership from the AU and support from African governments, CARMMA has been launched in 40 African countries. Because of the desire to speed-up progress toward MDGs 4 and 5, a number of initiatives linked to CARMMA have been launched by the global community.

Some of these initiatives include:

- *The United Nation's Secretary General's Global Strategy on Women's and Children's Health,*
- The United Nation's Commission on Life-Saving Commodities for Women and Children,
- Commission on Information and Accountability for Women's and Children's Health,
- *The Save the Mother and Save the Child Initiative* of thet Prevention and Elimination of Mother to Child Transmission of HIV, and
- The Global and Regional Partnerships on Reproductive, Maternal, Newborn, and Child Health.

The 15th Ordinary Summit of the AU Heads of state and government, held in Kampala, further strengthened CARMMA and reaffirmed commitments to MNCH on the continent. One of these key commitments includes the following:

"Strengthen the health system to provide comprehensive, integrated maternal, newborn, and child health care services, in particular, through primary health care, repositioning of family planning, including reproductive health commodities' security, infrastructure development and skilled human resources for health in particular to train community health workers to mitigate the human resource crisis in the health sector."

Other commitments included government stewardship, partnerships, sustainable financing, and advocating for the Global Fund to Fight AIDS, Tuberculosis, and Malaria to create a new window for MNCH program funding.

[82] http://www.au.int/pages/carmma/documents/maputo-plan-action-5-year-review

[83] http://au.int/pages/carmma/whatis

In January of 2013, at the 20th AU Summit, AU Heads of State and Government deliberated on the status of MNCH in Africa. This discussion led the Assembly to reaffirm its previous commitment to universal access to prevention, treatment, and support services and underscore its commitments contained in the MPoA, CARMMA, and the Abuja Declaration on HIV/AIDS, Tuberculosis, Malaria and Other Infectious Diseases. Participants also agreed to redouble efforts to improve the health of African women and children as spelled out in the Assembly's *Actions on Maternal, Newborn, and Child Health and Development in Africa.*[84]

Another important event that took place at the 20th AU Summit was a forum on CARMMA attended by over 30 heads of states and governments. This event was hosted by the President of the Republic of Benin, the then AU Chair. During the Summit, AU ministers of health were asked to develop a report that shows the state of MNCH in Africa, examines progress made toward improving MNCH, and maps out concrete and innovative large-scale strategies to address the health needs of African women and children. Minsters were asked to submit their report to the 21st Session of the Ordinary AU Assembly.

In response, the request from Heads of State and Government, the AU's Ministers of Health have mapped out the following concrete and innovative strategies for improving MNCH in Africa. These recommendations are based on the outcomes from the Summit event on CARMMA, best practices from various African countries, and findings from international organizations and partners working in the field of maternal health.

- Collectively and individually redouble efforts to improve MNCH and, thereby, reduce maternal and child mortality to accelerate progress toward achieving MDGs 4 and 5
- Ask the AUC and the United Nations Population Fund (UNFPA) to work together to establish a continental structure for monitoring MNCH progress and facilitating best practices among member states
- Encourage member states that have not yet done so to launch CARMMA and invite all member states to reinforce MNCH interventions by exploring innovative and sustainable approaches to secure human and financial resources to support these activities
- Ask the Africa Development Bank, the AUC, and UNFPA to develop a mechanism to source, pool, and manage resources in support of MNCH, including the promotion of inter-continental cooperation on best practices
- Foster and strengthen global- and country-level partnerships with development groups including civil society organizations, professional associations, the private sector, women's groups, and youth groups
- Expand access to family planning and other reproductive health services and reduce unmet needs for contraception
- Take concrete measures to strengthen health systems with a particular focus on improving health infrastructure and ensuring effective supply chain management for life-saving commodities to support universal access to high-impact MNCH interventions, especially those under the *Every Woman, Every Child* global strategy and its commissions[85]
- Invest in human resources for health by building the capacity of skilled and motivated health workforces, especially midwives, to increase access to skilled birth attendants and strengthen emergency referrals

[84] Under Assembly/AU/Decl.1(XI)

[85] *Every Woman Every Child* is a global movement, spearheaded by United Nations Secretary-General, Ban Ki-moon, to mobilize and intensify global action to improve the health of women and children around the world. Working with leaders from governments, multilateral organizations, the private sector and civil society, Every Woman Every Child aims to save the lives of 16 million women and children and improve the lives of millions more. http://www.everywomaneverychild.org/#sthash.6z2x7sNm.dpuf

- Scale-up coverage of more effective antiretroviral interventions and safer infant feeding practices to eliminate mother-to-child transmission of HIV, while implementing other measures to prevent new HIV infections among women of reproductive age
- Recognize the need to hold a 2013 international maternal health conference where stakeholders can share best practices and enhance south-south cooperation
- Incorporate activities to support women and children's health and wellbeing (i.e., education, food, housing, and employment) into line ministries and national development plans
- Develop costed and evidence-based plans to address MNCH priorities and implement high-impact interventions to address funding gaps and meet the targets of MDGs 4 and 5 (with support from Harmonization for Health in Africa partners)[86]
- Improve quality of care across the continuum of care and ensure that services are organized and delivered in an integrated and comprehensive manner
- Build country capacity for operations research in MNCH and strengthen health information systems including vital events registration
- Address inequities in MNCH service coverage
- Establish CARMMA Councils at national and sub-national levels to provide oversight for evidence-based planning and monitoring of services and tracking availability and utilization of domestic and external resources

These activities are based on the Assembly's thorough examination of the continental challenges in achieving MDGs 4, 5, and 6 and reiterate previous commitments made by African leaders. Once implemented, these interventions will undoubtedly accelerate the status of the MNCH improvements on the continent. Today, most African countries have the capacity to improve MNCH by effectively using available resources, securing additional resources, strengthening health systems with a focus on human resources for health, securing essential and life-saving commodities, fostering partnerships, implementing evidence-based interventions, and monitor programming.

[86] Harmonization for Health in Africa is a collaborative initiative by the African Development Bank, the Japan International Cooperation Agency, the North American Aerospace Defense Command, UNAIDS, UNFPA, UNICEF, USAID, WHO, and the World Bank to provide regional support to governments in Africa in strengthening their health systems. Harmonization for Health in Africa was created as a mechanism to facilitate and coordinate the process of country-led development in all aspects of health systems strengthening. The collaborating partners focus on providing support in the areas of health financing, human resources for health, pharmaceutical supply chains, governance and service delivery, infrastructure and information and communication technology. http://www.hha-online.org/hso/

3.9 ENGAGING MEN IN MATERNAL, NEWBORN, AND CHILD HEALTH

Although USAID's Interagency Gender Working Group has pointed out that MNCH is an area where men can play an important role, many countries have yet to explore men's potential to support the health of women and children. Health workers' and women's efforts to reduce maternal and child morbidity and mortality could undoubtedly be enhanced with support from members of women's households. To inspire this support, health workers must educate fathers and other family members about MNCH risks and the important roles they can play in identifying and responding to women and children's health problems. More specifically, men can support women by ensuring they maintain proper nutrition during pregnancy and attend the recommended number of prenatal care appointments. Men can also learn to recognize and address the symptoms of pregnancy complications. Varied evidence suggests that men who are more involved in the health of their families enjoy better health themselves and closer relationships with their family members. Some research also indicates that male involvement in child care can enhance the relationship between men and boys and lead to reduced male violence. Men who are involved in caring for their children may also develop a greater understanding and respect for the work that child-rearing requires.

Evaluations of male involvement programmes and research on the factors that impact male involvement in MNCH have revealed a series of challenges that often arise when working to engage men in protecting and promoting their family's health. These challenges include traditional gender norms that dissuade men from taking an active role in caring for the health of their wives and children or from attending female-dominated clinics. Other impediments to men's engagement in maternal and newborn health include negative community perceptions toward men who play an active role in caring for their family's health, a lack of knowledge regarding men's role in MNCH, and health services that are not designed or implemented to facilitate male inclusion.

Some research suggests that including men in reproductive and MNCH services and education can contribute to improved coverage of care and MNCH health outcomes in low- and lower-middle income countries. Including men in health services and outreach that is often targeted at women has been connected to the following benefits:

- Improved family planning and contraceptive use in long-term couples,
- Reduced maternal workload during pregnancy,
- Birth preparedness,
- Increased attendance at postnatal care appointments,
- Improved communication between couples, and
- Enhanced emotional support for women during pregnancy.

Evidence-based guidance for male involvement programmes is available for those interested in pursuing this promising approach to improving MNCH.

These guidelines include a series of implementation approaches including strategies to reach men in their communities, workplaces, and clinics. Program evaluations indicate that including men in MNCH interventions can be simple, welcome, relatively inexpensive, and implemented in a variety of settings.

4. Integration of Services

Integrated service delivery means managing and delivering health care so clients receive a continuum of preventive and curative services, according to their needs over time, and across different levels of the health system.[87] Integrated health service delivery is not a new strategy; it was the basis for the focus on primary health care in the 1980s. The continuum of care for reproductive, maternal, newborn, and child health includes integrated service delivery for mothers and children from pre-pregnancy to delivery, the immediate postnatal period, and childhood. Such care is provided by families and communities, through outpatient services, clinics, and other health facilities.

The continuum of care approach emphasizes the importance of safe childbirth for the health of both women and newborns and recognizes that a healthy start in life is essential for a wholesome childhood and productive life.[88]

[87] Integrated Health Services – What And Why? http://www.who.int/healthsystems/service_delivery_techbrief1.pdf Technical Brief No.1, 2008

[88] PMNCH Fact Sheet: RMNCH Continuum of care Reproductive, maternal, newborn and child health. Updated September 2011 http://www.who.int/pmnch/about/continuum_of_care/en/

The slow global progress toward achieving MDGs 4 and 5 has been attributed to low coverage of key preventive and curative MNCH interventions. In response, the global health community is exploring innovative strategies to increase MNCH service coverage. One promising approach is integrated delivery of HIV, family planning, and MNCH interventions. Such service integration would allow health workers to address multiple patient needs simultaneously and in one location for enhanced programme effectiveness and efficiency. This approach would undoubtedly expand access to both HIV and MNCH services, thereby contributing significantly to the achievement of the health-related MDGs.

Across the African continent, most HIV, MNCH, and family planning services are offered in isolation. In recent years, programme managers and policymakers have begun to recognize the missed opportunities and inefficiencies created by these vertical approaches. Experiences in some countries in Africa south of the Sahara suggest that integrating reproductive health and HIV services may improve access to contraception for HIV-infected individuals, increase uptake of prevention of mother-to-child transmission of HIV services and cervical cancer screening, and lead to earlier initiation and sustained use of anti-retroviral therapy.

In South Africa, the integrated service delivery approach was applied by offering antiretroviral therapy services to pregnant women at an antenatal care clinic. An evaluation of this intervention revealed a 33 percent reduction in time from HIV diagnosis to antiretroviral therapy initiation (before integration, the median time was 56 days, and after integration it was just 37 days). This integrated approach was also associated with a 42 percent reduction in time from HIV testing to receipt of results (before integration, the median time was 50 days, after integration it was just 29).[89] Similar evaluations in Malawi, Zambia, and Tanzania have all pointed to the potential health benefits of integrated MNCH, family planning, and HIV services.[90, 91, 92]

National estimates of health service coverage often mask important inequities. For example, health service coverage in many countries is substantially higher among women and children from richer households, but inequities in coverage vary by intervention. Interventions that require a functional health system, such as skilled birth attendance, are particularly inequitable, while interventions that do not, such as vaccines, are more equitable.[93] Countries should report on their socioeconomic inequities that impact health service coverage so these issues can be addressed. Integrated delivery of services along the continuum of care is one potential strategy to reduce inequities in service availability and utilization.

[89] Van der Merwe K, et al. Integration of antiretroviral treatment within antenatal care in Gauteng Province, South Africa. *J Acquir Immune Defic Syndr* 2006;43:577–581

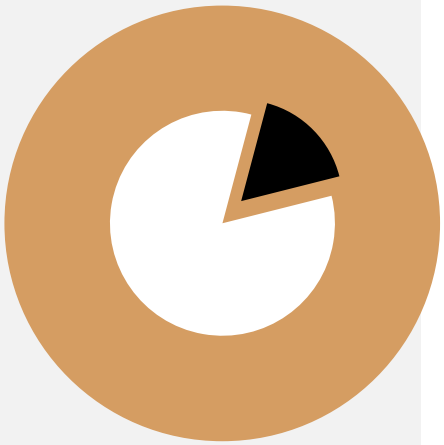
[90] Bahwere P, et al. Uptake of HIV testing and outcomes within a Community-based Therapeutic Care (CTC) programme to treat severe acute malnutrition in Malawi: a descriptive study. BMC Infect Dis 2008; 8:106.

[91] Killam WP, et. al. Antiretroviral therapy in antenatal care to increase treatment initiation in HIV-infected pregnant women: a stepped-wedge evaluation. *AIDS* 2010; 24:85–91

[92] Rasch V, et al. Post-abortion care and voluntary HIV counseling and testing—an example of integrating HIV prevention into reproductive health services *Trop Med Int Health* 2006; 11:697–704

[93] Barros, A.J., C. Ronsmans, H. Axelson, E. Loaiza, A.D. Bertoldi, G.V. Franca, and others. 2010. "Equity in Maternal, Newborn, and Child Health Interventions in Countdown to 2015: A Retrospective Review of Survey Data from 54 countries. *Lancet* 379 (9822): 1225–33.

5. Financing of Maternal, Newborn, and Child Health Interventions



Governments can increase access to care and reduce financial barriers to reproductive health and MNCH services by funding these programs and passing pro-poor legislation. Such legislation may include expanding fully or partially subsidized prepayment schemes, removing user fees and other financial barriers to access, instituting conditional cash transfer schemes, and creating universal health care systems.[94]

[94] Borghi, J., T. Ensor, A. Somanathan, C. Lissner, and A. Mills. 2006. "Mobilising Financial Resources for Maternal Health." *Lancet* 368 (9545): 1457–65.

5.1. STATUS OF MATERNAL, NEWBORN, AND CHILD HEALTH FINANCING

AU member states have made great strides in financing health care and meeting the Abuja target of allocating at least 15 percent of their national budgets to health. Over 55 percent of African countries have allocated over 10 percent of their total government expenditures to health. Even more encouraging is the fact that Madagascar, Togo, Zambia, Botswana, and Rwanda have all attained the Abuja target. (See Figure 13) Despite these remarkable achievements, other countries, such as Guinea, Chad, Eritrea, Guinea Bissau, Somalia, Sudan, and Nigeria, have committed less than 5 percent of their national budgets to health. In most countries, the proportion of the national health budget allocated to MNCH services has not been determined.

Donors have offered tremendous support for MNCH interventions in Africa. It is estimated that donor disbursements for MNCH increased by 64 percent between 2003 and 2006 (from US $2.12 billion to $3.48 billion). Of the US $3.48 billion disbursed in 2006, 66 percent (US $2.31 billion) was spent on child health services and 34 percent (US $1.17 billion) on maternal and neonatal health services. In 2006, 54 percent of donor assistance for MNCH interventions in Africa came from bilateral agencies, 31 percent from multilateral financers (i.e., the World Bank, UNFPA, UNICEF, and the European Commission), and 15 percent from GAVI and the Global Fund to Fight AIDS, Tuberculosis, and Malaria. The two leading MNCH financers were the World Bank (US $725 million) and the US government (US $692 million).[95]

[95] The World Bank financing to MNCH may be overinflated because, until 2008, the World Bank was the only organization that reported commitments (not disbursements).

5.2. INNOVATIVE FINANCING OF MATERNAL, NEWBORN, AND CHILD HEALTH INTERVENTIONS

To accelerate progress in MNCH service coverage, Africa may need to move away from the traditional forms of funding and begin to explore more innovative funding sources. One such source is the International Finance Facility for Immunization, which uses long-term, legally binding donor commitments to issue bonds on the international capital markets and provides cash that can be used by organizations, such as GAVI, to partner with African countries to fund health programmes. Another innovative financing mechanism, the Advance Market Commitment, has accelerated the development and manufacture of pneumococcal vaccines, which are now being introduced in many African countries. Finally, African businesses are showing increasing interest in providing financial resources, advocacy, and core business skills training to advance health service coverage in Africa.

Countries may also enhance their MNCH programmes by researching and applying strategies that have been used to raise funds for other health programs, such as HIV/AIDS and malaria. For example, the air ticket levy, a small contribution added to outbound airplane tickets, is one of the most successful innovative financing mechanisms in Africa today. Several African countries have already implemented this levy with support from UNITAID.[96] The fee has helped many countries increased access to the best medicines and diagnostic products for vulnerable populations. The air ticket levy strategy allows African countries to use their economic growth to generate resources that can support health service provision.

Many African nations have used successful fund-leveraging strategies that can be applied more broadly. For example, Ghana utilizes a national health insurance levy to finance 70 percent of its national health insurance scheme. Taxes on profitable sectors and large corporations have also been used to fund national health initiatives. In 2008, Gabon's government implemented a 10 percent tax on mobile phone companies' profits. These funds are used to cover citizens who are not able to contribute to national health insurance. Placing an excise tax on products that pose health risks, such as tobacco, is considered a "win-win" strategy since it helps reduce risky behavior while, at the same time, increasing domestic revenues. Other taxes that countries use to raise revenues include financial transactions-related taxes, tourism taxes, and luxury taxes.

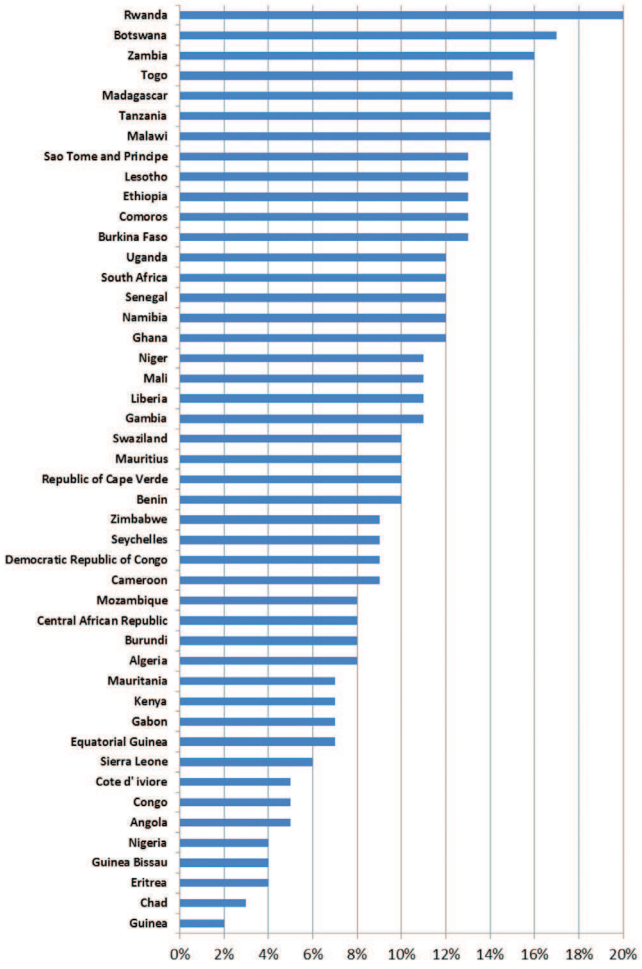


Figure 13. Allocations to Health as Percentage of National Budgets in African Countries

[96] UNITAID is a global health initiative that was established in 2006 by the governments of Brazil, Chile, France, Norway and the United Kingdom. It provides sustainable funding to tackle inefficiencies in markets for medicines, diagnostics and prevention for HIV/AIDS, malaria and tuberculosis in developing countries.

5.3. DOMESTIC FINANCING OF MATERNAL, NEWBORN, AND CHILD HEALTH

At the 15th Session of the Ordinary AU Assembly, many African leaders made high-level, political commitments to improve the health of women and children. During this session, 40 member states also launched CARMMA and many agreed to remove health facility user fees for women and children. Recently, Benin, Burkina Faso, Chad, Congo, Mali, Sierra Leone, and Liberia removed user fees for maternal and child health services. Despite these developments, more domestic financing, country ownership, and commitments are need to adequately fund health programs. For example, currently, just 12 out of Africa's 54 countries finance between 50 percent and 100 percent of their expanded programmes on immunization.[97]

[97] 2012 Africa Child Survival Scorecard by Africa Public Health. Info (now Afri-Dev.Info) and Africa Coalition on Maternal, Newborn and Child Health.

6. Recommendations to Scale Up Low-Cost, High-Impact Maternal, Newborn, and Child Health Interventions in Africa

6.1. POLITICAL WILL/ INVESTMENT

- Develop a mechanism to implement and monitor all political commitments

6.2. NUTRITION

- Invest in child nutrition programmes and put in place a cross-sectoral policy to ensure that processed and packaged food items are fortified with essential micro-nutrients and vitamins
- Prioritize food and nutrition security as the real engine of equitable and sustainable economic growth
- Increase budget allocations and cross-sectoral planning and action to ensure adequate nutrition
- Establish a high-level political championship mechanism on nutrition at the AU to boost continental efforts to improve nutrition development and security in Africa
- Improve nutrition of women during pregnancy and lactation

6.3. IMMUNIZATION

- Improve immunization programmes within the context of health systems strengthening to:
  - ensure effective and sustainable introduction of new vaccines and prioritized technologies as part of a package of integrated, cost-effective health interventions and
  - expand and improve ambition, effort, and advocacy for a 'fully immunized child'
- Put in place adequate and sustainable domestic financing mechanisms for national immunization systems
- Strengthen the management, analysis, interpretation, use, and exchange of immunization-related data and information
- Integrate immunization services with other MNCH and sexual and reproductive health interventions to maximize program synergies and sustain health benefits to more vulnerable populations
- Increase community demand for and access to immunizations through behavior change communication, social mobilization activities, vaccination campaigns, and increased routine immunization services
- Increase vaccination coverage and decrease the number of unimmunized children through strategies and programmes that are integrated into national health plans, designed to strengthen health systems, and are tailored to overcome geographic, income, and gender-related barriers to immunization
- Improve and strengthen vaccine and injection safety, as well as vaccine cold chain management systems

6.4. MATERNAL HEALTH AND FAMILY PLANNING

- Develop country and regional mechanisms to monitor progress in fulfilling MNCH commitments and financing maternal health and family planning programmes
- Identify country-level gaps in reducing maternal mortality and develop evidence-based interventions to address these gaps
- Strengthen and expand programmes to accelerate universal access to family planning services
- Ensure availability, at all times, of essential MNCH interventions at the facility level
- Increase the numbers of SBAs, especially midwives, to ensure availability of and universal access to quality emergency obstetric and newborn care services
- Introduce maternal death audits at facility and community levels.
- Prioritize the education of girls and young women and establish an environment that enables them to complete secondary school
- Uphold the *African Charter on Rights and Welfare of the Child*[98] and abolish underage marriage, which contributes greatly to maternal mortality and morbidity among girls

6.5. HEALTH SYSTEM STRENGTHENING

- Strengthen human resources for health to ensure safe delivery in emergency obstetric and newborn care facilities including trained obstetricians, anesthetists, and other essential cadres
- Ensure the availability of essential medicines and equipment for safe labour and delivery, including oxytocin and misoprostol to reduce bleeding, magnesium sulfate and its antidote to treat eclampsia, and blood transfusion equipment.

[98] The *African Charter on the Rights and Welfare of the Child* was adopted by the African Union (formerly the Organization of African Unity) and entered in 1999. The Charter is a comprehensive instrument that sets out rights and defines universal principles and norms for the status of children. *The African Charter on the Rights and Welfare of the Child* covers the whole spectrum of civil, political, economic, social, and cultural rights.

Bibliography

Africa Public Health Information Service & Africa MNCH Coalition. "2012 Africa Child Survival Scorecard–Highlighting Malnutrition, Unsafe Water, Lack of Sanitation, Immunisation & PMTCT." Lagos: Africa Public Health Information Service, 2012. http://gapps.org/docs/2012_Africa_Child_Survival_Scorecard-GlobalChild_Survival_Summit.pdf (accessed July 19, 2013).

African Institue for Development Policy. "Drivers of Progress in Increasing Contraceptive Use in sub-Saharan Africa: Case Studies from Eastern and Southern Africa," *AFIDEP Research Brief.* Nairobi, (March 2013): 8. http://www.afidep.org/images/downloads/drivers%20-%20research%20brief2.pdf (accessed July 19, 2013).

African Union (AU). "Maputo Plan of Action 5 Year Review." AU: May 2010 http://www.au.int/pages/carmma/documents/maputo-plan-action-5-year-review (accessed July 19, 2013).

Africa, Health, Human and Social Development Information Service (Afri-Dev.Info) and Africa Coalition on Maternal Newborn & Child Health. "2013 Africa Scorecard on Multi Faceted Violence Against Young Girls & Women – Highlighting Forced 'Marriage' of Girl Children;Wife Beating; Female Genital Mutilation." Lagos: Afri-Dev.Info, 2013. http://www.africamnchcoalition.net/sites/default/files/2013%20Africa%20Violence%20Against%20Women%20Multifaceted%20Scorecard-Figures%20%26%20Numbers%20Only.pdf (accessed July 19, 2013).

Bahwere, Paluku, Ellen Piwoz, Marthias C. Joshua, Kate Sadler, Caroline H. Grobler-Tanner, Saul Guerrero, and Steve Collins. "Uptake of HIV testing and outcomes within a Community-based Therapeutic Care (CTC) programme to treat severe acute malnutrition in Malawi: a descriptive study," *BMC Infectious Diseases* 8, no. 1 (2008): 106. doi:10.1186/1471-2334-8-106.

Barros, Aluísio JD, Carine Ronsmans, Henrik Axelson, Edilberto Loaiza, Andréa D. Bertoldi, Giovanny VA França, Jennifer Bryce, J. Boerma, and Cesar G. Victora. "Equity in maternal, newborn, and child health interventions in Countdown to 2015: a retrospective review of survey data from 54 countries," *The Lancet* 379, no. 9822 (2012): 1225-1233. doi:10.1016/S0140-6736(12)60113-5.

Benson, Janie, Mathew Okoh, Keris KrennHrubec, Maribel A. Mañibo Lazzarino, and Heidi Bart Johnston. "Public hospital costs of treatment of abortion complications in Nigeria," *International Journal of Gynecology & Obstetrics* 118, no. Suppl 2 (2012): 134-140. doi: 10.1016/S0020-7292(12)60012-5.

Bernstein, Stan, and Charlotte Juul Hansen. "Public choices, private decisions: sexual and reproductive health and the Millennium Development Goals." *Public choices, private decisions: sexual and reproductive health and the Millennium Development Goals* (2006). http://www.unmillenniumproject.org/documents/MP_Sexual_Health_screen-final.pdf (accessed July 19, 2013).

Black, Robert E., Lindsay H. Allen, Zulfiqar A. Bhutta, Laura E. Caulfield, Mercedes De Onis, Majid Ezzati, Colin Mathers, and Juan Rivera. "Maternal and child undernutrition: global and regional exposures and health consequences," *The Lancet* 371, no. 9608 (January 2008): 243-240. doi:10.1016/S0140-6736(07)61690-0

Bongaarts, John, and John Casterline. "Fertility Transition: Is sub-Saharan Africa Different?" Population and Development Review 38, no. S1 (2013): 153-168 http://www.popcouncil.org/pdfs/PDRSupplements/Vol38_PopPublicPolicy/Bongaarts_pp153-168.pdf (accessed July 19, 2013).

Borghi, J. O., Tim Ensor, Aparnaa Somanathan, Craig Lissner, and Anne Mills. "Mobilising financial resources for maternal health." *The Lancet* 368, no. 9545 (2006): 1457-65. http://www.ncbi.nlm.nih.gov/pubmed/17055948 (accessed July 19, 2013).

Canning, David, and T. Paul Schultz. "The economic consequences of reproductive health and family planning." The Lancet (2012). doi:10.1016/S0140-6736(12)60827-7.

Center for Reproductive Rights . "In Harm's Way: The Impact of Kenya's Restrictive Abortion Law." New York: Center for Reproductive Rights, 2010. http://reproductiverights.org/sites/crr.civicactions.net/files/documents/InHarmsWay_2010.pdf (accessed July 19, 2013).

Cleland, John, Agustin Conde-Agudelo, Herbert Peterson, John Ross, and Amy Tsui. "Contraception and health." *The Lancet* 380, no. 9837 (2012): 149 -156. doi:10.1016/S0140-6736(12)60609-6.

Bibliography

Cohen, Rona, Linda Lange, and Wendy Slusser. "A description of a male-focused breastfeeding promotion corporate lactation program." Journal of Human Lactation 18, no. 1 (February 2002): 61-5. http://www.ncbi.nlm.nih.gov/pubmed/11845740 (accessed July 19, 2013)

Danzhen You, Jin Rou New and Tessa Wardlaw. "Level and Trends in Child Mortality." UNICEF, 2012. http://www.who.int/maternal_child_adolescent/documents/levels_trends_child_mortality_2012/en/ (accessed July 19, 2013)

Dayaratna, Varuni, William Winfrey, William McGreevey, Karen Hardee, Janet Smith, Elizabeth Mumford, Jeffrey Sine, and Ruth Berg. "Reproductive health interventions: Which ones work and what do they cost?" The POLICY Project, 2000. http://www.policyproject.com/pubs/occasional/op-05.pdf (accessed July 19, 2013)

Edmond, Karen M., Charles Zandoh, Maria A. Quigley, Seeba Amenga-Etego, Seth Owusu-Agyei, and Betty R. Kirkwood. "Delayed Breastfeeding Initiation Increases Risk of Neonatal Mortality." *Pediatrics* 117, no. 3 (March 2006): 380 - 386. doi: 10.1542/peds.2005-1496

Family Planning 2020. "Family Planning 2020." 2013. http://www.londonfamilyplanningsummit.co.uk/index.php (accessed July 2013, 19).

Ferlay, J., H. R. Shin, F. Bray, D. Forman, C. Mathers, and D. M. Parkin. "GLOBOCAN 2008 v2.0, Cancer Incidence and Mortality Worldwide." *IARC Cancer Base* No. 10 [Internet]. Lyon, France: International Agency for Research on Cancer." (2013).

Graham, Wendy J., Jacqueline S. Bell, and Colin HW Bullough. "Can skilled attendance at delivery reduce maternal mortality in developing countries." *Safe Motherhood Strategies: A Review of the evidence* 17 (2001): 97-130. http://www.vzhupea.clearfund.org/files/DWDA%202009/Interventions/Maternal%20Mortality/SafeMotherhoodStrategies.pdf#page=105 (accessed July 2013, 19).

Gill, Kirrin, Rohini Pande, and Anju Malhotra. "Women deliver for development." *The Lancet* 370, no. 9595 (2007): 1347-1357. doi:10.1016/S0140-6736(07)61577-3

Guttmacher Institute Media Centre – "New study finds little progress in meeting demand for contraception in the developing world." June 19, 2012. http://www.guttmacher.org/media/nr/2012/06/19/index.html (accessed July 19, 2013).

Jain, Anrudh K., Ross, Jorn A. "Fertility differences among developing countries: Are they still related to family planning program efforts and social settings?" *International Perspectives on Sexual and Reproductive* Health 38, no. 1 (2012): 15-22 doi:10.1363/3801512

Joseph Foumbi; Ronnie Lovich; UNICEF. "Role of men in the lives of children. A study of how improving knowledge about men in families helps strengthen programming for children and women." New York: UNICEF, Dec. 1997.

Habicht, Jean-Pierre. "Malnutrition kills directly, not indirectly." *The Lancet* 371, no. 9626 (2008): 1749 - 1750. doi:10.1016/S0140-6736(08)60755-2

Huffman, Sandra L., Elizabeth R. Zehner, and Cesar Victora. "Can improvements in breast-feeding practices reduce neonatal mortality in developing countries?" *Midwifery,* 2001: 80-92. http://www.ncbi.nlm.nih.gov/pubmed/11399129 (accessed July 19, 2013).

IPPF, GNP+. Fulfilling Fatherhood: Experiences from HIV Positive Fathers. International Planned Parenthood Federation (IPPF) and The Global Network of People Living with HIV/AIDS (GNP+), 2005.

Joint United Nations Programme on HIV/AIDS. *AIDS Scorecards: UNAIDS Report on the Global AIDS Epidemic 2010*. UNAIDS, 2010. http://www.unaids.org/globalreport/global_report.htm (accessed July 19, 2013).

Killam, William P., Bushimbwa C. Tambatamba, Namwinga Chintu, Dwight Rouse, Elizabeth Stringer, Maximillian Bweupe, Yong Yu, and Jeffrey SA Stringer. "Antiretroviral therapy in antenatal care to increase treatment initiation in HIV-infected pregnant women: a stepped-wedge evaluation." *Aids* 24, no. 1 (2010): 85-91. doi:10.1097/QAD.0b013e32833298be.

Ki-Moon, Ban. "Global strategy for women's and children's health." *Switzerland: World Health Organization* (2010). " http://www.everywomaneverychild.org/. n.d. http://www.who.int/pmnch/topics/maternal/20100914_gswch_en.pdf (accessed July 19, 2013).

Lyra, Jorge. Fatherhood in adolescence: the construction

of political agenda. Brasilia: United Nations; International Labour Organization (ILO); Joint United Nations Programmes on HIV/AIDS (UNAIDS); United Nations Development Programme (UNDP); 2003, 8.

Maternity Worldwide. "The Three Delays Model." July 19, 2013. http://www.maternityworldwide.org/what-we-do/three-delays-model/ (accessed July 19, 2013).

Mullany, Luke C., Joanne Katz, Yue M. Li, Subarna K. Khatry, Steven C. LeClerq, Gary L. Darmstadt, and James M. Tielsch. "Breast-Feeding Patterns, Time to Initiation, and Mortality Risk among Newborns in Southern Nepal." *The Journal of Nutrition*, 2008: 599-603. http://www.ncbi.nlm.nih.gov/pubmed/18287373 (accessed July 19, 2013).

Peacock, Dean, and Mbuyiselo Botha. "The new gender platforms and fatherhood." *Edited by Linda Richter and Robert Morrell* (2006): 281. http://www.engagingmen.net/files/resources/2010/RaymondBrandes/New_Gender_Platform_and_Fatherhood.pdf (accessed July 19, 2013)

Pelletier, David L., Edward A. Frongillo Jr, and Jean-Pierre Habicht. "Epidemiologic Evidence for a Potentiating Effect of Malnutrition on Child Mortality." *American Journal of Public Health* 83, no. 8 (1993): 1130 - 1133. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1695164/pdf/amjph00532-0060.pdf (accessed July 19, 2013)

Population Action International. Family Planning. n.d. http://populationaction.org/topics/family-planning/ (accessed July 16, 2013).

Rasch, Vibeke, Fortunata Yambesi, and Siriel Massawe. "Post-abortion care and voluntary HIV counselling and testing--an example of integrating HIV prevention into reproductive health services." *Tropical Medicine & International Health* 11, no. 5 (2006): 697-704. http://www.ncbi.nlm.nih.gov/pubmed/16640622 (accessed July 19, 2013).

Rasch, Vibeke, Siriel Massawe, Fortunata Yambesi, and Staffan Bergstrom. "Acceptance of contraceptives among women who had an unsafe abortion in Dar es Salaam." *Tropical Medicine & International Health* 9, no. 3 (2004): 399-405. http://www.ncbi.nlm.nih.gov/pubmed/14996370 (accessed July 19, 2013).

Sharan, Mona, Saifuddin Ahmed, John May, and Agnes Soucat. "Family planning trends in sub-Saharan Africa: Progress, prospects, and lessons learned." *Baltimore, Maryland, USA: Johns Hopkins Bloomberg School of Public Health* (2010). http://siteresources.worldbank.org/AFRICAEXT/Resources/258643-1271798012256/YAC_chpt_25.pdf (accessed July 19, 2013).

Singh, Susheela, Jacqueline Darroch, Lori Ashford, and Michael Vlassoff. "Adding it up: the costs and benefits of investing in family planning and maternal and newborn health." *Guttmacher Institute*, 2010. http://www.unfpa.org/webdav/site/global/shared/documents/publications/2009/adding_it_up_report.pdf (accessed July 19, 2013).

Singh, Susheela, and Jacqueline E. Darroch. "Adding it up: Costs and benefits of contraceptive services – Estimates for 2012." Guttmacher Institute and UNFPA (2012). http://www.guttmacher.org/pubs/AIU-2012-estimates.pdf (accessed July 19, 2013).

Sonfield, Adam, Kinsey Hasstedt, Megan L. Kavanaugh, and Ragnar Anderson. The Social and Economic Benefits of Women's Ability To Determine Whether and When to Have Children. New York: *Guttmacher Institiute, March* (2013). http://www.guttmacher.org/pubs/social-economic-benefits.pdf (accessed July 19, 2013).

Raju, Saraswati, and Leonard Ann. "Men as supportive partners in reproductive health: Moving from rhetoric to reality." Population Council, South and East Asia Regional Office, 2000. http://www.popcouncil.org/pdfs/menaspartners.pdf (accessed July 19, 2013).

The 1,000 Days partnership. "Why 1,000 Days." July 19, 2013. http://www.thousanddays.org/about/ (accessed July 19, 2013).

The Population Council. "Men's Involvement in Partner's Pregnancy Yields Health Benefits." *India Male Involvement OR Summary,* June 2004, 45 ed.: 2. http://www.popcouncil.org/pdfs/frontiers/orsummaries/ors45.pdf (accessed July 19, 2013).

Population Council. "Antenatal Couples Counseling is Feasible but Challenging." South Africa Male Involvement OR Summary, February 2006: 48 ed.: 2. http://www.popcouncil.org/pdfs/frontiers/orsummaries/ors58.pdf (accessed July 19, 2013).

Bibliography

United Nations Population Fund (UNFPA). "Maternal Deaths Halved in 20 Years, but Faster Progress Needed." May 16, 2012. http://www.unfpa.org/public/home/news/pid/10730 (accessed July 17, 2013).

United Nations Children's Fund (UNICEF) and World Health Organization (WHO). "Progress Towards Global Immunization Goals - 2011: Summary presentation of key indicators." August 2012. http://www.who.int/immunization_monitoring/data/SlidesGlobalImmunization.pdf (accessed July 16, 2013).

United Nations Development Programme (UNDP). "Human Development Report 2003: Millennium Development Goals: A compact among nations to end human poverty." New York: UNDP, 2003. http://hdr.undp.org/en/media/hdr03_complete.pdf (accessed July 19, 2013).

United Nations Children's Fund (UNICEF). "Committing to child survival: a promise renewed." *Progress Report* 2012 (2012). http://www.unicef.org/videoaudio/PDFs/APR_Progress_Report_2012_final.pdf (accessed July 16, 2013).

United Nations Children's Fund (UNICEF). "Pneumonia and diarrhea: Tackling the deadliest disease for the world's poorest children". UNICEF, June 2012. http://www.unicef.org/media/files/UNICEF_P_D_complete_0604.pdf. (accessed July 16, 2013)

United Nations Children's Fund (UNICEF). State of the World's Children 2001. http://www.unicef.org/sowc01/panels/panel4.htm (accessed July 16, 2013).

United Nations Children's Fund (UNICEF). State of the World's Children 2009: Maternal and Newborn health. http://www.unicef.org/cotedivoire/SOWC_2009_.pdf (accessed July 19, 2013).

United Nations Children's Fund (UNICEF). Tracking Progress on Child and Maternal Nutrition: A Survival and Development Priority. UNICEF, 2009. http://www.unicef.org/publications/files/Tracking_Progress_on_Child_and_Maternal_Nutrition_EN_110309.pdf (accessed July 19, 2013).

United Nations Children's Fund (UNICEF). Fact of the Week. November 2, 2009. http://www.unicef.org/factoftheweek/index_51596.html (accessed July 19, 2013).

Van der Merwe, Karin, Matthew F. Chersich, Karl Technau, Yvonne Umurungi, Francesca Conradie, and Ashraf Coovadia. "Integration of antiretroviral treatment within antenatal care in Gauteng Province, South Africa." JAIDS Journal of Acquired Immune Deficiency Syndromes 43, no. 5 (2006): 577-581. http://www.ncbi.nlm.nih.gov/pubmed/17031321 (accessed July 19, 2013).

Van Look, Paul FA, and Jane C. Cottingham. "Unsafe abortion: an avoidable tragedy." *Best Practice & Research Clinical Obstetrics & Gynecology* 16, no. 2 (2002): 205-220. http://www.ncbi.nlm.nih.gov/pubmed/12041963 (accessed July 19, 2013).

Vernon, Ricardo. "Meeting the family planning needs of postpartum women." *Studies in Family Planning* 40, no. 3 (2009): 235-245. doi:10.1111/j.1728-4465.2009.00206.x

Vlassoff, Michael, Tamara Fetters, Solomon Kumbi, and Susheela Singh. "The health system cost of post abortion care in Ethiopia." *International Journal of Gynecology & Obstetrics* 118 (2012): S127-S133. doi:10.1016/S0020-7292(12)60011-3.

Wall, L. Lewis. "Obstetric vesicovaginal fistula as an international public-health problem." The Lancet 368, no. 9542 (2006): 1201-1209. http://www.ncbi.nlm.nih.gov/pubmed/17011947 (accessed July 19, 2013).

WHO, UNICEF. "Countdown to 2015: Maternal, Newborn and Child Survival—building a future for women and children, the 2012 Report." (2012). http://www.countdown2015mnch.org/documents/2012Report/2012-Complete.pdf (accessed July 19, 2013).

World Health Organization (WHO). "Integrated Health Services - What and Why?" Technical Brief. Vol. 1. *World Health Organization* (WHO), 2008. http://www.who.int/healthsystems/service_delivery_techbrief1.pdf (accessed July 19, 2013).

World Health Organization (WHO). "Making pregnancy safer: the critical role of the skilled attendant - A joint statement by WHO, ICM and FIGO." Geneva: WHO, 2004. http://whqlibdoc.who.int/publications/2004/9241591692.pdf (accessed July 19, 2013).

Bibliography

World Health Organization (WHO). Media Centre - Maternal Mortality. May 2012. http://www.who.int/mediacentre/factsheets/fs348/en/index.html (accessed July 19, 2013).

World Health Organization (WHO). PMNCH Fact Sheet: RMNCH Continuum of care. September 2011. http://www.who.int/pmnch/about/continuum_of_care/en/ (accessed July 16, 2013).

World Health Organization (WHO). "Safe Abortion: Technical and Policy Guidance for Health Systems." Geneva: WHO, 2012. http://apps.who.int/iris/bitstream/10665/70914/1/9789241548434_eng.pdf (accessed July 19, 2013).

World Health Organization (WHO). Sexual Reproductive Health - Maternal and perinatal health - Causes of maternal death. 07 19, 2013. http://www.who.int/reproductivehealth/topics/maternal_perinatal/epidemiology/en/ (accessed 07 19, 2013)

United Nations Population Fund (UNFPA). "Trends in maternal mortality: 1990 to 2010 – WHO UNICEF, UNFPA and The World Bank estimates." Geneva: WHO, 2012. http://www.unfpa.org/webdav/site/global/shared/documents/publications/2012/Trends_in_maternal_mortality_A4-1.pdf

Yang, H. M., M. Mao, and C. M. Wan. "Vitamin A for treating measles in children." Cochrane Database System Rev 4 (2005). DOI: 10.1002/14651858.CD001479.pub3

AUC DRAFTING TEAM

- Dr Ademola Olajide: Head of Division, Health, Nutrition and Population
- Mr. Robert Ndieka: M&E Expert
- Mr. Kenneth Oliko: Consultant