

# Examining Barriers to Maternal Health Care in Kenya Using the Three-Delay Framework

Stuart Davidson I  
McMaster University, Hamilton, Canada

---

## Abstract

**Objective:** This paper examines the impact of multiple perceived and actual barriers on the demand and utilization of preventive and emergency maternal health care in Kenya. Results were used to formulate comprehensive health policy suggestions for future improvements in maternal health outcomes in Kenya.

**Method:** Gabrysch & Campbell's (2009) adapted version of Thaddeus & Maine's (1994) "three-delay" framework was used to analyze the impact of four barriers-to-care on women's decision to seek preventive or emergency maternal care in Kenya. These barriers include: (1) physical accessibility, (2) economic accessibility, (3) the perceived benefits and quality of care, and (4) sociocultural obstacles. Each barrier may delay care-seeking outcomes in three phases: delay in considering to seek care (Phase I), delay in identifying and reaching health facility (Phase II), and delay in receiving adequate and appropriate emergency obstetric

care (Phase III).

**Results:** While each barrier individually contributes to delays in care-seeking outcomes, they also interact synergistically within their contextual environments. Due to Kenya's constrained and debilitated health care system, quality of care represents a notable barrier for improving care-seeking outcomes.

**Conclusions:** Improvements in the demand and utilization of maternal health care in Kenya requires the government to consider new legislative policies to strengthen its health care system, improve quality of care, and ensure the equal distribution of financial and human resources among the counties. Furthermore, it is critical that new maternal health interventions are developed upon a participatory community-based approach, involving a close partnership with community leaders and local government ministries.

---

As Canada continues to demonstrate its commitment to improving global maternal, newborn, and child health (MNCH) – most recently, by pledging an additional \$3.5 billion over the next five years (2015-2020) to scale-up global initiatives (Government of Canada, 2014) – it is time for researchers and project developers to closely re-examine factors that impact MNCH outcomes. This article examines maternal mortality and morbidity in Kenya using Gabrysch & Campbell’s (2009) adapted version of Thaddeus & Maine’s (1994) “three-delay” framework (see Figure 2). This framework expands on behavioural models of health care demand and utilization – examining both perceived and actual barriers to both – and their impact on a woman’s decision to seek preventive or emergency maternal care. While the contextual elements of each barrier discussed in this article are specific to Kenya, the lessons learned from their examination can be applied worldwide.

## Global Maternal Health

Articles pertaining to global maternal health often greet their readers with three facts: (1) worldwide, nearly a thousand young healthy women die each day due to complications of pregnancy or childbirth (UNICEF, 2014); (2) it is estimated that nearly 90 percent of these deaths could have been avoided had the women received competent professional medical care (WHO, 1986); and (3) in 2013, there were approximately 289,000 maternal deaths worldwide, with a maternal mortality ratio (MMR) of 210 maternal deaths per 100,000 live births

(UNICEF, 2014). These facts are a disheartening reminder of the tremendous loss of life and of the enormity of challenges that lay ahead; in some developing countries, lack of equipment, training, and information systems required to accurately identify and register maternal mortality may indicate that these numbers are a gross under-estimation of the true number of maternal deaths worldwide (UNICEF, 2014).

Despite the significant gains in maternal health currently being made in Nepal, Cambodia, Rwanda, and Laos, there continue to be major global disparities between regions and income groups (Hussein, Blanc, Donnay, McCaw-Binns, & Webber, 2012; UNICEF, 2014). This disparity is most clearly demonstrated by current estimates that approximately 98 percent of global maternal deaths occur among the poorest and most vulnerable groups in developing countries (Hussein et al., 2012; UNICEF, 2014). Women in developing countries are 23 times more likely to die because of pregnancy or childbirth related complications than women in developed regions of the world (See Figure 1) (UNICEF, 2014). The sub-Saharan region alone accounts for 62 percent (179,000) of global maternal deaths, and has the highest regional maternal mortality ratio (MMR), with approximately 510 maternal deaths per 100,000 live births. In short, maternal mortality continues to be disproportionately higher in developing regions of the world and its burden is borne almost exclusively by the poor.

## Maternal Health in Kenya

While many regions of the world have made significant progress in reducing maternal mortality since 1990, sub-Saharan Africa has had minimal success in doing so. In 2013, the MMR in Kenya remained unchanged at 488 deaths per 100,000 live births. With 6,300 maternal deaths, Kenya suffered the eighth highest burden of maternal death worldwide (UNICEF, 2014). Kenya's failure to reduce its MMR is likely related to the decline in the number of deliveries attended by skilled healthcare professionals, such as trained physicians, nurses, or midwives, which fell from 50 percent in 1989 to 42 percent in 2003 (CBS, MOH, ORC Macro, & ORC Macro, 2004). Interestingly, despite approximately 92 percent of women having at least one antenatal appointment in Kenya, suggesting the reasonable availability of maternal health care, the skilled birth attendance rate remains relatively low (KNBS & ICF Macro, 2010). These discouraging findings support a body of literature, which suggests an increase in the supply and availability of maternal health care does not necessarily result in increased access to, or use of, maternal health care services (Kerber, De Graft-Johnson, Bhutta, Okong, Starrs, & Lawn, 2007; Kitui, Lewis & Davey, 2013; PMNCH, 2006).

## International Response to Maternal Health

To prevent maternal mortality and morbidity, risk factors signalling life-threatening complications, such as haemorrhage, pre-eclampsia

and eclampsia, puerperal sepsis, and obstructed labour must be identified early and managed effectively (Adegoke & Van Den Broek, 2009; Ashford, 2002). The "Skilled Birth Attendance Strategy" is recognized by the WHO as the most effective intervention for reducing maternal mortality and morbidity; this two-part strategy focuses on strengthening health care systems by facilitating access to both skilled health care professionals and maternal health care facilities (Adegoke & Van Den Broek, 2009; WHO, 1999). Adequate maternal health care requires both access to skilled health care professionals, such as doctors, nurses, or midwives, as well as necessary maternal health services, such as antenatal care, postnatal care, emergency obstetric care, safe abortion, and skilled birth assistance (Adegoke & Van Den Broek, 2009; Bhutta et al., 2010).

While the scope of this paper is primarily concerned with barriers preventing pregnant women from accessing maternal health care services, the importance of family planning initiatives should not be understated. Family planning strategies, such as contraception, elective abortion, and assisted reproductive technology, protect against maternal mortality and morbidity both directly, by avoiding unwanted pregnancy and unsafe abortion, and indirectly, by promoting the empowerment of women and the reduction of poverty and malnutrition (Cleland et al., 2006). While national family planning programs in countries throughout Asia and Latin America have had success in reducing fertility rates, many countries in sub-Saharan Africa, including Ken-

ya, still experience high unmet need for family planning and high fertility rates (Cleland et al., 2006; KNBS & ICF Macro, 2010). National survey reports reveal that only 46 percent of women in Kenya use contraceptives and that approximately 43 percent of pregnancies were unplanned (KNBS & ICF Macro, 2010). These findings indicate the necessity of implementing family planning strategies within maternal health initiatives in Kenya, as well as the importance of utilizing a multifaceted approach.

## Availability (Supply) and Accessibility

While implementing safe clinical obstetric interventions remains the primary focus of nearly all maternal health programs, expanding maternal health coverage requires more than an increase in the supply of services (Hussein et al., 2012; PMNCH, 2006). An increase in the supply of health facilities does not always result in greater accessibility, and despite the presence of facility-based services, utilization rates during delivery may remain low in many developing countries (Kerber et al., 2007; Kitui, Lewis & Davey, 2013; PMNCH, 2006). It is estimated that more than 50 percent of women in developing countries continue to deliver at home, only 41 percent of these deliveries attended by a traditional birth attendant, and clinical obstetric proficiency among these attendants varying widely (Montagu, Yamey, Visconti, Harding, & Yoong, 2011). It goes without saying that all mothers desire a normal and safe pregnancy that results in the birth of a healthy child. However, for women

living in developing countries, this is often not a matter of simple choice. A woman's decision to seek preventive maternal care and professional medical assistance during labour is not dependent upon any one factor exclusively, but is instead the result of a complex combination of potential barriers that form the context for her decision-making. (Bradley et al., 2012; Gabrysch & Campbell, 2009; Hussein et al., 2012; Kitui, Lewis & Davey, 2013; PMNCH, 2006; Thaddeus & Maine, 1994). These barriers are often unique to each community and form the context against which decisions are made; they may include physical barriers, financial barriers, sociocultural barriers; and the perceived quality of care. (Hussein et al., 2012; PMNCH, 2006). To successfully reduce global maternal mortality and morbidity, it is critical that interventions extend beyond medical obstetric care, and build upon an understanding of the local contextual barriers that influence access to, and demand for, maternal health care (Hussein et al., 2012). **Barriers to Essential Maternal Health Care Services in Kenya: The "Three-Delay" Framework** This paper examines maternal mortality and morbidity in Kenya using Gabrysch & Campbell's (2009) adapted version of Thaddeus & Maine's (1994) "three-delay" framework (see Figure 2). This framework expands on behavioural models of health care demand and utilization and examines the impact of four barriers-to-care on a woman's decision to seek preventive or emergency maternal care. These perceived or actual barriers include: (1) physical accessibility, (2) economic accessibility, (3) the perceived benefits and quality of care, and (4) sociocultural

obstacles. Each barrier may delay care-seeking outcomes in three phases: delay in considering to seek care (Phase I), delay in identifying and reaching health facility (Phase II), and delay in receiving adequate and appropriate emergency obstetric care (Phase III).

For example, a woman's perception of the financial accessibility of antenatal care, or of a facility-based delivery, may prevent her from considering either of these options (Phase I). If she does decide to take advantage of these health care options, her ability to pay for them may make doing so impossible, or at least significantly more difficult (Phase II). Gabrysch & Campbell's (2009) adapted "three-delay" framework will be used to outline and examine potential barriers and the impact they have on care-seeking behaviours in the Kenyan context (Gabrysch & Campbell, 2009; Thaddeus & Maine, 1994).

## Physical Accessibility

Physical accessibility, indicated by the distance separating a pregnant woman and the nearest maternal health facility, can create both a Phase I and Phase II delay in maternal health care seeking behaviours. While the perceived distance of a maternal health facility may prevent the consideration of facility-based care, the actual distance may prevent any possibility of reaching a maternal health facility should a complication arise (Gabrysch & Campbell, 2009; Thaddeus & Maine, 1994). Understandably, even if a woman intends to deliver in a maternal health care facility, she may abandon the idea of travelling

extended distances during labour, especially at the thought of enduring a ride through rough terrain, or worse, a journey on foot. Attempts to travel extended distances are often unsuccessful, and in the event of complications, the mother often dies en route. The difficulties posed by this barrier are often exacerbated when women live in rural regions of developing countries with poor roads and limited options for transportation and communication (Gabrysch & Campbell, 2009; Mrisho et al., 2007; Thaddeus & Maine, 1994). Nearly 76 percent of Kenya's population lives in rural communities, where the above conditions are fulfilled. Distance and transportation therefore would appear to represent significant barriers to accessing maternal health care (Population Reference Bureau, 2013).

This observation is, at first, supported by reports that show that distance or lack of transportation, are the most commonly cited reasons that women in Kenya give for choosing not to deliver at a professional health care facility (Kitui, Lewis & Davey, 2013). However, while distance and transportation may be perceived as the most important barrier to maternal health care, nearly 90 percent of mothers in Kenya live less than 5km from a health care facility staffed by at least one skilled health care professional and, as previously discussed, more than 90 percent attend at least one antenatal appointment (KNBS & ICF Macro, 2010; Kitui, Lewis & Davey, 2013). Moreover, after controlling for other variables, statistical measurements indicate no significant correlation between the distance and the location of delivery (Kitui, Lewis & Davey, 2013). It

therefore seems that distance and lack of transportation cannot alone explain the existence of Phase I and Phase II delays.

These findings suggest that the importance of distance and transportation may be due to a complex interaction with other barriers, such as financial cost, perceived or actual quality of care, and severity of labour, delivery, or complications (Gabrysch & Campbell, 2009; Mrisho et al., 2007; Thaddeus & Maine, 1994). For example, women may be more likely to abandon the thought of travelling extended distances if a medical facility is thought to provide low quality care. Alternatively, women may choose to travel further to more desired health facilities if the quality of care is perceived to be superior (Anson, 2004; Gabrysch & Campbell, 2009; Thaddeus & Maine, 1994). The undesirable thought of enduring an extended journey to a health care facility, augmented by the financial cost of locating and hiring transportation, may deter women from seeking professional medical assistance (Gabrysch & Campbell, 2009; Thaddeus & Maine, 1994).

## Economic Accessibility

The use of maternal health services throughout pregnancy and delivery can often incur considerable financial costs, including direct transportation costs, medication and supply costs, and fees for health care personnel and facilities (Filippi et al., 2006; Gabrysch & Campbell, 2009; Storeng et al., 2008; Thaddeus & Maine, 1994). Despite being encouraged to plan for deliveries, the un-

predictability of delivery outcomes and costs often function as a disincentive for women to save for emergency care (Parkhurst & Rahman, 2007; Storeng et al., 2008). Women in Tanzania report that the fear of potential costs alone deterred them from seeking maternal health care (Kowalewski, Mujinja & Jahn, 2002). As a result, households with limited budgets may be unwilling, unprepared, or incapable of shouldering the expense of professional maternal health care services (Parkhurst & Rahman, 2007; Storeng et al., 2008). These findings suggest that financial accessibility acts as both a Phase I and Phase II barrier, inhibiting the initial decision to seek maternal health care, as well as the actual ability to receive emergency obstetric care should complications arise (Gabrysch & Campbell, 2009; Kitui, Lewis & Davey, 2013; Kowalewski, Mujinja & Jahn, 2002; Mrisho et al., 2007; Thaddeus & Maine, 1994).

The fact that many individuals and families cannot afford essential health care services, and the relationship of this fact to poor health outcomes, has forced health care financing onto the global health agenda. As a result, many developing countries, including Kenya, are now considering various health financing reforms, which modify how public funds are collected, pooled and managed, and spent. National health systems continue to work toward universal coverage by implementing policies that promote equitable access to key health care services for all people at an affordable cost (Chuma & Okungu, 2011; McIntyre, 2007).

In response to an economic downturn in 1989, and after more than 25 years of fully publicly funded health care, Kenya reintroduced health care user fees, including fees for medications, injections, and laboratory services (Chuma & Okungu, 2011). These reforms prompted a surge in the private health care sector, which currently operates nearly 50 percent of health care services in Kenya (Chuma & Okungu, 2011; MoMS, 2008). By 2004, worsening poverty and poor utilization rates led to the introduction of the “10/20” policy. Under the new policy, instead of user fees, individuals would pay a single registration fee of KSH 10 for services at health dispensaries (public outpatient health facilities providing health services for simple ailments) and KSH 20 for services at health centres (public out/inpatient health facilities providing preventative and comprehensive primary care services). Furthermore, children under the age of five and those with special conditions, such as patients with malaria and tuberculosis were completely exempt from all health service fees (Chuma & Okungu, 2011; CREHS, 2009; Muga, Kizito, Mbayah, & Gakuruh, 2005). Due to budgetary constraints, adherence to the “10/20” policy has been extremely low, and many health facilities continue to charge user fees under the direction of district level managers and health committees (Chuma & Okungu, 2011; CREHS, 2009).

The impact of financial accessibility on the use of health care services in Kenya is magnified by the country’s exceedingly low rate of insurance coverage. Women from wealthier households or those with health insurance coverage are sig-

nificantly more likely to seek professional maternal care (Kitui, Lewis & Davey, 2013). Unfortunately, in 2011, Kenya’s health insurance coverage remained at only 7% (Joint Learning Network, 2014), restricted to mainly urban (Jacobs, Ir, Bigdeli, Annear & Van Damme, 2012; MoMS & MoPHS, 2009), and wealthy populations (MoMS & MoPHS, 2009). The National Hospital Insurance Fund (NHIF) is Kenya’s state health insurance corporation, and primary provider of health insurance in the country. While membership to the NHIF is currently mandatory for workers in the public and private formal sector in Kenya (Chuma & Okungu, 2011), the formal sector only represents 11 percent of the Kenyan workforce; the majority of workers are located in the irregular, untaxed, and self-employed informal sector (Government of Kenya, 2012). They are therefore not required to purchase an insurance plan. Voluntary NHIF membership is currently available for all Kenyan residents at a minimum rate of KSH 160 per month (Chuma & Okungu, 2011), however, enrolment remains low due to lack of knowledge about the program, its registration process, and the types of medical services covered (Mathauer, Schmidt & Wenyaa, 2008).

As a result, Kenyans continue to endure either significant user fees from the public health sector or high costs from the private sector, both leading to exorbitant annual household health care costs. In 2006, household out-of-pocket payments, including all direct and in-kind payments for health care services, pharmaceuticals, and therapeutic appliances, accounted for approx-

imately 29 percent of total health expenditure in Kenya (Government of Kenya & Health Systems 2020 Project, 2009). These out-of-pocket payments for health care services accounted for nearly 10 percent of Kenya's average annual household budget, and were of course a much larger proportion of the budgets of poorer households. Approximately 45.9 percent of the total population in Kenya already lives below the national poverty line (World Bank, 2014). And as a result of these expenditures, many more Kenyan households are forced into acute poverty each year (Chuma & Maina, 2012),

On June 1, 2013, Kenyan President Uhuru Kenyatta attempted to address this issue by announcing that all maternal health care fees in public health facilities were to be abolished immediately. Under the new policy, the Kenyan government will reimburse all public and maternal health care facilities, including those operated by faith-based or non-governmental organizations, for each delivery they conduct (Health Policy Project, 2014; Richard et al., 2013). The free maternal health policy is still in its pilot phase, limiting benefits to specific regions of Kenya and parts of Nairobi. Furthermore, it is heavily dependent on donor funding, making sustainability difficult to ensure. Despite these potential limitations, it is still early to formulate an accurate evaluation of the implementation and effectiveness of this policy (Richard et al., 2013). While free maternal health care may be a step in the right direction, Kenya's public health sector remains significantly underfunded and understaffed (KNCHR, 2013), which has resulted in

overcrowded health facilities, poor service quality, and reports of women still preferring to deliver at home with friends and family or with a traditional birth attendant (Gathigah, 2013).

Interestingly, while a review of the evidence suggest that financial cost greatly influences the women's decisions to seek maternal care during pregnancy and delivery, and their ability to do so, (Gabrysch & Campbell, 2009; Kitui, Lewis & Davey, 2013; Kowalewski, Mujinja & Jahn, 2002; Thaddeus & Maine, 1994), only 7 percent of the poorest women in sub-Saharan Africa reported cost as a deciding factor (Montagu et al., 2011). While it is possible that women in sub-Saharan Africa underestimate the influence of financial cost on the decision to seek maternal health care, it is more likely that like distance, financial cost is part of a complex combination of various barriers such as quality of care, and other sociocultural factors, that together impede women's ability to access maternal services.

## Quality of Care

Limited financial and human resources in many developing countries have resulted in health care systems with disastrously poor quality of care (Bhutta et al., 2010; UNICEF, 2014). Most developing countries spend less than 15 percent of their national budget on health, while international assistance for maternal, newborn, and child health accounts for only 31 percent of total funding. As a result, quality of care continues to fall, while out-of-pocket expenditures soar (Bhutta et al., 2010). Only 10 percent of developing countries sustain a minimum of 23 phy-

sicians, nurses, and midwives per 10,000 people – a number identified by the WHO as the minimum number of health personnel required to safely and effectively deliver essential health services (Bhutta et al., 2010; UNICEF, 2014; WHO, 2014).

Along with acute shortages of health personnel, health care systems in developing countries often suffer from the unequal distribution of financial and human resources, shortages in medication, and poorly equipped health facilities. As a result, public health facilities may provide unacceptably low quality of care and may even be avoided by the public (Bhutta et al., 2010; Hussein et al., 2012; UNICEF, 2014). Many populations living in developing regions face not only the greatest burden of maternal deaths and disability but also limited access to essential maternal health care of acceptable quality (Bhutta et al., 2010; UNICEF, 2014).

A review of various national health surveys conducted in developing countries indicates that 68 percent of women who delivered outside a health facility reported that it was “not necessary” (Montagu et al., 2011). These findings suggest that quality of care not only influences the actual outcome of maternal care (Phase III), but also the perceived benefits and necessity and therefore demand (Phase I), of maternal care at professional health care facilities (Gabrysch & Campbell, 2009; Thaddeus & Maine, 1994). This perception is shaped by a complex combination of past individual or community experiences with pregnancy or health facilities, sociocultural

attitudes towards health care facilities and personnel, and knowledge of health and maternal complications (Gabrysch & Campbell, 2009; Hussein et al., 2012; Koblinsky et al., 2006). For example, past experiences and rumours of poor treatment from health care personnel, limited availability of supplies or services, unhygienic facilities, and extended waiting times, may overcome any perceived benefits of maternal care, and significantly deter women from seeking care (Gabrysch & Campbell, 2009; Mrisho et al., 2007; Paxton, Bailey, Lobis, & Fry, 2006; Thaddeus & Maine, 1994).

Negative rumours, past experiences and perceptions of facility-based care may be caused by cultural conflicts between modern medical ‘culture’ and the local culture of women in the community. These conflicts may stem from lack of privacy, restrictions on the presence of family members, and the lack of compassionate treatment by health care personnel (Gabrysch & Campbell, 2009; Thaddeus & Maine, 1994). In many studies, women report rude, arrogant, disrespectful, and even neglectful behaviour at health care facilities (Gabrysch & Campbell, 2009; Kyomuhendo, 2003; Mrisho et al., 2007; Muckle, Sprague, & Fergus, 2013; Thaddeus & Maine, 1994). As a result, many women prefer the assistance of a traditional birth attendant or relative and would rather risk delivering at home (Gabrysch & Campbell, 2009; Kyomuhendo, 2003; Mrisho et al., 2007; Muckle, Sprague, & Fergus, 2013; Thaddeus & Maine, 1994).

The Government of Kenya spends only US\$14

per capita on health care services annually (PMNCH, 2012), falling significantly short of the WHO's recommended US\$44 per capita (WHO, 2012). Constrained by insufficient financial resources, and lacking support from legislation, management expertise, and efficient information and communication systems, the health care system in Kenya is plagued by numerous weaknesses. These weaknesses include an acute shortage of health care personnel and unequal distribution of financial and human resources among regions and various levels of facilities (PMNCH, 2012).

Health care personnel are the foundation of an efficient health system, however, each of Kenya's 47 counties have yet to reach the government's target of 36 physicians for every 100,000 people (International Budget Partnership, 2013). Universities and training facilities in Kenya produce less than half of the required health care workforce each year, and retention of staff, especially in rural regions, continues to be a serious concern (Chankova, Muchiri, & Kombe, 2009; USAID Kenya, 2013). High rates of attrition for doctors and registered nurses are commonly attributed to low pay or poor living and working conditions (Chankova, Muchiri, & Kombe, 2009).

Limited financial and human resources have placed significant strain on Kenya's health system and health care workers. In late 2013, health workers in Kenya went on strike in protest of the collapsing health care system, citing shortages of health care personnel, equipment, and necessary

medications. The stressful impact of these working conditions were revealed to the Kenyan public when video footage surfaced online showing a woman delivering her child on the floor of a public hospital, while being slapped by attending nurses and told to walk to the appropriate ward (Dahir, 2014).

The importance of perceived quality of care as a variable in this analysis is further dependent on its interaction with other factors. As previously discussed, women may be unwilling to travel any distance from the comforts of home to a health care facility if they perceive little or no benefit and expect poor quality of care (Anson, 2004; Gabrysch & Campbell, 2009; Thaddeus & Maine, 1994). The thought of having to incur significant costs and even debt for a delivery at a low quality health care facility with potentially abusive staff is unthinkable, and is likely to deter many women from even considering professional health services (Gabrysch & Campbell, 2009; Thaddeus & Maine, 1994).

Therefore, strengthening the health system and improving the quality of care in Kenya, and therefore increasing accessibility to it, is crucial for improving utilization rates and reducing maternal mortality and morbidity (Bhutta et al., 2010; Paxton et al., 2006). Members of the community must be confident that they will receive supportive and respectful care with all necessary equipment, health care professionals, and drugs available, at an affordable cost (Kitui, Lewis & Davey, 2013; Thaddeus & Maine, 1994).

## Sociocultural Factors

Sociocultural factors, including ethnicity, religion, norms, values, and traditions, and their influence on personal and societal elements, such as wealth, education, and autonomy, act as powerful determinants of whether women choose to seek maternal health care during pregnancy or delivery. The depth and complexity of these factors and their influence on health care seeking behaviours are further intensified by their potential synergistic and/or independent impact. While these factors may encourage the use of health care facilities, they may also be factors contributing to increased risks of obstetric complication or targets for discrimination or exclusion. The interaction of these barriers, and their impact on all of the barriers previously discussed, produce highly complex Phase I and II delays (Gabrysch & Campbell, 2009; Thaddeus & Maine, 1994).

Socioeconomic standing, potentially associated with ethnicity and religion, has significant implications in determining levels of education and location of residence. High levels of education are consistently associated with increased rates of facility-based delivery (Gabrysch & Campbell, 2009; Thaddeus & Maine, 1994). This effect is most likely associated with the benefits of increased levels of education and literacy, such as increased knowledge and awareness of health information and services, socialization to medical ‘culture,’ access to financial resources, self-confidence, and better coping and negotiation skills. These benefits facilitate the development of autonomy for women, which translates to more

decision-making power, personal empowerment and better ability to demand maternal health services (Gabrysch & Campbell, 2009; Hussein et al., 2012; Navaneetham & Dharmalingam, 2002).

The positive impact of wealth and education for maternal outcomes has been documented in Kenya, where wealthy and highly educated women living in urban regions are significantly more likely to seek skilled assistance during delivery (Kitui, Lewis & Davey, 2013; Ochako et al., 2011). Unfortunately, significant financial, educational, and opportunity-based inequalities exist within Kenya, specifically between Kenya’s 42 tribal ethnic groups (World Bank, 2008). Historical accounts suggest that this variability may be related to historic ethnic inequalities in the distribution of financial resources from the government, which affect education, future opportunity, and wealth (Alwy & Schech, 2004). National health surveys in Kenya reveal significant variability between Kenya’s tribal ethnic groups and the location of delivery; Luhya women were significantly less likely to deliver in a health facility compared to their Kalenjin, Kikuyu, Meru, and Somali counterparts (Kitui, Lewis & Davey, 2013). These findings further suggest the presence of ethnic inequality in Kenya, as well as its influence on the barriers preventing access to maternal health care in Kenya.

Under-utilization and lack of demand for maternal health care may also be the result of a cultural conflict between medical ‘culture’ and the local cultures of a community. Common medical

practices at health care facilities, such as use of the supine birthing position, medical treatment from young or male health care personnel, limited access to family members during delivery, and limited privacy, may result in a socially inappropriate and uncomfortable experience for the woman. These potential experiences, and even the idea of delivering a child in a health care facility, may challenge the norms, values, and beliefs of that are central to a community (Gabrysch & Campbell, 2009; Mrisho et al., 2007; Thaddeus & Maine, 1994).

Sociocultural factors relating to ethnicity and religion may more directly contribute to an increased risk of obstetric complications. For example, some traditional beliefs in East Africa suggest that obstructed labour is caused by infidelity, deterring women from seeking facility-based care, especially if obstructed labour complications arise (Gabrysch & Campbell, 2009; Mrisho et al., 2007; Thaddeus & Maine, 1994). This direct impact may also result from traditional practices, such as early marriage and pregnancy.

Despite national laws and various efforts from international health organizations, early female marriage continues to be practised in many developing countries, including Kenya. Girls as young as fifteen are wed in arranged marriages; early marriage is associated with early pregnancy, which can have significant negative health implications for both women and children (Jensen & Thornton, 2003; Lewis & De Bernis, 2006). Young pregnant women, because they have un-

der-developed pelvic structures, are at significantly greater risk of suffering obstructed labour, obstetric fistula, or death. This is especially true of those women who are impoverished or malnourished. (Lewis & De Bernis, 2006).

Sociocultural factors also influence accessibility to maternal health by way of their impact on legislative policy. The Government of Kenya's restrictive abortion laws, coupled with its failure to address the causes of unwanted pregnancy, has resulted in a significant number of unsafe abortions. The restrictive laws fail to address demand and leave women with little choice but to risk their lives. As a result, more than 2,600 women die each year from unsafe abortions in Kenya, with more than 21,000 suffering related morbidity. The significant moral and value-based context of fertility, contraception and abortion, make these issues controversial and difficult to address, despite significant maternal mortality and morbidity (Center for Reproductive Rights, 2010).

## The Way Forward

Effective resolution of Kenya's maternal mortality burden requires a comprehensive understanding of the contextual, geographic, economic, and sociocultural barriers, which are further augmented by the country's high fertility rate and an under-financed and debilitated health care system. Gabrysch & Campbell's (2009) adapted "three-delay" framework reveals the unique interaction of each barrier and both their perceived and actual impact maternal care-seeking behaviours, demand, and utilization (Hussein

et al., 2012; PMNCH, 2012).

Findings indicate that strengthening the health care system and improving perceived and actual quality of care and benefits of seeking maternal health care is critical for scaling-up the rate of maternal health care service use in Kenya (Koblinsky et al., 2006; PMNCH, 2006). Reports of poor and insensitive treatment, negligence, and shortages of health care personnel threaten the reputation and perceived value of these services (Gabrysch & Campbell, 2009; Kyomuhendo, 2003; Mrisho et al., 2007; Muckle, Sprague, & Fergus, 2013; Thaddeus & Maine, 1994). The revitalization of Kenya's health care system requires not only an increase in funding but also a two-part strategy targeting improvements in health care personnel training and management, and health care system infrastructure and supply (Atherton, Mbechem, & Nyalusi, 1999).

Poor quality of care and acute shortages of health personnel should be addressed promptly by strategies for increasing health care personnel and management personnel training, deployment, and retention (Koblinsky et al., 2006). Unsurprisingly, health care personnel and management personnel are a critical determinant of the level of quality in health care facilities. Their performance is often an indicator of their competence, motivation, and available resources. Therefore, the education and training of health care personnel and management personnel must be a priority for health ministries in Kenya. It is essential that the learning needs and demands of health care personnel are first assessed, and that

they are then provided through continued education. In-service training exercises, such as active learning opportunities and discussions, should be provided with continuous physician-learner interaction. To improve quality of care in public health facilities, training should be context-focused and target knowledge capacity and culturally adequate and acceptable care (Koblinsky et al., 2006). Furthermore, management personnel must be trained to maintain close relationships with health officials and community leaders based on enhanced communication, information, and referral systems. These practices promote the establishment of an inclusive and contextually-informed community-based health system, which better facilitates the mobilization of community members into health facilities (Bradley et al., 2012; Koblinsky et al., 2006; Lee et al., 2009; PMNCH, 2006).

Limited and unequal distribution of human resources has had a devastating impact on the quality and accessibility of maternal care in Kenya. While deliveries conducted by an obstetrician may be ideal, Kenyan health officials must consider alternative options for training skilled birth attendants. Multipurpose community health workers can be trained in assistant midwifery in six months to conduct home deliveries; midwives and assistant midwives may also join together with obstetricians and registered nurses to establish community birthing centres. Focusing training on midwifery also has the benefit of being highly cost-effective due to easier recruitment, better retention, and lower retention and training costs. Moreover, midwives often

share closer sociocultural similarities with the women they treat, making them more desirable caregivers in the eyes of patients (Koblinsky et al., 2006). Community-based health strategies promoting the training and implementation of volunteer community health workers, such as Nepal's innovative Female Community Health Volunteer Program, should also be considered. While these programs have been shown to improve maternal and child health outcomes, they are also an efficient source of health information and data, and promote both community development and women's empowerment (Glenton et al., 2010). Considering these alternative forms of training, deployment, and retention may not only strengthen the health care system but also strengthen its relationship with local communities (Koblinsky et al., 2006).

The Government of Kenya has a national responsibility to maintain the financial accessibility of maternal health. It can do so by acknowledging the financial inequalities that exist and proposing health-financing reforms that address them. These reforms must focus on reducing household out-of-pocket costs by enforcing current restrictions on user fees, as well as the "10/20" and free maternal health care policies. Furthermore, the government must consider new options to expand health insurance coverage in Kenya (Bucagu, Kagubare, Basinga, Ngabo, Timmons, & Lee, 2012; Chuma & Okungu, 2011; Lee et al., 2009). NHIF coverage and enrolment must be facilitated through community outreach programs developed in partnership with community stakeholders and delivered through vari-

ous channels in the community. These programs must focus on raising awareness of, and providing information about the NHIF, and on providing assistance with the enrolment process (Capuno, Kraft, Quimbo, Tan & Wagstaff, 2014; Chuma & Okungu, 2011; Mathauer, Schmidt & Wenyaa, 2008). Key lessons on the impact of health financing reforms can be learned from a review of Rwanda's health policy experiences. In 1996, the Government of Rwanda began developing close partnerships with local and foreign health organizations. These partnerships facilitated the development health financing strategies, which aimed to increase resource allocation to basic health care and promote universal health coverage. These strategies included the introduction of an innovative community-based health micro-insurance ('mutuelles'), performance-based financing, and fiscal decentralization. Nearly 10 years later, these reforms have contributed to a dramatic increase in health insurance coverage and health service utilization, as well as a reduction in out-of-pocket payments among the insured (Sekabaraga, Diop, & Soucat, 2011).

Gabrysch & Campbell's (2009) adapted "three-delay" framework reveals the significant impact of sociocultural barriers on women's access to maternal health services in Kenya, highlighting a significant gap between the cultures of Kenyan communities and the 'culture' of facility-based care. To bridge this highly context-dependent gap, maternal health interventions in Kenya must use a participatory community-based approach, which focuses on eliminating sociocultural barriers to maternal health care by

bringing communities closer to health care facilities. Community-based programs, which utilize various community engagement strategies, are a cost-efficient approach to promote healthy behaviours and increase both collective health knowledge and community involvement. Furthermore, they improve attitudes towards and cultural acceptance of medical ‘culture’ through communication strategies, such as the use of mass media (Lee et al., 2009; PMNCH, 2006). These effects in turn facilitate the development of community empowerment and mobilization – a “... process of enabling people to organize themselves, recognize opportunities, identify their collective potential, and utilize available resources to realize a shared goal through unified action” (Lee et al., 2009, p.4).

Each day, over a hundred women die in Kenya as a result of avoidable complications during pregnancy or delivery (UNICEF, 2014). Gabrysch & Campbell’s (2009) adapted version of Thaddeus & Maine’s (1994) “three-delay” framework reveals the complex interaction of various barriers that prevent women in Kenya from considering or accessing adequate maternal health care, and ultimately result in these maternal mortalities and morbidities (Gabrysch & Campbell, 2009; Thaddeus & Maine, 1994). In order to slow and eventually reverse this troubling trend, the Government of Kenya must learn from other country’s accomplishments and consider new legislative policies to strengthen its health care system, improve quality of care, and ensure the equal distribution of financial and human resources among the counties (Atherton, Mbekem, &

Nyalusi, 1999). Furthermore, it is critical that new maternal health interventions are developed upon a participatory community-based approach, involving a close partnership with community leaders and local government ministries (Hussein et al., 2012; KNBS & ICF Macro, 2010; PMNCH, 2012). In the same regard, maternal interventions worldwide must address the unique needs of each community and empower its members to actively participate in the strengthening of local health care systems.

## References

- Adegoke, A. A., & Van Den Broek, N. (2009). Skilled birth attendance-lessons learnt. *BJOG: An International Journal of Obstetrics & Gynaecology*, 116(s1), 33-40.
- Alwy & Schech. (2004). Ethnic inequalities in education in Kenya. *International Education Journal*, 5(2), 266-274.
- Anson, O. (2004). Utilization of maternal care in rural HeBei Province, the People's Republic of China: Individual and structural characteristics. *Health policy*, 70(2), 197-206.
- Ashford, L. (2002). Hidden suffering: Disabilities from pregnancy and childbirth in less developed countries. Washington, US: Population Reference Bureau.
- Atherton, F., Mbekem, G., Nyalusi, I. (1999). Improving service quality: Experience from the Tanzania Family Health Project. *Int J Qual Health Care*, 11, 353-356.
- Bhutta, Z. A., Chopra, M., Axelson, H., Berman, P., Boerma, T., Bryce, J., ... & Wardlaw, T. (2010). Countdown to 2015 decade report (2000 10): Taking stock of maternal, newborn, and child survival. *The Lancet*, 375(9730), 2032-2044.
- Bradley, E. H., Byam, P., Alpern, R., Thompson, J. W., Zerihun, A., Abeb, Y., & Curry, L. A. (2012). A systems approach to improving rural care in Ethiopia. *PloS one*, 7(4), e35042.
- Bucagu, M., Kagubare, J. M., Basinga, P., Ngabo, F., Timmons, B. K., & Lee, A. C. (2012). Impact of health systems strengthening on coverage of maternal health services in Rwanda, 2000-2010: A systematic review. *Reproductive health matters*, 20(39), 50-61.
- Capuno, J. J., Kraft, A. D., Quimbo, S., Tan Jr, C. R., & Wagstaff, A. (2014). Effects of interventions to raise voluntary enrollment in a social health insurance scheme: a cluster randomized trial. *World Bank Policy Research Working Paper*, (6893).
- Center for Reproductive Rights. (2010). In harm's way: The impact of Kenya's restrictive abortion law. New York, US.
- Central Bureau of Statistics, Ministry of Health, ORC Macro, & ORC Macro. (2004). Kenya: Demographic and health survey 2003. Nairobi, Kenya: Central Bureau of Statistics.
- Chankova, S., Muchiri, S., & Kombe, G. (2009). Health workforce attrition in the public sector in Kenya: A look at the reasons. *Human Resource Health*, 7(1), 58.
- Chuma, J., & Maina, T. (2012). Catastrophic health care spending and impoverishment in Kenya. *BMC health services research*, 12(1), 413.
- Chuma, J., & Okungu, V. (2011). Viewing the Kenyan health system through an equity lens: Implications for universal coverage. *International journal for equity in health*, 10(1), 22.
- Cleland, J., Bernstein, S., Ezeh, A., Faundes, A., Glasier, A., & Innis, J. (2006). Family planning: the unfinished agenda. *The Lancet*, 368(9549), 1810-1827.
- Consortium for Research on Equitable Health Systems (CREHS). (2009). Reducing user fees: Implementation challenges and a possible solution. London, UK.
- Dahir, A. L. (2014, January 13). Kenya's health workers claim mismanagement. *Aljazeera* Retrieved from <http://www.aljazeera.com/indepth/features/2014/01/kenya-health-workers-claim-mismanagement-20141751735209910.html>
- Filippi, V., Ronsmans, C., Campbell, O. M., Graham, W. J., Mills, A., Borghi, J., ... & Osrin, D. (2006). Maternal health in poor countries: the broader context and a call for action. *The Lancet*, 368(9546), 1535-1541.
- Gabrysch, S., & Campbell, O. M. (2009). Still too far to walk: literature review of the determinants of delivery service use. *BMC pregnancy and childbirth*, 9(1), 34.

- Gathigah, M. (2013, July 9). Kenya's mothers shun free maternity health care. Inter Press Service News Agency. Retrieved from <http://www.ipsnews.net/2013/07/kenyas-mothers-shun-free-maternityhealth-care/>
- Glenton, C., Scheel, I. B., Pradhan, S., Lewin, S., Hodgins, S., & Shrestha, V. (2010). The female community health volunteer programme in Nepal: decision makers' perceptions of volunteerism, payment and other incentives. *Social science & medicine*, 70(12), 1920-1927.
- Government of Canada. (2014). Canada's Ongoing Leadership to Improve the Health of Mothers, Newborns and Children (2015-2020). Retrieved from <http://mnch.international.gc.ca/en/topics/leadership-ongoing.html>
- Government of Kenya. (2012). Kenya: Facts and figures 2012. Nairobi, Kenya: Kenya National Bureau of Statistics.
- Government of Kenya & Health Systems 2020 Project. (2009). Kenya National Health Accounts 2005/2006. Bethesda, US: Health Systems 20/20 Project.
- Health Policy Project. (2014). Policy changes to benefit women: Ministry of Health implements free maternity services nationwide. Retrieved from [http://www.healthpolicyproject.com/ns/docs/MaternalNewbornHealthCare\\_Kenya\\_Oct2013.pdf](http://www.healthpolicyproject.com/ns/docs/MaternalNewbornHealthCare_Kenya_Oct2013.pdf)
- Hussein, J., Blanc, A. K., Donnay, F., McCaw-Binns, A., & Webber, R. (2012). An introduction to maternal and perinatal health. In J. Hussein, A. McCaw-Binns & R. Webber (Eds.), *Maternal and perinatal health in developing countries* (1-9). Oxfordshire, UK: CAB International.
- International Budget Partnership. (2013). Fair play: Inequity across Kenya's counties and what it means for revenue sharing. Washington, US: Lakin, J. & Kinuthia, J.
- Jacobs, B., Ir, P., Bigdeli, M., Annear, P. L., & Van Damme, W. (2012). Addressing access barriers to health services: An analytical framework for selecting appropriate interventions in low-income Asian countries. *Health Policy and Planning*, 27(4), 288-300.
- Jensen, R., & Thornton, R. (2003). Early female marriage in the developing world *Gender & Development*, 11(2), 9-19.
- Joint Learning Network. (2014, June 20). Kenya: Government health insurance programs profiled. Retrieved from <http://www.jointlearningnetwork.org/content/kenya>
- Kenya National Bureau of Statistics (KNBS) & ICF Macro. (2010). Kenya demographic and health survey 2008-09. Calverton, Maryland: KNBS and ICF Macro.
- Kenya National Commission on Human Rights (KNCHR). (2013). Implementing free maternal health care in Kenya: Challenges, Strategies, and Recommendations. Nairobi, Kenya: N. Bourbonnais. Retrieved from <http://www.knchr.org/Portals/0/EcosocReports/Implementing%20Free%20Maternal%20Health%20Care%20in%20Kenya.pdf>
- Kerber, K. J., De Graft-Johnson, J. E., Bhutta, Z. A., Okong, P., Starrs, A., & Lawn, J. E. (2007). Continuum of care for maternal, newborn, and child health: from slogan to service delivery. *The Lancet*, 370(9595), 1358-1369.
- Kitui, J., Lewis, S., & Davey, G. (2013). Factors influencing place of delivery for women in Kenya: An analysis of the Kenya demographic and health survey, 2008/2009. *BMC pregnancy and childbirth*, 13(1), 40.
- Koblinsky, M., Matthews, Z., Hussein, J., Mavalankar, D., Mridha, M. K., Anwar, I., ... & Van Lerberghe, W. (2006). Going to scale with professional skilled care. *The Lancet*, 368(9544), 1377-1386.
- Kowalewski, M., Mujinja, P., & Jahn, A.

- (2002). Can mothers afford maternal health care costs? User costs of maternity services in rural Tanzania. *African Journal of Reproductive Health*, 65-73.
- Kyomuhendo, G. B. (2003). Low use of rural maternity services in Uganda: Impact of women's status, traditional beliefs and limited resources. *Reproductive health matters*, 11(21), 16-26.
- Lee, A. C., Lawn, J. E., Cousens, S., Kumar, V., Osrin, D., Bhutta, Z. A., ... & Darmstadt, G. L. (2009). Linking families and facilities for care at birth: what works to avert intrapartum-related deaths? *International Journal of Gynecology & Obstetrics*, 107, S65-S88.
- Lewis, G., & De Bernis, L. (2006). *Obstetric fistula: Guiding principles for clinical management and programme development*. New York, US: World Health Organization.
- Mathauer, I., Schmidt, J. O., & Wenyaa, M. (2008). Extending social health insurance to the informal sector in Kenya. An assessment of factors affecting demand. *The International journal of health planning and management*, 23(1), 51-68.
- McIntyre, D. (2007). *Learning from experience: Health care financing in low-and middle-income countries*. Geneva, Switzerland: Global forum for health research.
- Ministry of Medical Services (MoMS). (2008). *Facts and figures on health and health related indicators*. Nairobi, Kenya: Ministry of Medical Services
- Ministry of Medical Services (MoMS) & Ministry of Public Health and Sanitation (MoPHS). (2009). *Kenya: Household health expenditure and utilization survey report 2007*. Nairobi, Kenya: Ministry of Medical Services.
- Montagu, D., Yamey, G., Visconti, A., Harding, A., & Yoong, J. (2011). Where do poor women in developing countries give birth? A multi-country analysis of demographic and health survey data. *PLoS One*, 6(2), e17155.
- Mrisho, M., Schellenberg, J. A., Mushi, A. K., Obrist, B., Mshinda, H., Tanner, M., & Schellenberg, D. (2007). Factors affecting home delivery in rural Tanzania. *Tropical Medicine & International Health*, 12(7), 862-872.
- Muckle, W., Sprague, A., & Fergus, S. (2013). Barriers to access of maternity care in Kenya: A social perspective. *J Obstet Gynaecol Can*, 35(2), 125-130.
- Muga, R., Kizito, P., Mbayah, M., & Gakuruh, T. (2005). *Overview of the health system in Kenya*. Demographic and Health Surveys.
- Navaneetham, K., & Dharmalingam, A. (2002). Utilization of maternal health care services in Southern India. *Social Science & Medicine*, 55(10), 1849-1869.
- Ochako, R., Fotso, J. C., Ikamari, L., & Khasakhala, A. (2011). Utilization of maternal health services among young women in Kenya: Insights from the Kenya Demographic and Health Survey, 2003. *BMC Pregnancy and Childbirth*, 11(1), 1.
- Parkhurst, J. O., & Rahman, S. A. (2007). Life saving or money wasting? Perceptions of caesarean sections among users of services in rural Bangladesh. *Health Policy*, 80(3), 392-401.
- Partnership for Maternal, Newborn, & Child Health (PMNCH). (2006). *Opportunities for Africa's newborns: Practical data policy and programmatic support for newborn care in Africa*. Cape Town, South Africa: Lawn, J., & Kerber, K.
- Partnership for Maternal, Newborn, & Child Health (PMNCH). (2012). *Maternal and child health: Kenya*. Nairobi, Kenya.
- Paxton, A., Bailey, P., Lobis, S., & Fry, D. (2006). Global patterns in availability of emergency obstetric care. *International Journal of Gynecology & Obstetrics*, 93(3), 300-307.

- Population Reference Bureau. (2013). 2014 world population data sheet. Washington, D.C.: Population Reference Bureau.
- Richard, F., Antony, M., Witter, S., Kelley, A., Sieleunou, I., Kafando, Y., & Meessen, B. (2013). Fee exemption for maternal care in Sub-Saharan Africa: A review of 11 countries and lessons for the region. *Global Health Governance*, 6(2), 52-72.
- Sekabaraga, C., Diop, F., & Soucat, A. (2011). Can innovative health financing policies increase access to MDG-related services? Evidence from Rwanda. *Health policy and planning*, 26(suppl 2), ii52-ii62.
- Storeng, K. T., Baggaley, R. F., Ganaba, R., Ouattara, F., Akoum, M. S., & Filippi, V. (2008). Paying the price: the cost and consequences of emergency obstetric care in Burkina Faso. *Social Science & Medicine*, 66(3), 545-557.
- Thaddeus, S., & Maine, D. (1994). Too far to walk: maternal mortality in context. *Social science & medicine*, 38(8), 1091-1110.
- United Nations Children's Fund. (2014). Trends in maternal mortality: 1990 to 2013. New York, US.
- USAID Kenya. (2013). Health systems strengthening. Nairobi, Kenya.
- World Bank. (2008). Kenya poverty and inequality assessment (Vol 1.). Washington, US.
- World Bank. (2014, July 1). Data: Kenya. Retrieved from [http://data.worldbank.org/country/kenya#cp\\_wdi](http://data.worldbank.org/country/kenya#cp_wdi)
- World Health Organization. (1986). Maternal mortality: Helping women off the road to death. *WHO chronicle*, 40(5), 175-183.
- World Health Organization. (1999). Reduction of maternal mortality: a joint WHO/UNFPA/UNICEF/World Bank statement. Geneva, Switzerland.
- World Health Organization. (2012, July 10). Spending on health: A global overview. Retrieved from <http://www.who.int/mediacentre/factsheets/fs319/en/>
- World Health Organization. (2014, July 10). Health workforce: Achieving the health-related MDGs. It takes a workforce! Retrieved from [http://www.who.int/hrh/workforce\\_mdgs/en/](http://www.who.int/hrh/workforce_mdgs/en/)

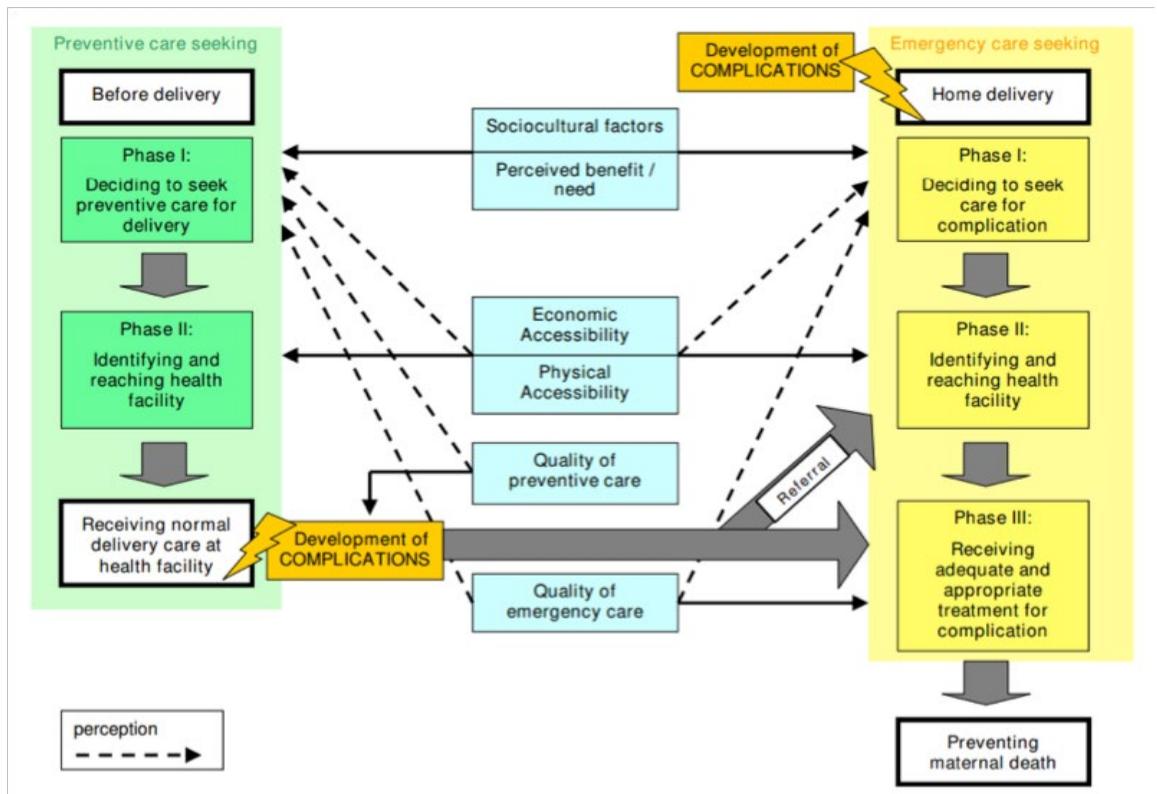
**Appendix**

**Figure 1: Estimates of maternal mortality ratio (maternal deaths per 100,000 live births), number of maternal deaths, and lifetime risk, divided by United Nations Millennium Development Goal regions, 2013.** Note the significant disparity in rates of maternal mortality between the Sub-Saharan region and all other regions, as well as the disparity between Developed and Developing regions.

Region	MMR <sup>a</sup>	Range of MMR uncertainty		Number of maternal deaths <sup>a</sup>	Lifetime risk of maternal death <sup>a</sup> 1 in:
		Lower estimate	Upper estimate		
World	210	160	290	289000	190
Developed regions <sup>b</sup>	16	12	23	2300	3700
Developing regions	230	180	320	286 000	160
Northern Africa <sup>c</sup>	69	47	110	2700	500
Sub-Saharan Africa <sup>d</sup>	510	380	730	179 000	38
Eastern Asia <sup>e</sup>	33	21	54	6400	1800
Eastern Asia excluding China	54	35	97	480	1200
Southern Asia <sup>f</sup>	190	130	280	69 000	200
Southern Asia excluding India	170	110	270	19 000	210
South-eastern Asia <sup>g</sup>	140	98	210	16 000	310
Western Asia <sup>h</sup>	74	50	120	3600	450
Caucasus and Central Asia <sup>i</sup>	39	31	53	690	940
Latin America and the Caribbean	85	66	120	9300	520
Latin America <sup>j</sup>	77	59	110	7900	570
Caribbean <sup>k</sup>	190	130	310	1400	220
Oceania <sup>l</sup>	190	100	380	510	140

UNICEF, 2014

**Figure 2: Gabrysch & Campbell’s (2009) adapted version of Thaddeus & Maine’s (1994) “three-delay” framework.** Preventive care-seeking and emergency care-seeking are conceptually separated, with potential barriers located in the centre. Accessing preventive maternal care includes the decision to seek care (Phase I) and identifying and reaching care (Phase II). If a complication arises, a woman’s survival will depend on her ability to promptly access adequate and appropriate treatment (Phase III Emergency Care). Accessing emergency maternal care in the event of a complication includes the decision to seek care (Phase I), identifying and reaching care (Phase II), and receiving adequate and appropriate care (Phase III). Successful progress through the emergency care continuum will determine survival. In all phases, delays may result from both perceived and actual barriers.



Gabrysch & Cambell (2009)

