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Working Paper No. 11

Accelerating Progress On Maternal Health In Africa: Lessons From Emerging Policy And Institutional Innovations

By Ayodele Odusola

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Abstract

This paper examines emerging innovations on maternal health in Africa. Achieving maternal health goal still remains a daunting challenge in Africa. As at 2010, 57.4 percent of global maternal death happened in Africa and one of the ten countries that have achieved this goal is in the continent. Lifetime risk of maternal death remains highest in sub-Saharan Africa (1 in 39 chances relative to 1 in 1,700 in East Asia). Factors inhibiting rapid progress include prevalence of HIV/AIDS, weak governance of the health sector, inadequate funding, poor health infrastructure, insufficient number of skilled health workers especially in rural areas, weak referral systems, poor enforcement of regulatory standards as well as religious and cultural barriers such as low women's autonomy on maternal issues and early marriage.

Three groups of innovative ideas have been institutionalized in African countries to improve maternal health: policy, institutional and experimental innovations. Key policy innovations making a difference include the launch of CARMMA and the associated political commitment at national and regional levels; the enhancement of resource allocation; the presence of performance based systems; the decentralization of health management systems; the provision of free maternal services; and the changing role of TBAs. Three institutional innovations that have substantially contributed to progress are: the strengthening of health facilities and personnel; the establishment of maternal homes in countries like Eritrea, Malawi, Lesotho and Mozambique; and the existence of community-based health insurance systems. The private sector and NGOs are also shaping the landscape of maternal health through innovative experimentation, especially through the provision of transport to reach remote locations, the creation of demand for maternal services and the facilitation of access through mobile phones. Deepening and scaling up these innovations are vital to accelerated progress.

Keywords:

Maternal death; maternal mortality; innovations; lifetime risk of maternal death; perinatal death, and traditional birth attendant.

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1. Introduction

Given the seriousness of maternal death in Africa and its synergistic effects on other MDGs, mothers' health has elevated itself from a sectoral issue to become a development one. With about 99 percent of maternal deaths occurring in the developing world, 57.4 percent happening in Africa and only 11 countries¹ accounting for about 65 percent of maternal deaths worldwide, MMR does not only represent the risk associated with pregnancy. In addition to serving as a barometer to measure health system strength, access to quality care and coverage of effective interventions to prevent maternal death, it is also an important indicator for gauging social and economic conditions of women and girls.²

Recent evidence has shown that several African countries have achieved spectacular progress in reducing maternal deaths between 2000 and 2010. In 2010, for instance, the number of women dying in pregnancy and childbirth-related issues was declining. In sub-Saharan Africa, it fell from 850 deaths per 100,000 live births in 1990 to 500 deaths per 100,000 live births in 2010—representing a 41 percent decline. Twenty-nine countries in Africa³ achieved more than a 40 percent improvement. In particular, Equatorial Guinea has achieved more than an 80 percent reduction, while Eritrea and Egypt are very close to the target of 75 percent. Yet challenges abound. Sub-Saharan Africa accounted for 56 percent of the global burden of deaths in 2010.⁴ Countries such as Botswana, Cameroon, Chad, the Congo, Lesotho, Somalia, South Africa, Swaziland and Zimbabwe retrogressed between 1990 and 2010. Lifetime risk of maternal death⁵ is highest in Africa. In many sub-Saharan African countries, one in at least 25 pregnant women is at risk of maternal death (e.g., Chad, Niger, Sierra Leone, Liberia and Guinea Bissau) as opposed to one in 25,000 pregnant women in such countries as Estonia, Greece and Singapore (see WHO, et al., 2012). Yet there is ample evidence that maternal death in Africa is preventable and the target for 2015 is achievable in the medium term if appropriate and sustainable innovations are put in place to facilitate continuous access of the poor to quality and affordable maternal health services.⁶

The role of innovation has also featured very prominently in the global strategy for maternal health.⁷ The concept of innovation refers to problem-solving initiatives. These are solutions that demonstrate the ability to significantly impact health service access.⁸ It is also in relation to the processes and approaches to unearthing innovations and engaging unconventional players for better maternal health results. In spite to the importance given to it, not much has been done to draw relevant lessons from past and existing innovative ideas across many African countries.

This paper provides an overview of past and emerging innovations on maternal health in Africa with a view to drawing lessons that could inform policy options for acceleration actions. It aims at using existing practices on the continent to create a new service paradigm that guarantees access to affordable and quality maternal health services for the poor. To this end, it reviews and draws lessons from catalytic and broad-based innovations in Africa that could accelerate improved maternal health outcomes. It examines

1 These countries are located Africa and Asia. The six countries from Africa are the Democratic Republic of the Congo, Ethiopia, Kenya, Nigeria, the Sudan and the United Republic of Tanzania, while the five from Asia are Afghanistan, Bangladesh, India, Indonesia and Pakistan. See Maternal Health Task Force, 2013: www.maternalhealthtaskforce.org/discover/maps/high-burden-countries (Accessed February 2013).

2 From a development perspective, maternal death is a barometer for measuring women's and girls' access to education, equality and political commitment to health and development (e.g., see HMN, UNICEF and WHO, 2011, 2011, p. 11).

3 This is not homogenous across sub-regions. For instance, almost all of the 5 countries from North Africa and 24 of the 49 countries from sub-Saharan Africa have achieved this.

4 Although some countries such as Ethiopia and Nigeria have made appreciable progress, they still account for a large proportion of maternal death globally. For instance, in spite of the fact that Nigeria was able to reduce maternal death by 41 percent during this period, it still accounted for 14 percent of global maternal deaths in 2010 (WHO et al., 2012).

5 This is the probability that a 15-year-old female will die eventually from a maternal cause (WHO, UNICEF, UNFPA and World Bank, 2012).

6 See, for instance, IWG (2012), AUC and UNFPA (2013), and AUC, ECA, AfDB and UNDP (2010).

7 See UNSG (2010) and IWG (2012).

8 Concerned Worldwide (2013): "Innovation for maternal, newborn & child health".

how experimental, policy and institutional innovations could lead to rapid reduction in maternal mortality in Africa. It aims at documenting good practices in innovative maternal health service interventions in Africa with a view to providing opportunity to share lessons and experience to policy makers and practitioners.

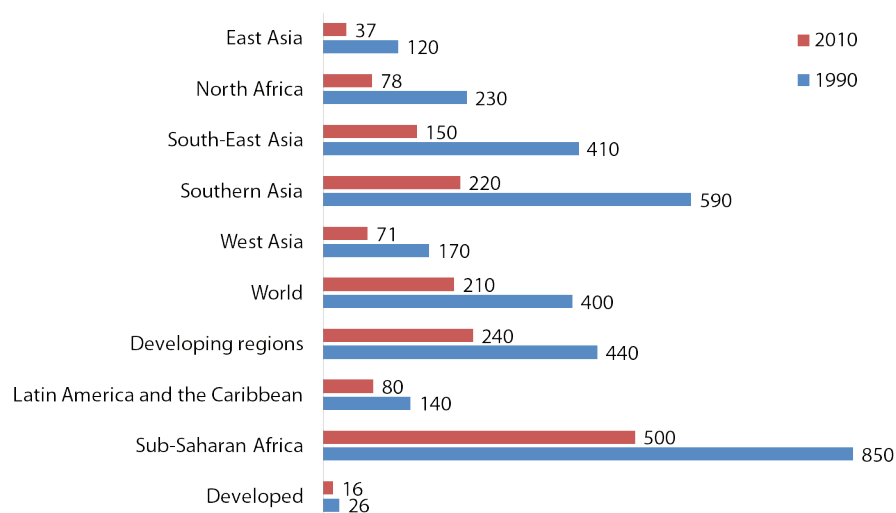
To achieve this, this paper is divided into five parts. Following the introduction, section two provides an overview of maternal health situation in Africa. Section three focuses on innovations driving progress on the continent, while section four draws relevant lessons for policy options. Section five concludes the paper.

2. Maternal health situation in Africa

The overarching goal of MDG 5 is to improve maternal health by reducing the MMR by 75 percent between 1990 and 2015. How has Africa performed on this? Between 1990 and 2010, the world experienced a 47.0 percent reduction in MMR, i.e., from 400 per 100,000 live births in 1990 to 210 per 100,000 live births in 2010. This translates to a reduction in maternal deaths from 543,000 to 287,000 during the period (WHO et al., 2012).

This performance is not homogenous across the regions. Rather, there are substantial disparities in maternal mortality across developing regions. In 2010, sub-Saharan Africa accounted for about 56 percent of global maternal deaths, while southern Asia contributed about 29 percent. They both accounted for 85 percent of global maternal deaths, while the rest of the regions are responsible for the balance in 2010. Figure 1 shows each region's performance between 1990 and 2010, while Figure 2 reveals how far each region is from the 75 percent target as of 2010. Sub-Saharan Africa's MMR is about 14 times greater than that of Eastern Asian region and about 31 times greater than that of developed regions. East Asia is leading the regional performance chart on MMR reduction. This region seems to be on track to achieve this target. Since 1990, on annual average, East Asia has been reducing MMR by 5.7 percent relative to the global target of 5.5 percent. Sub-Saharan Africa managed to reduce it by an annual average of 2.6 percent and North Africa is very close to the target (5.3 percent).

Figure 1: MMR is declining and no MDG region has met the target of 75 percent reduction by 2010, but East Asia is on track



Source: Compiled by the author from WHO, UNICEF, UNFPA and World Bank, (2012): *Trends in Maternal mortality: 1990–2010* (p. 26).

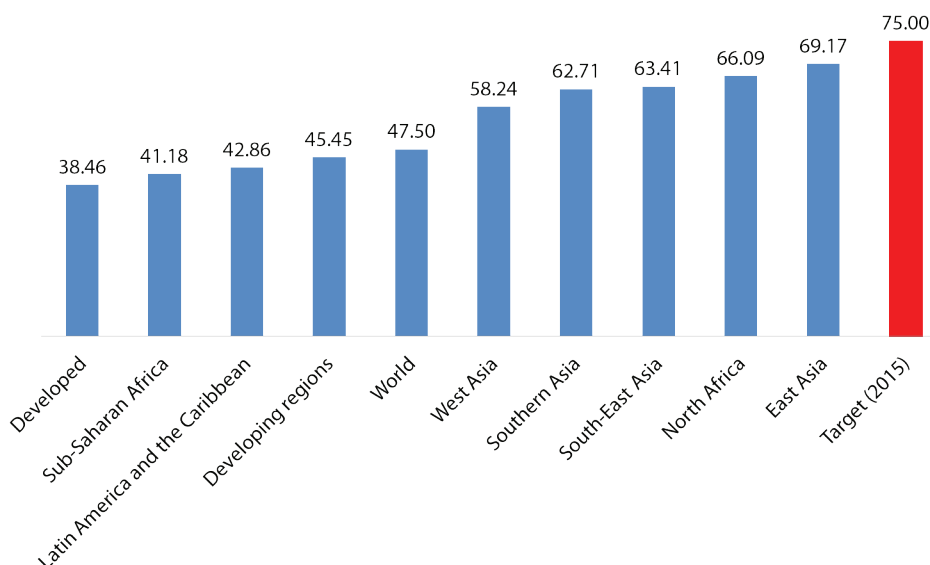
Maternal health situation in Africa

Sub-Saharan Africa succeeded in reducing MMR by 41 percent and North Africa by 66 percent during the period of analysis (Figure 2). However, in absolute terms, Africa still accounted for a substantial proportion of global maternal deaths in 2010 (74.4 percent) relative to 1990 (36.9 percent). The high proportion of youth population relative to other regions is an important factor. Another factor is the high fertility rates in many African countries as compared with low levels in other regions.

Lifetime risk of maternal death remains highest in sub-Saharan Africa. A woman in sub-Saharan Africa faces a 1-in-39 chance during her lifetime of dying of pregnancy-related causes relative to 1 in 1,700 (East Asia), 1 in 520 (Latin America and the Caribbean), 1 in 150 (developing regions), and 1 in 3,800 (developed regions) (WHO, UNICEF, UNFPA and World Bank, 2012).

The disparity across countries could be more revealing. In many sub-Saharan African countries, 1 in at least 25 pregnant women is at a risk of maternal death (e.g., Chad, Niger, Sierra Leone, Liberia and Guinea Bissau), while Mauritius (1:1000) and Tunisia (1:860) are the best in Africa. All North African countries had a lifetime risk of maternal death of over 1 in 400. However, these are far below the performance of 1 in 25,000 pregnant women in such countries as Estonia, Greece and Singapore (see WHO, et al., 2012).

Figure 2: Progress toward the 75 percent target is unequal across regions, 1990–2010



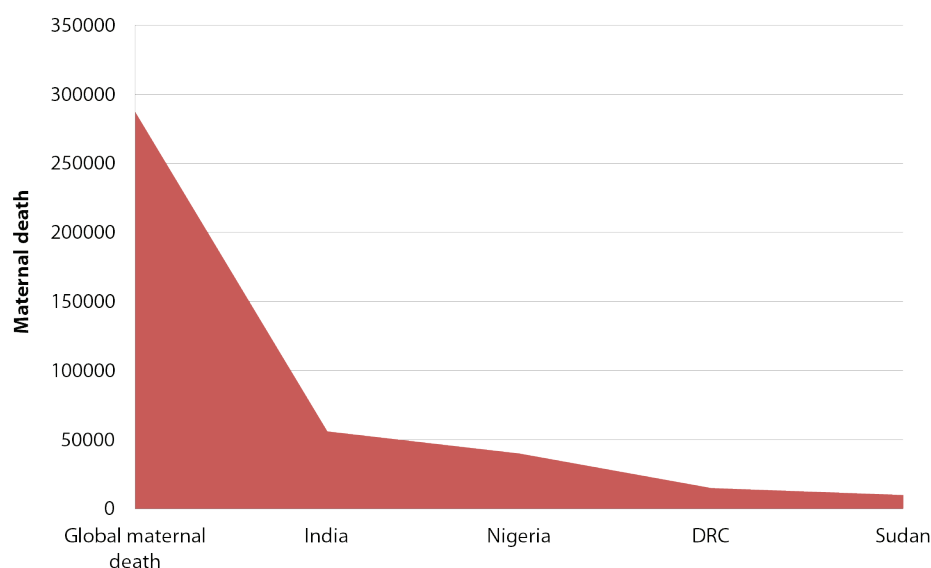
Source: Computed by the author from WHO et al., 2012.

How do the countries perform? It is important to note that only four countries accounted for 42.1 percent of global maternal deaths in 2012 (Figure 3). In fact, India and Nigeria alone account for 31 percent of maternal deaths: India at 19 percent (56,000) and Nigeria at 14 percent (40,000). The two countries' population size makes their contributions globally important. With stepped-up efforts, India is on the path to reducing maternal death by 75 percent by 2015—approximately 9 percentage points below the target. Unless accelerated actions are put in place, the rates of annual decline in Nigeria, the Democratic Republic of the Congo and the Sudan are too low to reach the target by 2015.

In spite of the challenges on maternal health in Africa, the emerging results are cheering. Of the ten countries that have reached the target as of 2010, one is in Africa (Equatorial Guinea—81 percent).⁹ Based on the annual rate of progress, two countries are on track

⁹ Other countries are Estonia (95 percent), Maldives (93 percent), Belarus (88 percent), Romania (84 percent), Bhutan (82 percent), the Islamic Republic of Iran (81 percent), Lithuania (78 percent), Nepal (78) and Viet Nam (76 percent) (WHO et al., 2012).

Figure 3: India, Nigeria, Dem. Rep. of the Congo and the Sudan accounted for 42.1 percent of global maternal deaths in 2010



Source: Computed by the author from WHO et al., 2012.

to reach the target by 2015 — Eritrea and Egypt. These three countries grew faster than the expected annual growth of 5.5 percent — Equatorial Guinea (7.9 percent), Eritrea (6.3 percent) and Egypt (6.0 percent). The adoption of maternal waiting homes in Eritrea, for instance, contributed to rapid progress. Twenty-nine other African countries are also making progress with an annual decline rate of between 2.0 percent and 5.5 percent during the period (see Table 1). Among countries making progress, some (including Angola, Ethiopia, Madagascar, Morocco and Rwanda) have made appreciable progress — a decline of more than 60 percent between 1990 and 2012. Ten countries made insufficient progress, declining at less than 2.0 percent per annum. Another 10 experienced setbacks — i.e., experienced increased MMR during the period — especially between 1990 and 2005. Six of these countries are from southern Africa, mostly as a result of HIV/AIDS.

The strong political commitment emanating from the launching and implementation of the Campaign on Accelerated Reduction of Maternal Mortality in Africa (CARMMA); enhanced resource allocations; enhanced partnership among public, private and voluntary organizations; and strengthened health systems and implementation of innovative interventions all made this success possible. For instance, 92 percent of Member States in Africa, as of December 2012, had initiated activities that fostered political commitment; 37 countries launched CARMMA; 24 Member States had scaled up budgetary allocations to the health sector; and 50 nations had strengthened their health systems (AUC and UNFPA, 2013). CARMMA's advocacy of family planning has also enhanced improvement in maternal health.¹⁰ The proportion of averted maternal deaths in most African countries is substantial. It was as high as 50 percent of maternal deaths in 14 countries, including Mauritius, Morocco, Tunisia and South Africa. However, due to low contraceptive use in Chad, Sierra Leone, Angola, the Sudan and Mali, the proportion of averted maternal deaths was less than 20 percent and was even as low as 7 percent in Chad (Figure 4).

¹⁰ No fewer than 22 countries accelerated contraceptive use. These include Benin, Burundi, Cameroon, Chad, the Central African Republic, the Congo, the Democratic Republic of the Congo, Djibouti, the Gambia, Ghana, Guinea-Bissau, Lesotho, Madagascar, Mauritania, Mozambique, the Niger, Sao Tome and Principe, Senegal, South Sudan, the United Republic of Tanzania, Uganda, and Zambia (AUC and UNFPA, 2013).

Table 1 provides additional information on countries' categorization by low, moderate, high and very high MMR. Of a total of 40 countries that had high MMR¹¹ in 2010, 35 are in Africa. The 10 highest are all from Africa, with Chad and Somalia having 1,000 and above maternal deaths per 100,000 live births: Chad (1,100) and Somalia (1,000).¹² Yet nine of the countries categorized as low-MMR nations¹³ are also from Africa, including Mauritius (60), Sao Tome and Principe (70) and Cape Verde (79).

Several factors explain the prevalence of MMR in Africa. As pointed out in WHO et al (2012), of the 19,000 maternal deaths due to HIV/AIDS globally, 17,000 (89 percent) are in sub-Saharan Africa. In fact, 10.4 percent of maternal deaths have been attributed to AIDS in the region. WHO et al. (2012) points out that, without HIV/AIDS, the MMR for sub-Saharan Africa would have been 450 maternal deaths per 100,000 live births instead of 500 in 2010. A recent *Lancet* publication on six community-based studies in eastern and southern Africa with HIV serological surveillance and verbal-autopsy reporting provides some illuminating conclusions. HIV-infected pregnant or post-partum women had mortality around eight times higher than their HIV-uninfected counterparts. Based on this estimate, the authors predict that roughly 24.00 percent of deaths in pregnant or post-partum women are attributable to HIV in sub-Saharan Africa (Zaba et al, 2013). Fourteen of the 18 countries having 20 percent or more of maternal deaths attributed to HIV are from sub-Saharan Africa.¹⁴ For instance, the setback is mostly in southern African countries such as Botswana, Lesotho, Namibia, South Africa and Swaziland that have been linked to the HIV epidemic. Since 2005, however, most of these countries have been experiencing a declining MMR due to more access to antiretroviral therapy. Yet African governments and related health stakeholders should ensure that safe motherhood programmes pay special attention to the needs of HIV-infected pregnant or post-partum women.

Limited progress on governance of the health sector as well as inadequate funding of the health interventions accounted for the high incidence of MMR in several countries. For instance, in spite of the prevalence of MMR in Chad and the Congo, budgetary allocation to the health sector is still very low — 3.0 percent (AUC and UNFPA, 2013). In addition to problems arising from poor governance and, to an extent, inadequate funding of the health sector in several African countries, progress on maternal health is also hampered by poor health infrastructure, high turnover of health service providers, an insufficient number of skilled health workers (particularly in rural and disadvantaged communities), and weak referral systems. Religious and cultural barriers (including low women's autonomy on maternal issues and early marriages) are also common across African countries — with almost no exceptions.¹⁵

Private-sector providers are important actors in health service delivery in Africa. In many African countries, however, the sector faces several challenges. Having realized the limitation of the public health system to meet maternal care needs in Africa, a substantial proportion of the African population seeks care from private providers. To many illiterate and poor people, access to trained medical doctors is very limited. In many communities, any medical and paramedical service providers (e.g., nurses, midwives, medical laboratory specialists, pharmacists, etc.) are regarded as doctors. They provide products and services that they have not been trained to deliver. Most of them lack information concerning the current best prevention and treatment practices on maternal health. Weak enforcement of regulatory standards further complicates this practice. In addition, the linkage between the private and public sectors is also very weak, which militates against the free flow of relevant medical and vital statistics that are critical for maternal health services.

11 This is defined as countries with MMR ≥ 300 maternal deaths per 100,000 live births.

12 As revealed in WHO et al. (2012), the other eight highest MMR countries are: Sierra Leone (890), the Central African Republic (890), Burundi (800), Guinea-Bissau (790), Liberia (770), the Sudan (730), Cameroon (690) and Nigeria (630).

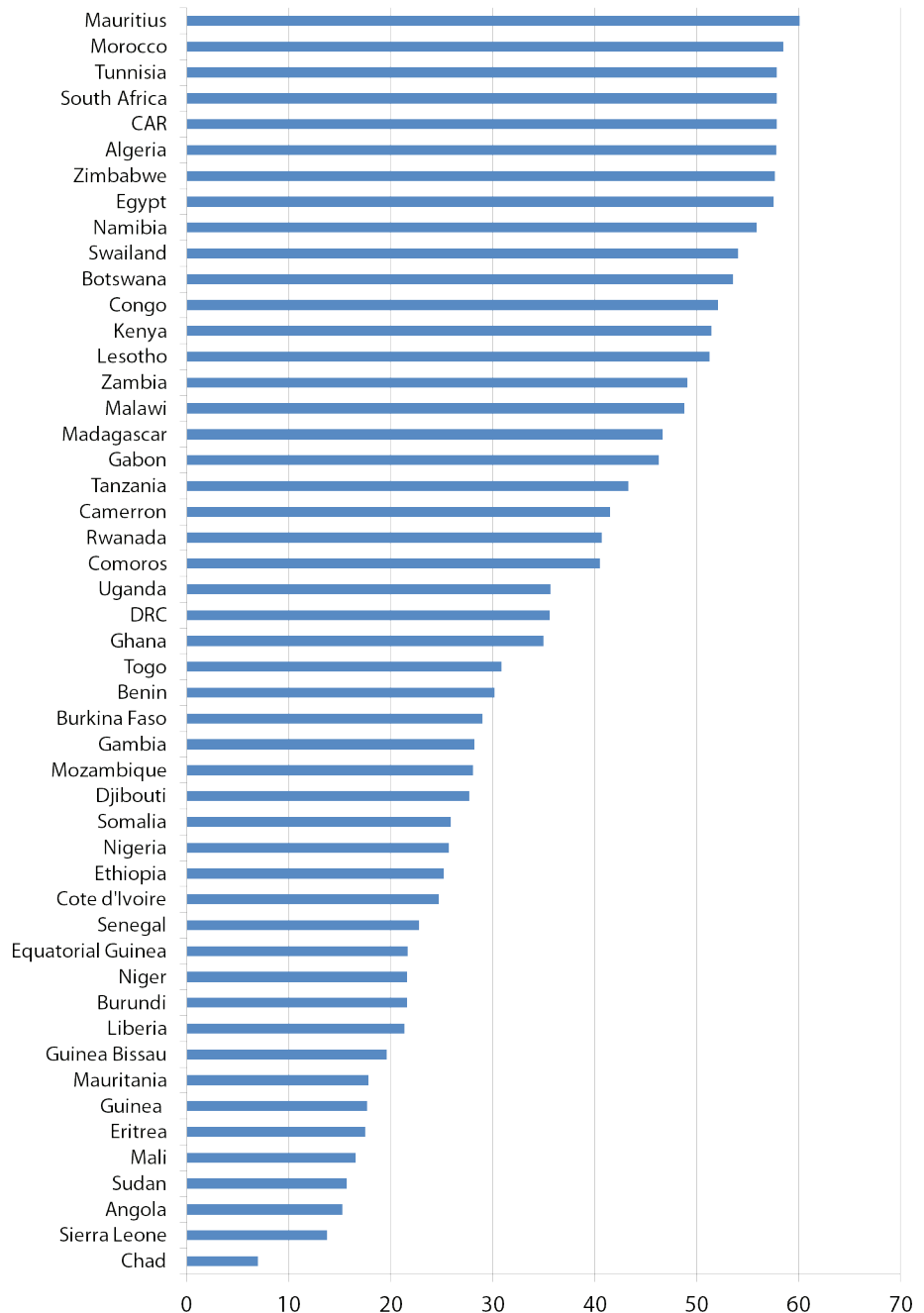
13 This is defined as ≤ 100 maternal deaths per 100,000 live births.

14 The 18 countries and the proportion of AIDS-related indirect maternal deaths are Swaziland (67.3), South Africa (59.9), Namibia (59.4), Botswana (56.4), Lesotho (41.5), Zimbabwe (38.8), Ukraine (31.7), Zambia (30.7), Malawi (29.3), Mozambique (26.8), the Bahamas (26), Gabon (25.8), Uganda (25), Thailand (21.9), Equatorial Guinea (21.8), Kenya (20.2), the Russian Federation (20.2) and Djibouti (20) (WHO et al., 2012).

15 The role of cultural and attitudinal barriers in limiting maternal services use in many African countries has been stressed in the literature, e.g., Pearson and Shoo (2005), Fotso et al. (2009), AUC (2009) and Lewycka et al. (2010).

Other bottlenecks range from limited geographic access to inadequate incentives to competent health workers to work in remote areas.¹⁶ However, private health care is always not regulated and quality of service is sometimes poor. Limited geographic access is another factor—a high proportion of maternal deaths occur in remote regions where pregnant women live far away from health system infrastructure, products and services. Mobilizing skilled and dedicated health workers to work in remote areas and retaining staff remain daunting challenges in Africa. Household financial barriers (including high out-of-pocket expenses), limited physical access, staffing and management problems, and weak incentives for providers to be efficient and responsive are also serious impediments. Others include the marginalization of African traditional medicine in national health systems; inadequate community involvement and empowerment; inadequate involvement of the private sector and NGOs in the planning and management of health sector strategies; the paucity and inadequate use of available evidence and information to guide implementation; ineffective coordination and harmonization of partners' activities; and high fertility rates.¹⁷

Figure 4: Contraceptive use is averting maternal deaths in most African countries (Proportion of maternal deaths averted due to contraceptive use)



Source: Computed by the author from Ahmed et al., 2012.

16 For detailed articulation of these impediments, see Lule et al. (2005), Eichler (2006) and IWG (2012).

17 Evidence from the World Bank (2010:25) shows that 42 of the 59 developing countries in the world with a high MMR (220 or more) and high total fertility rate (TFR) of 3 or more are in sub-Saharan Africa, whereas only four African countries (Algeria, Libya, Mauritius and Tunisia) of 59 countries belong to the low MMR and low TFR groups. See AU (2007) and World Bank (2010) for detailed information on the health system challenges.

Table 1: Progress towards improving maternal health in Africa is promising

Country	Progress towards target				Level of MMR as at 2010			
	Achieved/ On track (annual decline > 5.5%)	Making progress (annual decline between 2% and 5.5%)	Insufficient progress (annual decline < 2%)	No progress (rising MMR)	Low MMR (MMR between 20 and 100)	Moderate (MMR between 100 and 300)	High MMR (MMR > 300)	Very High MMR (MMR > 1,000)
Equatorial Guinea	Achieved					✓		
Eritrea	✓					✓		
Egypt	✓				✓			
Libya		✓			✓			
Algeria		✓			✓			
Mauritius			✓		✓			
Angola		✓					✓	
Benin		✓					✓	
Burkina Faso		✓					✓	
Cape Verde		✓			✓			
Comoros		✓				✓		
Cote d'Ivoire		✓					✓	
Dem. Rep. of Congo		✓					✓	
Ethiopia		✓					✓	
Gambia		✓					✓	
Ghana		✓					✓	
Guinea		✓					✓	
Liberia		✓					✓	
Madagascar		✓				✓		
Malawi		✓					✓	
Mali		✓					✓	
Mauritania		✓					✓	
Morocco		✓			✓			
Mozambique		✓					✓	
Niger		✓					✓	
Nigeria		✓					✓	

Source: Computed and compiled by the author from WHO et al., 2012.

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Country	Progress towards target				Level of MMR as at 2010			
	Achieved/ On track (annual decline > 5.5%)	Making progress (annual decline between 2% and 5.5%)	Insufficient progress (annual decline < 2%)	No progress (rising MMR)	Low MMR (MMR between 20 and 100)	Moderate (MMR between 100 and 300)	High MMR (MMR > 300)	Very High MMR (MMR > 1,000)
Rwanda		✓					✓	
Sao Tome and Principe		✓			✓			
Senegal		✓					✓	
Togo		✓					✓	
Tunisia		✓			✓			
Uganda		✓					✓	
Tanzania		✓					✓	
Burundi			✓				✓	
Central African Rep.			✓				✓	
Djibouti			✓			✓		
Gabon			✓			✓		
Guinea-Bissau			✓				✓	
Kenya			✓				✓	
Sierra Leone			✓				✓	
Sudan			✓				✓	
Zambia			✓				✓	
Botswana				✓	✓			
Cameroon				✓			✓	
Chad				✓				✓
Congo				✓			✓	
Lesotho				✓			✓	
Namibia				✓		✓		
Somalia				✓				✓
South Africa				✓		✓		
Swaziland				✓			✓	
Zimbabwe				✓			✓	

Source: Computed and compiled by the author from WHO et al., 2012.

3. Policy, institutional and programmatic innovations driving progress on maternal health

Maternal health is an important measure of health system strength through access to quality care and coverage of effective interventions to prevent maternal deaths. Reducing maternal deaths requires innovative policies, practices and experimental interventions that increase access to quality maternal care. Technological advancement is also shaping the landscape of maternal health across developing world. This section examines policy, institutional and programmatic innovations that have worked in Africa.

3.1 Policy innovations

Sector-wide Approach (SWAp): Over the past decade, many African countries have initiated strategies for effective collaboration, partnership and coordination such as the Sector-wide Approach (SWAp) in the health sector, with particular focus on maternal and neonatal health and family planning. The institutionalization of SWAp has facilitated synergy across government agencies and between development partners, eased coordination and reduced the transaction cost of having many actors doing different things in the health sector. Countries like Malawi benefited substantially from this strategic action in terms of 1) being able to mobilize 85 percent of resources needed to implement the six-year SWAp work programme on basic health, 2) allowing a pooled funding mechanism for the health sector, and 3) establishing standards and uniform processes.

Developing and implementing health-sector strategy: African leaders, through the African Union, have also contributed to policy innovations on maternal health at the continental level. The 2006 Maputo Plan of Action (2007–2010)¹⁸ and a continental policy framework on sexual and reproductive health and rights called for strengthening the reproductive health system, enhanced resource allocation to the health sector, and promoted universal access to basic health services including reproductive health services through long-term infrastructure, system-strengthening and capacity-building. The African Health Strategy 2007–2015 harmonized various segments of health strategies into a holistic strategic document for Africa (AU, 2007).

Strong national and regional political commitment: As a sign of strong political commitment from African leaders to what is considered to be a continental emergency, the African Union Ministers of Health launched, in May 2009 at the continental, regional and national levels, the Campaign on Accelerated Maternal Mortality in Africa (CARMMA), captioned, “Africa Cares: No Woman Should Die While Giving Life”. In order to rededicate their commitment to maternal health, the programme was re-launched by the heads of state and governance on 27 January 2013.¹⁹ The innovative approach of CARMMA, focusing on top political and community leadership, has ensured government ownership of the campaign, enhanced advocacy and boosted resource allocation to maternal health. The top-level political launching of CARMMA has also been accompanied with the development of National Road Maps; the strengthening of reproductive and family planning services; the very strong commitments as reflected in strengthened health systems; and the institutionalization of monitoring and evaluation mechanisms (AUC and UNFPA, 2013).

Enhanced resource allocation: The heavy burden of maternal mortality has posed serious concerns to policy makers and other stakeholders and has elicited a series of innovative actions from African leaders. The Abuja 2001 Declaration in which African presidents and heads of state committed themselves to increase budgetary allocation to health sector to 15 percent of total budget was a novel effort towards fast-tracking progress on MDG 5. In 2010, six countries (Rwanda, Botswana, the Niger, Malawi, Zambia,

18 The Plan of Action drew on earlier declarations: The Gaborone Declaration on the Roadmap Towards Universal Access to Prevention, Treatment and Care for STI/HIV/AIDS of March 2006, The Brazzaville Commitment on Scaling Up Towards Universal Access to STI/HIV/AIDS Services of 2006, and the Abuja Call for Accelerated Action Towards Access to STI/HIV/AIDS, TB and Malaria Services in Africa of 2006 (AUC, 2006).

19 As of December 2012, the campaign had been launched in 37 countries (8 in 2009, 18 in 2010, 10 in 2011 and 1 in 2012). Starting with the national launch on 3 August 2009 in Mozambique, some of the other countries that launched the initiative include: Angola, Botswana, Chad, the Central African Republic, the Democratic Republic of the Congo, Ethiopia, Ghana, Malawi, Mozambique, Nigeria, Rwanda, Senegal, the United Republic of Tanzania, Togo and Tunisia (ECA, AU, AfDB and UNDP, 2010; AUC, 2013; AU and UNFPA, 2013).

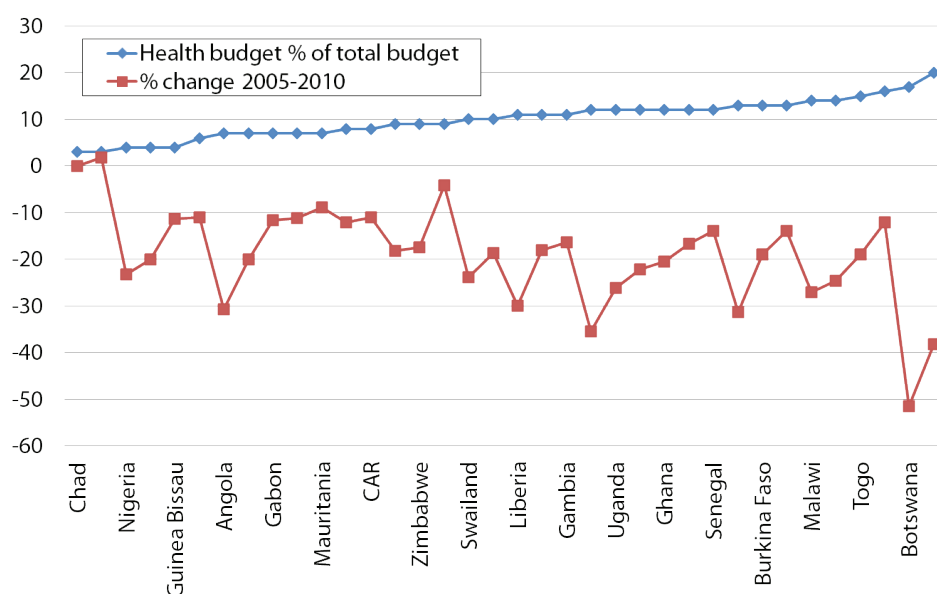
Policy, institutional and programmatic innovations

and Burkina Faso) met the commitment, while many others were on track to meet the commitment.²⁰ Most of the countries that succeeded from raising their health budgets as a proportion of total budget to at least 10 percent were able to reduce maternal mortality by about 20 percent between 2005 and 2010 (Figure 5). Rwanda, Botswana, Namibia and Ethiopia are good examples of the close linkage between resource allocation and appreciable progress in maternal health. It is important to underscore the need to complement enhanced resource allocation with improved governance of the health sector, including public procurement, health regulatory standards and operational effectiveness.

Performance-based incentives: The introduction of a performance-based funding mechanism in Rwanda, within one year, boosted deliveries in health centres by 107 percent; deliveries referred to hospitals also rose by 221 percent. A similar trend is also observed for family planning patronage (Eichler, 2006). The participation of one community in the Muhororo district of Rwanda in organizing an emergency transport team for pregnant women offered subsidized services of about 50 percent for transport to clinics (Pearson and Shoo, 2005). In the Gambia, local communities initiated a funding mechanism for supporting pregnant women's transport to health centres. It is an interest-free loan given to pregnant women to visit a gynecologist for complicated pregnancy checks and deliveries (AUC and UNFPA, 2013).

For better service delivery, the South African Ministry of Health has entered into a Negotiated Service Delivery Agreement (NSDA) with other ministries responsible for the social determinants of health and with all nine provincial Members of Executive Committees (MECs) for Health to improve health outcomes. To be able to reach difficult and remote areas, the introduction of District Clinical Specialist Teams has also provided opportunities to improve leadership and accountability where it really matters (DoH, 2011).

Figure 5: Enhanced resource allocation to health sector is yielding positive results



Source: Compiled and computed by authors from: (i) health budget (AUC and UNFPA, 2013) and (ii) data for MMR (2005 and 2010) (WHO et al., 2012).

²⁰ In addition to these six countries, 16 others have their share of the health sector budget between 10 percent and 15 percent, 22 countries between 5 percent and 10 percent, 8 countries are less than 5 percent while there is no data for Somalia. See Africa Public Health Info (2010) for details. Also available at www.who.int/pmnch/media/press_materials/pr/2011/health_financing_scorecard.pdf (Accessed February 2013)

Decentralized health management system: It is essential to bring maternal health very close to the beneficiaries in order to improve geographical access, efficiency and accountability. Given this realization, several countries have initiated decentralized governance in the health sector, covering political, administrative and financial dimensions. The imperative of a decentralized health management system is captured in Kaseje (2006:17):

The worsening indices of health status in Africa demand a fresh look at the way health systems are organized and how these systems address the complex causal pathways that lie beyond the influence of the formal health sector. This recognition suggests that effective action will only be possible when the formal system providers work in partnership with other stakeholders, particularly the community, as joint problem solvers through regular, evidence-based dialogue. This approach requires decentralized, inclusive democratic structures in the health system with effective representation of the needy households to ensure that their voices are heard.

Good examples of countries that have embarked on a decentralization process include Burkina Faso, Ethiopia, Ghana, Malawi and Nigeria. Key features of the decentralization are the devolution model that transfers powers, functions, responsibilities and resources to local-level authorities. These countries, among others, have made appreciable progress, especially in such areas as greater financial autonomy and decision-making at the local or district level, greater local authority control of deployment of health workers within districts, and better district implementation plans. However, the absence of a strong regulatory and policy framework for a decentralized health system, numerous regulatory conflicts in several countries, weak capacity to coordinate and manage a devolved health system, and fragmented management systems regarding staff management, are among the factors impeding the effective devolution of the health management system in Africa.²¹

Maternal death notification and audit: An important component of health system reinforcement involves making the reporting of maternal death mandatory. In Uganda, the institutionalization of the Maternal and Perinatal Death Review made the notification of maternal death compulsory within 24 hours. A similar situation was also noticed in Botswana, the Gambia, Malawi, Niger and Zimbabwe, where maternal death notification and audit have been institutionalized. Kenya also launched the Maternal Death Surveillance and Response initiative, while maternal death review tools were established in district hospitals in Namibia. This has been contributing to improved vital statistics in these countries.

Free maternal service: At least 19 countries provided free services across the various stages of maternal care.²² In some countries, family services are free; in others, antenatal care is free and deliveries and post-natal services are offered. Recent Médecins sans Frontières (MSF) interventions in Burundi allowing for a shift from supposedly 'affordable' low flat-fee rates to a new policy ensuring free care for pregnant women and children under five resulted in a doubling of the number of deliveries in MSF-targeted health centres (ODI and UNCEF, 2009).

The changing role of Traditional Birth Attendants (TBA): The strengths and weaknesses of TBAs have been appreciated across African countries. In some countries such as Ethiopia, Eritrea and Malawi, TBAs are no longer allowed to attend to deliveries. For instance, to ensure effective monitoring in Malawi, village heads are empowered to sanction erring TBAs in their constituencies. In several other countries, their roles are complementary to those of trained medical personnel. To promote complementarity between TBAs and patronage of maternal waiting homes, TBAs were trained in life-saving skills and in how to recognize early danger signs. They also encouraged pregnant mothers to deliver in waiting homes and also accompanied them. Malawi and Eritrea are good examples of this. However, this does not happen without a cost. Appropriate incentives were given to TBAs for supporting deliveries in district clinics and maternal waiting homes.

21 For more information on specific countries, see Kaseje, 2006; Wal et al., 2007; Ergo et al., 2010; Watsiko, 2010; Coutolenc, 2012.

22 Some of these countries are Benin, Burkina Faso, Cameroon, Chad, the Comoros, the Congo, Ghana, Guinea, Lesotho, Liberia, Malawi, Mali, Niger, Nigeria, Sierra Leone, South Sudan, the Sudan, the United Republic of Tanzania and Zimbabwe.

3.2 Institutional innovations

Strengthening the health system: Many African governments have embarked on strengthening their health systems in order to improve maternal and neonatal outcomes. This covers the deepening of infrastructure, manpower and institutions.²³ Over the past decade, the training of health workers, a major bottleneck in health service delivery, has been given prominence in at least 20 countries, including Botswana, Burkina Faso, Burundi, Eritrea, the Gambia, Mauritania, Malawi, Nigeria, the United Republic of Tanzania and Uganda. Niger also initiated massive recruitment of health service providers (including 536 doctors) and the purchase of equipment and materials, including ambulances. With the support of development partners, Uganda operates a bursary scheme for the training of midwives, while Botswana, the Gambia, Sierra Leone and Malawi focus on broad-based training programmes for doctors, midwives and nurses. Countries like Ghana, Swaziland, Malawi and Nigeria also embarked on the expansion and rehabilitation of primary health centres and other health facilities. Cameroon started providing obstetric kits to pregnant women at fixed prices—an initiative that increased monthly deliveries by 70 percent—while Zimbabwe scaled up support for 18 schools of midwives and the training of over 200 midwives on EmONC (AUC and UNFPA, 2013). Nigeria, for instance, used its debt-relief gains in 2009 alone to upgrade, rehabilitate and equip 1,003 PHCs; to establish the Midwives Service Scheme; to procure 50,000 midwives kits; to purchase 49 ambulances; and to rehabilitate barrack clinics in 12 towns, to mention a few improvements (Nigeria MDG Office, 2010).

To bridge the gap between the formal health system and communities, many countries have established social or community health workers or health surveillance assistants to provide ancillary services to pregnant women. Through the support of development partners, the Malawian Government designated health surveillance assistants to offer antenatal, postnatal and referral visits to pregnant women's homes in seven districts starting from 2007. This was scaled up nationally in 2010 by the Ministry of Health.²⁴

Incentive structure: To be able to attract, retain, redeploy and train health workers, a total review of the incentive structures were put in place in Malawi. This included giving a 52 percent salary enhancement and establishing improved housing and in-service incentives. Other incentives included expanding training facilities by 50 percent, attracting unemployed and retired health workers to work in hard to reach localities, and using expatriate workers where necessary (Ergo et al., 2010).

Maternal waiting homes²⁵: It is a life-changing innovation. Evidence from Ruiz (2010) provides some illumination on maternal waiting homes in Mozambique. Health facilities with waiting homes recorded higher deliveries than those without. It also shows institutional deliveries coverage decreases as the distance to the health facilities increases. For instance, the coverage of health facilities with waiting homes decreases from 77 percent (within a radius of eight kilometres) to 34 percent (for a radius of 14 kilometres). This is one of the factors that contributed to the reduction in MMR from 630 maternal deaths per 100,000 live births in 2005 to 490 in 2010.

Limited access to life-saving skill to manage obstetric care was a major bottleneck in Eritrea in the 1990s. Maternal waiting homes²⁶ were used as a strategy to address high maternal death in hard-to-reach locations. Women who have been pregnant for eight months or more and who live more than 10 kilometres from health facilities are eligible. Prior to the introduction of maternal waiting homes

23 No fewer than 21 countries gave prominence to health facility provision and rehabilitation, including Cameroon, Chad, the Central African Republic, the Congo, the Democratic Republic of the Congo, Djibouti, Guinea, Guinea-Bissau, Kenya, Liberia, Madagascar, Malawi, Mauritania, Mozambique, Niger, Rwanda, Senegal, South Sudan, the Sudan, the United Republic of Tanzania and Uganda (AUC and UNFPA, 2013).

24 See Ergo et al., 2010 for more information about the project.

25 A maternity waiting home is defined as a facility within easy reach of a hospital or health centre that provides antenatal care with skilled birth attendants and emergency obstetric care, mostly for women living in remote areas. Sometimes, such homes provide education about pregnancy, giving birth and infant care (see, for example, van Lonkhuijzen et al, 2009).

26 Health facilities with waiting homes had at least one ambulance ready for referral to higher-level health facilities during emergencies. Such homes also provide antenatal care, vaccination/immunization for mothers and their children, family planning and HIV/AIDS counseling. Mothers were provided food items worth US\$50 per pregnancy (Andemichael et al., 2010).

in 2006, there were 266 deliveries and five maternal deaths. This rose to an annual average of 415 deliveries in 2007 and 2008—a 56 percent improvement. Specifically, between May 2008 and April 2009, there were 473 deliveries without a single maternal death (Andemichael et al 2010). To ensure complementarity between TBAs and patronage of maternal waiting homes, TBAs were trained in life-saving skills and in how to recognize early danger signs. They also encouraged pregnant mothers to deliver in waiting homes and also accompanied them. This, to a large extent, contributed to the impressive progress made in maternal health: a 73 percent reduction between 1990 and 2010, which is approximately 2 percentage points below the target for 2015.

Some micro-evidence from Lesotho has also shown that living in remote areas may not be a serious barrier to accessing maternal health services. Partners In Health (PIH), in strong collaboration with the Ministry of Health and Social Welfare, has provided a successful model of how to integrate services into a comprehensive program for maternal health. This model provides comprehensive care of pregnant women from the community to the clinic level by having former traditional birth attendants serve as clinic-affiliated maternal health workers.²⁷ Performance-based incentives were given to these health workers to accompany pregnant women during antenatal care (ANC) visits and facility-based delivery under the supervision of a nurse-midwife. To overcome geographic barriers to delivering at the clinic, pregnant women living in remote areas with limited access to clinics are supported to stay at maternal waiting homes prior to their expected delivery dates. Through this initiative, the average number of first ANC visits increased from 20 to 31 per month. The number of deliveries at clinics also improved substantially. It rose from 46 deliveries in the year preceding the introduction of the programme to 178 in the first year and 216 in the second year. This is in addition to 49 women with complications who were transported to the district hospital and successfully delivered their babies—a total success involving no maternal deaths at all. This is one of the factors explaining the decline from 720 maternal deaths per 100,000 live births in 2005 to 620 in 2010.

To reduce the risk of maternal mortality in Mozambique, the government also undertook the construction and expansion of maternal waiting houses for pregnant women. As of 2009, this has led to 75 percent of Mozambique's 128 districts having these facilities very close to rural maternity wards. As an incentive, the government has also started to provide free food to pregnant women in the waiting houses, which has greatly improved patronage. However, the high investment and operating costs, as well as the cost of maintaining qualified health professionals, have become issues of concern for sustainability (UNDP/RBA, 2011).

3.3 Health insurance systems

Another institutional dimension to health management in Africa is the health insurance scheme. Health insurance, especially in rural areas, is improving access to and promoting the more effective use of affordable, high-quality medicine in Africa. Carapinha et al. (2011) review 33 health insurance programmes in Ghana, Kenya, Nigeria, the United Republic of Tanzania and Uganda and find that such projects benefit members through sharing the cost of treatment and medicine in all programmes. For enhanced benefits of this innovation, there is need to focus more on the quality and affordability of care and health outcomes arising from the health insurance scheme and to foster strong government commitment.

Mutual health organizations from western and central Africa have a higher probability of using hospital services than non-members and pay substantially less when they need care (Justting, 2003). Although such schemes have helped the poor to meet their basic health needs, the poorest of the poor remained excluded. Similarly, the Community-Based Health Insurance System (CBHIS) in Rwanda offers a good lesson for many African countries. The programme was given utmost priority by policy makers and was made an integral part of the country's health programme, coupled with strong administrative and political support for its expansion and functioning. Given the importance attached to it, CBHIS coverage was scaled up from just around 35 percent in 2006 to almost

²⁷ This programme was piloted in the Bobete health centre (located in the mountains of the Thaba-Tseka district) starting from May 2009. This health centre serves 71 villages, whose population totals about 25,000 people (including around 7,000 women of reproductive age). This district is known for its high prevalence of home delivery—57 percent as opposed to the national average of 40 percent. Between May and July 2009, 100 traditional birth attendants were trained as maternal health workers to provide maternal health-related assistance to pregnant women at the community level (see Satti et al., 2012). However, all is not rosy. There was initial resistance from traditional birth attendants, which was resolved through community intervention, and the training of the birth attendants in issues such as HIV, TB and malnutrition.

85 percent in 2008. Membership in CBHISs had the potential of increasing health care use by about 15 percent following an illness episode (Shimeles, 2010). Based on its simplicity, coverage and impact, this experiment has attracted substantial interest among African practitioners as an important model for health-sector financing and the delivery of basic health services, including maternal health.

3.4 Private-sector and NGO programmatic interventions

Addressing transport and physical access challenges: The private sector and NGOs are shifting the frontier of health service delivery to low-income groups in Africa. A serious bottleneck to accessing maternal health in Africa is the lack of transport to reach clinics, especially for people living in remote and harsh areas. Some groups have started to meet this need in several African countries. 'Riders for Health', for instance, has managed to overcome the various infrastructure barriers (transport and logistics) that often keep women and children from the care they need. 'Riders for Health' manages a sustainable transportation network for health workers throughout sub-Saharan Africa, including the Gambia, Kenya, Lesotho, Nigeria, Malawi and Zimbabwe. It manages vehicles on a reliable, predictable and cost-effective basis, supporting health-focused partners by working with local governments and nearby hospitals to arrange emergency transport for low-income patients. As pointed out by Rider for Health Kenya (2012):

[O]utreach health workers were able to reach, on average, nearly four times further on their motorcycles, up to 175 kilometres away. This means even the most isolated areas can be offered equal access to health care services.

Cross-subsidies whereby the affluent subsidize services of the low-income group by between 50 percent and 70 percent could also be explored to bring health services to the poor through the private sector.

Creating demand for maternal services: Changamka Micro Health in Kenya offers ample opportunity for deepening health services through the private-sector initiative. It provides products that allow low-income individuals to save money for doctor visits, medicine and other health needs. Its focus is on outpatient services, maternal health and e-vouchers for beneficiaries of safe motherhood, family planning and food programmes. Changamka MicroHealth partners work in the supply and demand sides of the health system in Kenya. From the supply side, it partners with technology platforms, insurance, mobile financing, distribution centres and a network of hospitals and clinics, thus leveraging existing private sector channels for health care delivery and identifying non-traditional opportunities to collaborate, such as with mobile phone operators. It partners with over 28 clinics and medical centres across Nairobi and vicinity, Kikuyu and Mombasa for outpatient services. On the demand side, Changamka's clients can save on a smartcard via mobile money systems (M-PESA) and make payments at designated providers (IWG, 2012).

3.5 Facilitating access through mobile phones

Integrating technology into health systems can empower users by giving them greater control over when and how they interact with a system that can be intimidating and difficult to navigate. Technology can thus create mechanisms for meeting community needs and expectations, providing a two-way channel in which mothers and caretakers are better informed and more engaged in the health of their families and in which health service delivery is strengthened through end-user feedback, etc.

The Safe Motherhood Programme (otherwise called, *Abiye* Programme) was introduced to address maternal health challenges in Ondo State, Nigeria. Prior to its establishment in 2009, Ondo State was rated as one of the most burdened states on maternal mortality in Nigeria. Before the pilot project launched in Ifedore Local Government, only 16 percent of pregnant women that registered with government facilities eventually delivered in those facilities. The *Abiye* programme aims at reducing child mortality by 50 percent, maternal mortality by 50 percent and increase facility utilization by 60 percent in 2011. At the point of registration on this programme, the pregnant woman is assigned a physician, a specially trained community health worker called the Health Ranger, to effectively monitor her. Twenty five (25) pregnant women are assigned to one health ranger who visits them regularly, detects high risks, carries out birth plan, embarks on complications readiness, as well as educates and advises on family planning.

The registered pregnant woman gets a mobile phone linked to a toll-free user group to ease communication with the physician. Any registered pregnant woman, is treated and looked after throughout the duration of her pregnancy and until about two months after putting to bed, with all cost born by the State Government. With the 'toll free' phone, the pregnant women have access to their physician 24 hours. Ambulance-on-tricycles are distributed and stationed in villages and communities to give first aid treatment to expectant mothers before they can access the Abiye Centre. Before the programme commenced in 2009, less than 100 pregnant women registered for antenatal clinics in public clinics. It rose to 346 in 2009, 2791 in 2010 and stood at 2427 in 2012, with no casualties (Akinmurele, 2012). Due to the success of the programme, it has been replicated in all the local governments in the State in January 2013. The involvement of community leaders (in mobilising and sensitising their people), NGOs (to provide materials to hospitals and sensitise people) and the community health volunteers contributed to success.

As a way of operationalizing CARMMA, a multimedia campaign involving an SMS-based initiative was launched in the United Republic of Tanzania in 2012. The initiative incorporates all safe motherhood health programmes, including "early and complete ANC attendance, malaria prevention, the prevention of mother-to-child transmission of HIV (PMTCT), individual birth planning and safe delivery." The programme is targeted at expectant women and mothers with babies up to 16 weeks old and encourage them to subscribe to maternal health services by sending 'mtoto' (child in Swahili) to the short code 15001 as an indication of registration at no cost. With this, registrants are sent free messages covering a range of safe pregnancy and early childcare services, including time-sensitive reminders for antenatal care visits, SP (sulphadoxine-pyrimethamine) doses for prevention of malaria and information on HIV testing, nutrition and birth planning.²⁸

Communication technology is transforming lives in Malawi. Community members have used the hotline for advice, for providing updates on their post-referral health status, and even for reporting suboptimal experiences at health centres. As an illustration, Balaka has some of the lowest maternal and child health indicators in all of Malawi. It is largely rural, with women and children often having to travel long distances across difficult terrain to access medical facilities. To overcome these physical barriers, information and communications technologies are connecting pregnant women, caretakers and children to health workers, thereby giving them immediate access to personalized health advice, tips and appointment reminders by phone.²⁹ There are four elements of this innovation: (i) the use of a toll-free case management hotline that connects clients to health experts at Balaka District Hospital; (ii) a service that delivers automated and personalized health tips straight to their phones by SMS or voice; (iii) a health centre booking system for antenatal care and postnatal visits in which patients have specific dates for follow-up care and reminders via SMS; and (iv) a community-based cadre of volunteers trained to create awareness within and share knowledge with the community.

Evidence from Alaffia partners in Togo has shown that simple prenatal care could reduce the chances of maternal deaths. Alaffia partners provide prenatal care and postnatal follow-ups for 400 women each year in the central part of Togo. In addition to facilitating access to prenatal care and to physicians or qualified midwives, each client receives a monthly check-up, prenatal vitamins, related medications and delivery care. Alaffia partners also follow up on the mothers and their babies for six months after birth. Since the programme's inception, there has not been a single casualty among either mothers or their babies.

3.6 Emerging lessons for policy actions

Integrating the formal health system into the community: Simple models of health system delivery could help improve maternal health outcomes in Africa. Several countries have shown that this is achievable. The transformation of traditional birth attendants into maternal health workers through effective training and supervision from health professionals has proved to be successful. The Paired Institutional Partnership (PIP) initiative in Lesotho is one of the various options. Dramatic improvements in the use of maternal

28 This programme is tagged 'Wazazi Nipendeni', which means 'Parents Love Me' in Swahili, and was launched in 2012 to encourage expectant women and their spouses to participate in programmes targeted at ensuring healthy pregnancy and safe delivery. For more information on this, see www.humanipo.com/news/2724/Tanzania-adopts-mobile-based-initiative-to-ease-maternal-mortality.

29 See www.innovationsformnch.org/finding-what-works/mnch-access-through-mobile-technology.

health services and facility-based delivery could be achieved through a combination of strengthening human resource capacity, providing incentives for facility-based delivery and transforming traditional birth attendants into community health workers. This works well when it is complemented with a performance-based incentive system,³⁰ when community health workers are effectively connected to clinics, and when infrastructure to support facility-based births is regularly improved (Satti et al., 2012). A health system that leverages local knowledge (as is the case in Eritrea and Malawi regarding the complementarity of TBAs), networks and people is more likely to reach a very large segment of the poor in terms of maternal and neonatal services in Africa. Public- and private-sector providers of maternal health need to establish and maintain relationships with the local community.

Incentivize potential losers: It is simplistic to imagine that things will always go smoothly when policy, institutional or programmatic innovations are being piloted. At the policy and institutional levels, actors benefiting from the extant inefficiency (public and private sectors) will resist because they do not want to lose rent-seeking activities. This is true in the case of programmatic intervention as well, especially when it has to do with transforming the role of TBAs or replacing their activities with trained birth attendants. The examples from Ethiopia, Eritrea, Mozambique and Lesotho are good to learn from. It is vital to give incentives to potential losers in order to productively engage them.

Strengthen budget management and the quality of health expenditure: Increasing resource allocation without a commensurate improvement in quality public resource management is not sustainable. It is important to strengthen budget management and to improve the overall quality of expenditure in the health sector through capacity-building in budget planning and execution. The need to strengthen planning, budgeting, revenue generation, and financial management and to improve the quality of expenditure is critical for progress. To ensure health-sector governance and accountability for results, it is important for countries to institutionalize the process of tracking and reporting aggregate resource flows into the health sector. This should take the form of total health expenditures as well as reproductive, maternal, newborn and child health expenditure per capita.³¹ Performance-based reporting that links inputs to key results (outputs and impacts) should be encouraged. It will also enable the measurement and monitoring of fiscal efforts of key stakeholders (including governments, development partners and households' burdens).³²

Strong collaboration among stakeholders is vital: No single actor can accelerate progress towards maternal health. Effective collaboration among governments, businesses, NGOs and development partners has proved to be necessary for rapid progress. A strategy of collaboration that draws on available local context, expertise and resources to provide health care to those in greatest need should be designed and implemented. The increasing role of the private sector in delivering health services in Africa provides opportunity to grow out of the public sector with a view to delivering health care in low-income settings. In countries like Ghana and Uganda, more than two thirds of all health care is delivered by private providers, while more than 40 percent of the people in the lowest income quintiles continue to seek care from the private sector in countries like Ethiopia, Kenya, Nigeria and Uganda. This underlines the need to devise a health care business model that serves the needs of the low-income group — possibly through public-private partnership and franchising. Cross-subsidies are another example of a business model for low-income groups. A good example is the Ziqitza Healthcare that applied cross-subsidies for ambulance services through differential pricing. For instance,

30 As indicated in Satti et al. (2012), the maternal health workers receive a performance-based salary on a monthly basis: 100 rand (US\$12) for attending monthly training and submitting monthly reports; 100 rand (US\$12) for accompanying women on a first antenatal visit; 50 rand (US\$6) for accompanying women for a subsequent antenatal visit; and 200 rand (US\$24) for accompanying women to the health centre for delivery. This is equivalent to a 300 rand monthly salary paid to community health workers employed by the Lesotho Ministry of Health and Social Welfare. Pregnant women were also given incentives. Those who attend all antenatal visits are tested for HIV, while those who deliver at the clinic receive "new baby starter packs", i.e., a package of clothing and hygiene items for babies.

31 As suggested by the National Health Accounts, financing sources should include government expenditures (national and subnational), out-of-pocket spending, and non-government spending (including external resources). For better accountability and to avoid resource virement, functional classification of total health expenditures on reproductive, maternal, newborn and child health, and others is critical.

32 This will allow, to a large extent, the better measurement of households' out-of-pocket thresholds (an indicator to determine barriers to access and use of services); the monitoring of accountability commitment among stakeholders (government, CSOs and development partners); and the continuous tracking of results.

patients visiting private hospital pay more than those visiting public clinics (IWG, 2012). It is important to balance affordability with sustainable pricing to reach the poor. The private sector working in low-income settings may face the challenge of financial solvency. The public and private sectors should work together to reach the poor.

Health innovations driven and implemented at the national level with limited involvement of the local people tend to have limited impact and less sustainability. Emerging evidence is that, for innovations in health systems to be sustainable, close collaboration and partnership with the subnational health systems are very crucial. Maternal health in Africa is a primary health care handled mostly at the local or provincial level. Such innovations should be fully institutionalized, operationalized and driven by local health workers and their institutions.

Take advantage of information communication and technology: Africa should take advantage of the widely spreading use of mobile phone to facilitate access to maternal health. The *Balaka* initiative in Malawi and the *Abiye* project in Nigeria have shown the potency of information technology in facilitating access to health services. These initiatives should be scaled up and replicated, if possible, for better access. A sustainable solution does not lie in technology and partnership among government, private sector, NGOs and development partners; the populace itself needs behavioural change. Education is the core driver changing behaviours in poor communities. There is no alternative to the continuous and well-targeted creation of awareness, community conversation and advocacy strategies.

Have a policy framework for scaling up innovative pilots: Africa has witnessed many successful pilot projects regarding maternal health at the government, private sector and development partner levels. Such innovative projects were allowed to wither away without an appropriate framework for scale-up. While scale is very difficult to reach and could take a very long time to materialize, government and other stakeholders should not shy away from this vital responsibility.

Vital registration should be an integral part of health management system: Data remains a critical challenge to progress in Africa. This is mostly due to the limited availability of timely and high-quality data. Countries should give priority to complete vital registration systems. This is preferred to other sources of information, as events occur rapidly and affect the entire population (HMN et al., 2011). This calls for steady investments in vital registration systems to ensure the correct reporting of births, maternal deaths and the causes of maternal deaths. This should be complemented with data collection through household surveys, continuous advancements in statistical modeling and analysis, and improvements in the reporting of maternal deaths from health care facilities. Equity consideration is among the elements on the emerging post-2015 development agenda for Africa. To capture various dimensions of inequality in health sector policies, strategies and programmes, it is important to disaggregate maternal health data by income groups (wealth quintiles), residential locations (rural-urban classification) and geographical spread.

4. Conclusion

The pervasiveness of maternal death in Africa over the past two decades has made improving maternal health a development challenge on the continent. Maternal health is an indicator to measure a health system's strength and access to quality care and is an important barometer for gauging social and economic conditions of women and girls. At last, there is good news regarding maternal health in Africa. In sub-Saharan Africa between 1990 and 2010, for instance, the number of women dying in pregnancy and childbirth-related issues declined by 41 percent. Equatorial Guinea is one of the 10 countries in the world that achieved this goal by 2010; Eritrea and Egypt are very close to the target; and 29 other countries are making appreciable progress. Yet the risk of maternal death is highest in Africa relative to other regions of the world, accounting for 57.4 percent of all global maternal deaths. The strong political commitment emanating from the launching and implementation of CARMMA and corresponding national efforts, enhanced resource allocations, improved partnership among public, private and voluntary organizations, strengthened health systems, and the implementation of innovative interventions have all made this success possible. Key bottlenecks include

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the prevalence of HIV/AIDS, weak governance of the health sector, the feeble capacity of the health system to reach remote areas, and the inadequate capacity to scale up innovative pilots to reach a larger population.

Several innovative ideas have been institutionalized in African countries to accelerate progress towards maternal health. These fall into three groups: policy, institutional and experimental innovations. Key policy innovations making a difference include the launch of CARMMA and the associated political commitment at national and regional levels; the enhancement of resource allocation; the presence of performance based systems; the decentralization of health management systems; the provision of free maternal services; and the changing role of TBAs. Three institutional innovations that have substantially contributed to progress are: the strengthening of health facilities and personnel; the establishment of maternal homes in countries like Eritrea, Malawi, Lesotho and Mozambique; and the existence of community-based health insurance systems. The private sector and NGOs are shaping the landscape of maternal health through innovative experimentation, especially through the provision of transport to reach remote locations, the creation of demand for maternal services and the facilitation of access through mobile phones.

To maximize the benefit of innovations, several issues require policy attention. First, rapid progress is possible where the formal health system is effectively integrated into the informal providers and the community. Examples from Eritrea, Rwanda and Malawi have proved this to be effective. Second, context matters. There should be an incentive system that productively engages potential losers in the delivery of maternal health services. The changing role of TBAs as delivery assistants in several countries is changing the landscape of maternal services in Africa. Third, while increased budgetary allocation is a necessary condition, efforts to strengthen budget management and the quality of health expenditure, along with effective governance of the health sector, are critical. The need to promote a strong linkage between inputs and outputs is important. Fourth, no single actor can achieve the goal unless there is very strong collaboration among stakeholders (especially government, the private sector, CSOs and development partners). Fifth, Africa needs to take advantage of information communication and technology to facilitate access to health systems among hard-to-reach communities. Finally, without adequate data, not much can be achieved. To this end, vital registration should be an integral part of any health management system.

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