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# Case 2 : Understanding and Developing Conceptual Frameworks and Causal Models in Maternal and Child Health Programming

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## CASE 2

# Understanding and Developing Conceptual Frameworks and Causal Models in Maternal and Child Health Programming

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### THE FIRST DAY

#### Leading Child Health Research: The Centre for Global Child Health, The Hospital for Sick Children

*“The world has become a small place. Even if we wanted to isolate ourselves from global health issues, we could not. Just think of SARS. We have an obligation to participate and use our skills and expertise in issues pertaining to child health everywhere.”*

*– Stanley Zlotkin, Chief of Global Child Health at SickKids*

On Monday May 12, 2014, Jasleen walked into the Peter Gilgan Centre for Research and Learning (PGCRL) building located at the corner of Bay and Elm in downtown Toronto. The \$400 million Research and Learning Tower was a 21-storey high building that was built to bring together the 2,000 scientists, trainees, and staff at the SickKids Research Institute (Hospital for Sick Children, 2010). For the next three months, Jasleen would embark on a new journey whereby she would work on the 11<sup>th</sup> floor of the building in the Centre for Global Child Health at The Hospital for Sick Children with leading child health experts to improve child health globally.

Only a few weeks ago, Jasleen received some documents from Julianna, the data manager at the Centre for Global Child Health, on the project that she would be working on for the next little while. In 2012, The Centre for Global Child Health at The Hospital for Sick Children and the Munk School of Global Affairs at the University of Toronto partnered with four Canadian non-governmental organizations (NGOs) to form the Muskoka Initiative Consortium (MIC) Knowledge Management Initiative (KMI). The MIC-KMI was intended to develop a knowledge management strategy and analyze data collected within ten NGO-led Maternal, Newborn and Child Health (MNCH) projects in seven low and middle-income countries in Africa and Asia (Bangladesh, Ethiopia, Ghana, Mali, Pakistan, Tanzania, and Zimbabwe). The goal of the initiative was to identify the lessons learned and best practices that could be shared to inform programming, monitoring, and implementation to impact the lives of mothers and their children in low and middle-income countries.

As Jasleen received her security badge and made her way through the revolving doors, she remembered that each of the NGOs had provided a document that outlined a framework to plan,

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implement, and evaluate their interventions. Her task was in no way simple – her phone conversation a few weeks ago with the key principal investigator on the project, Dr. Howard Khan, and data manager, Julianna, had left Jasleen with a challenging task. This task involved reviewing and understanding conceptual frameworks and causal models. She had started researching these concepts prior to her arrival, yet she still knew the biggest challenge she faced would be figuring out where to start. The elevator door opened and Jasleen stepped in. She had an idea!

### WHAT IS CANADA DOING?

#### **Keeping Promises: Improving Maternal, Newborn and Child Health**

*“Saving the lives of mothers and children is not only a moral imperative, it is also the foundation for building prosperous communities for this generation and the next. With Canadian leadership and the help of partners in Canada and around the world, we can achieve this goal and ensure that all women, newborns and children can live healthy and productive lives.”*

– Stephen Harper, Prime Minister of Canada

The year 2010 was when saving the lives of women and children became a global priority for many key global organizations, leaders, and funders across the world. During the 36th G8 Muskoka summit, held in June 2010 at the Deerhurst Resort in Huntsville, Ontario, the Prime Minister of Canada, Stephen Harper announced the “Muskoka Initiative – to mobilize global action to reduce maternal mortality and improve the health of mothers and children in the world’s poorest countries” (Government of Canada, 2014). Canada led the top leaders of the world to commit \$7.3 billion to improve maternal, newborn, and child health in the poorest countries across the world (Government of Canada, 2014). Canada invested a total of \$2.85 billion on MNCH programming for five years (2010-2015) (Government of Canada, 2014). The Muskoka Initiative was established to help achieve the 2015 Millennium Development Goals (MDGs) set out by the United Nations (UN) in 2000 at the UN Millennium Summit.

Following the Muskoka summit, the United Nations Secretary, General Ban Ki-moon, led the UN Millennium Development Goals Summit in September 2010 at the United Nations (UN) Headquarters in New York. At the summit, he announced a \$40 billion commitment to the “Every Women, Every Child Initiative – to mobilize and intensify global action to improve the health of women and children around the world” (United Nations Foundation, 2014). The funding was provided to this global strategy to reduce child mortality and improve maternal health, MDGs 4 and 5 (United Nations Foundation, 2014), to be achieved by 2015.

In November 2010, The Minister of International Cooperation, Beverly J. Oda, announced how the funding of \$2.85 billion would be filtered through the Department of Foreign Affairs, Trade and Development (DFATD<sup>1</sup>) in Canada, into the Muskoka Initiative focusing on three key paths: 1) strengthening the health systems; 2) decreasing the burden of infectious diseases; and 3) improving nutrition (Government of Canada: Foreign Affairs, Trade and Development Canada, 2015). During this time, the Muskoka Initiative Partnership Program was also announced (Government of Canada, 2014). Overall, Canada had committed to devoting \$82 million to the Muskoka Initiative Partnership Program from 2010 to 2015 (Government of Canada: Foreign Affairs, Trade and Development Canada, 2015).

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<sup>1</sup> Known as CIDA – the Canadian International Development Agency.

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As Jasleen reviewed the timelines on how Canada became an integral partner in improving MNCH, they provided an insight not only into the involvement of Canada in the past five years towards global issues surrounding MNCH, but how the partnerships had formed through the Muskoka Initiative Partnership Program, such as the one she was working on at the Centre for Global Child Health. These projects were being funded through DFATD, as part of the commitment to advancing MNCH, through the Muskoka Initiative. This gave Jasleen a clear understanding of the task that she had to complete: it was clear to her that since DFATD was a funding body and provided grants to projects put forth by organizations, they also had requirements that needed to be met. One of these requirements was to provide a framework or model that outlined the programs and activities that were implemented by organizations (see Exhibit 1). She wondered, was this the only framework used by organizations to plan, implement, or evaluate interventions? What were the processes or steps needed to develop a framework or model? She pulled out her MacBook.

### UNDERSTANDING THE TERMINOLOGY

#### **Facing the Challenge: The First Step in Program Planning, Implementation, and Evaluation**

*“If you don’t know where you are going, how are you going to know when you get there?”*  
– Yogi Berra

Jasleen thought the best way to understand how to develop a conceptual framework or causal model would be to understand what the terms ‘conceptual framework’ and ‘causal model’ actually meant. She opened up a Google search page and typed in the terms ‘conceptual framework’ and ‘causal models’ and quickly became overwhelmed when she saw the various ways in which the terms were defined:

- **Conceptual Frameworks**

“A conceptual framework is typically developed from theory. It identifies the concepts included in a complex phenomenon and shows their relationships. The relationships are often presented visually in a flowchart, web diagram or other type of schemata” (Leshem & Trafford, 2007).

“Explains, either graphically or in narrative form, the main things to be studied the key factors, concepts, or variables—and the presumed relationships among them” (Adamson, 2005).

- **Causal Models**

“Causal models can take several forms and may be used at different stages in research. For example, a pictorial model is a way of portraying possible relationships between several variables and in this sense should be treated as an integrated set of hypotheses which are worthy of further investigation. Lines are drawn between variables to indicate potential relationships and when arrowheads are added they indicate causal direction” (Jupp, 2006).

“In a pathway approach, you would specify each connection that you think might be relevant. You might specify that activity A affects short-term outcomes A and C, which in turn affect medium-term outcomes E and F, and long-term outcomes A and D. You might also expect that there will be feedback loops in your model. For instance, changing the results of a short-term outcome could trigger a change in

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another short-term outcome that then reverberates in or feeds back to the first outcome” (Cornell University: Office of Research on Evaluation, 2009).

Jasleen knew this would not be easy – she would need to look up other terms as well. She started with a comprehensive literature review on conceptual frameworks (i.e., Logic Models (LMs)), causal models (i.e., Directed Acyclic Graphs (DAGs)), and path analysis models (i.e., Structural Equation Models (SEMs)). Jasleen needed to understand the differences between the various frameworks, models, and pathways that existed. Therefore, the greatest challenge Jasleen faced was grasping the terms and concepts that were being used by programmers and evaluators to plan, implement, and evaluate their programs and interventions. The terms and concepts used to describe the specific function and set of cause-effect relationships seemed to vary between authors. However, Jasleen soon came to realize that even though there were different ways to define the terms, the logical process that each author followed was similar. The relationships were illustrated either through a framework, model, or diagram and started with underlying conditions and assumptions (i.e., theory, strategy, resources, activities, contextual factors, determinants of health), which followed through the immediate (short-term) and intermediate (medium-term) outcomes, finally leading up to an end result (long-term) (i.e., ultimate outcome, disease state, impact) (see Exhibit 2 for an example of a conceptual framework and Exhibit 3 for an example of a causal model (path analysis)).

Jasleen had learned that organizations were using frameworks, models, or pathways when applying for grant funding and reporting their final results. In particular, one of the four Canadian NGOs working with the Centre for Global Child Health and the Munk School of Global Affairs had developed a similar framework to reach the 2015 MDG goals. Jasleen thought if she were to develop a model or framework that would assist in planning, implementing, and evaluating interventions, specific details would be needed. A recent report published by the UN “Trends in Maternal Mortality: 1990-2010” mentioned that “of the 40 countries with the world’s highest rates of maternal death, 36 were located in sub-Saharan Africa” (World Health Organization, 2012). Therefore, it was not surprising that Mali was one of the African countries with a maternal mortality ratio of 1200 maternal deaths per 100,000 live births, ranking among the top 10 countries in which women faced the highest risk of death during pregnancy and childbirth (Gage, 2007). Now that Jasleen knew what the terms meant and when to use them, did she not need to know how to apply them? Jasleen turned back to her MacBook: the next step was clear.

### THE SITUATION

#### **Creating the Big Picture: Maternal Health Around the World**

*“Women are not dying because of untreatable diseases. They are dying because societies have yet to make the decision that their lives are worth saving: We have not yet valued women’s lives and health highly enough.”*

– Mahmoud Fathalla

At the September 2000 Millennium Summit held at the UN headquarters in New York, with the world’s top leaders from 189 nations, the largest assembly in history came together to embrace the UN Declaration (2014). The Declaration was the first step taken to address the issue of extreme poverty around the world and to combat the underlying issues of poverty by the year 2015 (United Nations, 2015). The result of this declaration was the development of the eight MDGs (see Exhibit 4). The fifth MDG was aimed at improving maternal health by reducing maternal mortality rates by three quarters by 2015.

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According to the World Health Organization (WHO), in 2013, an estimated 289,000 women died during pregnancy and childbirth due to limited access to skilled health care professionals and emergency care (WHO, 2014). However, between 1990 and 2013, maternal mortality had reduced by 50% – a decline of 2.6% deaths per year. This was nowhere close to the 5.5% decline needed per year to reach the goal set in MDG5. There had been significant progress in working towards reducing maternal mortality, however even with this decline the maternal mortality ratio in developing regions was still 14 times higher than that observed in developed regions (UN, 2015). As Jasleen continued to read the reports provided by WHO on maternal mortality around the world, she could not believe the difference in risk associated with maternal death in developed versus developing countries, specifically that “the probability of a 15 year old woman dying from a maternal cause was 1 in 3,700 in developed countries, versus 1 in 160 in developing countries” (WHO, 2014).

Jasleen knew complications could arise during and following pregnancy and childbirth, but what she was surprised to see was that nearly 75% of all maternal deaths in developing countries were due to “unsafe abortions, severe bleeding and infections after childbirth, high blood pressure during pregnancy, and from complications that might occur during delivery” (WHO, 2014, see Exhibit 5). These were complications that could be reduced by implementing key interventions that involved connecting women with the healthcare system to improve the delivery, access, and utilization of maternal health care services, especially during the initial stages of pregnancy. Antenatal care packages focused on delivering interventions that could potentially reduce the complications that women faced during pregnancy, and could have a significant effect on maternal death in developing countries.

As Jasleen read further she came across the term “Continuum of Care” (see Exhibit 6). The WHO had stated this is “a principle that emphasized the linkage between health care packages across time and through various service delivery strategies” (Kerber et. al., 2007). In other words, this was a “strategy that looked at the needs of the mother, newborn, and child throughout their life cycle in places where care was provided, and this could include the home, local health clinics, and at district and regional hospitals”. Antenatal care was one of the eight basic health packages that were present in almost every health system. Jasleen wondered why the rate of maternal mortality was so high, especially when there were antenatal care packages available in developing countries. The WHO recommended a minimum of four antenatal visits, comprising interventions such as “tetanus toxoid vaccination, screening and treatment for infections, and identification of warning signs during pregnancy” (WHO, 2014b). The proportion of pregnant women in developing countries who had attended at least four antenatal care visits increased from 37% in 1990 to about 52% in 2012. Yet, this did not change the situation in even the poorest countries, where only 38% of pregnant women visited a skilled health care provider four or more times for antenatal care between 2006 and 2013 (WHO, 2014b, see Exhibit 7).

Jasleen sat in front of her computer and took a few minutes to reflect on what she had read about maternal health on a global level. She could only begin to imagine what the situation was like in Mali. She continued with her literature review.

### **Thinking about the Details: Maternal Health Care in Mali**

*“Our target population is mainly mothers, and everyone thinks, if you educate mothers everything will be solved, but this is not the case.”*

*– Community Health Worker in Mali*

### ***Historical Background***

The Republic of Mali is located in western Africa with an approximate area of 1,241,248 square kilometers (Bergh et. al., 2012). The countries that border Mali are Algeria in the north, Niger in the east, Burkina Faso in the southeast, Côte d'Ivoire and Guinea in the south, and Senegal and Mauritania in the west (Bergh et. al., 2012). In the northern part of Mali, flat sand-covered rolling plains can be seen reaching the Sahara desert (Bergh et. al., 2012, see Exhibit 8).

The country of Mali is divided into eight regions and one district. The largest city in Mali is the capital city Bamako. In 1880, Mali became a French overseas territory and was known as “French Sudan” (WHO: Global Task Force in Cholera Control, 2009). Mali’s major economic activities are agriculture and fishing, including natural resources like gold, uranium, livestock, and salt (Bergh et. al., 2012). However even with several economic opportunities, Mali ranked 175 out of 187 on the 2011 UNDP Human Development Index (WHO: Global Task Force in Cholera Control, 2009) and remains one of the poorest countries in the world (Bergh et. al., 2012).

Mali’s population was nearly 15 million in 2012 and has tripled in the past 50 years (WHO, 2014). By 2050, it is projected that Mali’s population will reach 45.3 million (Population Institute, 2013). Almost half of Mali’s population is 15 years of age and the number of women modestly outweighs the number of men (94 men per 100 women) (The DHS Program, 2001). Furthermore, in 2012, there were approximately 3,251,159 women aged 15-49 living in Mali, giving birth to 495,992 children. The number of deaths that occurred in 2010 due to inadequate maternal health care services was approximately 3,800, with a maternal mortality rate of 540 per 100,000 live births (WHO, 2014d). Therefore, during pregnancy, women in Mali have a 1 in 24 risk of dying (The DHS Program, 2001). In 2011, the total fertility rate per woman was 6.2 (WHO, 2014c). The maternal mortality rate in Mali is a growing public health concern. Evidence suggests that the high mortality rates are in fact due to the antenatal and postnatal infections that are seen in the poorest population groups in Mali.

### ***Healthcare System***

The Mali health system is organized into a pyramid with four levels (The World Bank, 2011, see Exhibit 9). There are 59 health districts, which are divided into catchment areas and connected to a Community Health Centre (Centre de Santé Communautaire [CSCOM]). As such, the first point of contact is with the CSCOM. On the second level, there is a Referral Health Centre (CSREF) for each district that takes on cases that are referred from the CSCOM. This level is called the “first referral” (The World Bank, 2011). At the third level, there are seven “second referral” public hospitals, located in each region’s capital, which receive patients referred from the CSREF. At the top of the pyramid, there are four “third referral” public hospital institutions (two generalist and two specialized) (The World Bank, 2011). In 2011, Mali spent \$73 on health care per capita and 6.8% on health care as a percentage of its GDP (WHO, 2014c). Within Mali’s health care system there were significant gaps in staffing and health service delivery. In 2005, there were 0.8 physicians available per population of 100,000, compared to 4.3 nurses and midwives (WHO, 2014c). The majority of the health care system was managed and facilitated by nurses and midwives. In all of Africa, Mali is known to have the lowest number of health-care providers per population. In particular, rural areas of Mali have one-eighth the number of health care providers than that of urban areas (Hurley, Warren, Doumbia, & Winch, 2014).

### ***Maternal Health Care Services***

Mali is one of the African countries with the poorest maternal health care in sub-Saharan Africa (Manda, Kandala, & Ghilagaber, 2014). Maternal health is defined as “the health of mothers during pregnancy, childbirth, and in the postpartum period” (Manda et al., 2014). Women in Mali have a 5% lifetime risk of maternal death and it is estimated that for every maternal death, an additional 20 women will experience childbirth-related illness or injury (Hurley et al., 2014). The greatest obstacle in sub-Saharan Africa for not reaching the MDGs is the decreased number of skilled health care providers available to women during antenatal care. In sub-Saharan Africa, fewer than half of the women receive four or more antenatal care visits from skilled health care providers (White, Dynes, Rubardt, Sissoko, & Stephenson, 2013). In Mali, approximately 35% of women had four or more antenatal care visits in 2006 (WHO, 2014d).

Jasleen sat back and looked out the window. She thought to herself, what if adequate maternal health care services were provided to the women of Mali? Would providing these services decrease the observed maternal mortality rate? Were there any other barriers that women faced during pregnancy that limited their access and utilization of antenatal care services? Providing antenatal care services was one of the key packages in the Continuum of Care strategy and led to identifying many of the complications that could be determined early on during pregnancy. At what level could these factors or barriers have an effect? Jasleen started to think about these factors and barriers.

### **Factors and Barriers Effecting the Delivery, Access, and Utilization of Maternal Health Care Services**

There are several factors women face when accessing and utilizing maternal health care services. These include, but are not limited to:

- Lack of education (i.e., mother’s and husband’s education level);
- Lack of decision-making authority (i.e., women’s authority and autonomy);
- Socioeconomic barriers (i.e., low household living standards, low household income, no insurance coverage);
- Limited access to healthcare facilities (i.e., transportation);
- Geographical location (i.e., distance to health care facilities); and
- Lack or shortage of trained and skilled health care professionals (i.e., capacity and knowledge of skilled health care professionals).

In Mali, the adult literacy rate is 26% (Canadian Red Cross, 2014). Based on the Demographic and Health Survey of Mali (DHSM) conducted in 2001, nearly three quarters of women aged 15-49 have had no education (The DHS Program, 2001). Moreover, 77% of women over six have never attended high school, and less than 2% of women have completed the primary level schooling (The DHS Program, 2001). Given this lack of education, it is likely that Malian women are unaware of the negative impacts of not going for routine antenatal care visits. This also impacts their authority and autonomy to make their own decisions. In Mali, husbands are the principle decision makers in households when it comes to women’s health, especially on matters related to seeking maternal health care for complications that might arise during pregnancy (Gage, 2007). This also can be limited by not having adequate transportation. Having transport services available to women is important for maternal survival (Traore et al., 2014). Transport support systems should be developed to provide women access to first-level facilities and to facilities where there are trained health care professionals in emergency obstetric and neonatal care (EmONC) (Traore et al., 2014). However, difficulty arises when women live in remote rural areas where poor road conditions do not allow for easy access in

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and out of the community. In Mali, the nearest health centre is 15km away for 88% of the population (The World Bank, 2011). Accessing health care services using roads in poor conditions can be a major barrier for women in these communities. It can also be very difficult to travel to and from the health care facilities when women in these communities also have other obligations to their families. Though Mali has a four-level health system, there is still a shortage of trained and skilled health care professionals (Traore et al., 2014). Additionally, the knowledge and skills required by health care professionals does not always meet the standards needed in communities given the high maternal mortality rates in Africa (Traore et al., 2014). Thus, another reason why women might be reluctant to travel long distances to visit a health care provider is because of the shortage in health care professionals and not knowing whether a professional will be available.

As Jasleen read the last document illustrating the maternal health problem in Mali, she wondered: if one of the partnering organizations wanted to further improve the maternal health of women and girls in Mali, what interventions, programs, and activities would they plan and implement? And how would this be illustrated in a model or framework?

### WHAT TO THINK ABOUT

#### **Next Steps: Applying the Concepts**

*“Only one thing registers on the subconscious mind: repetitive application – practice. What you practice is what you manifest”*

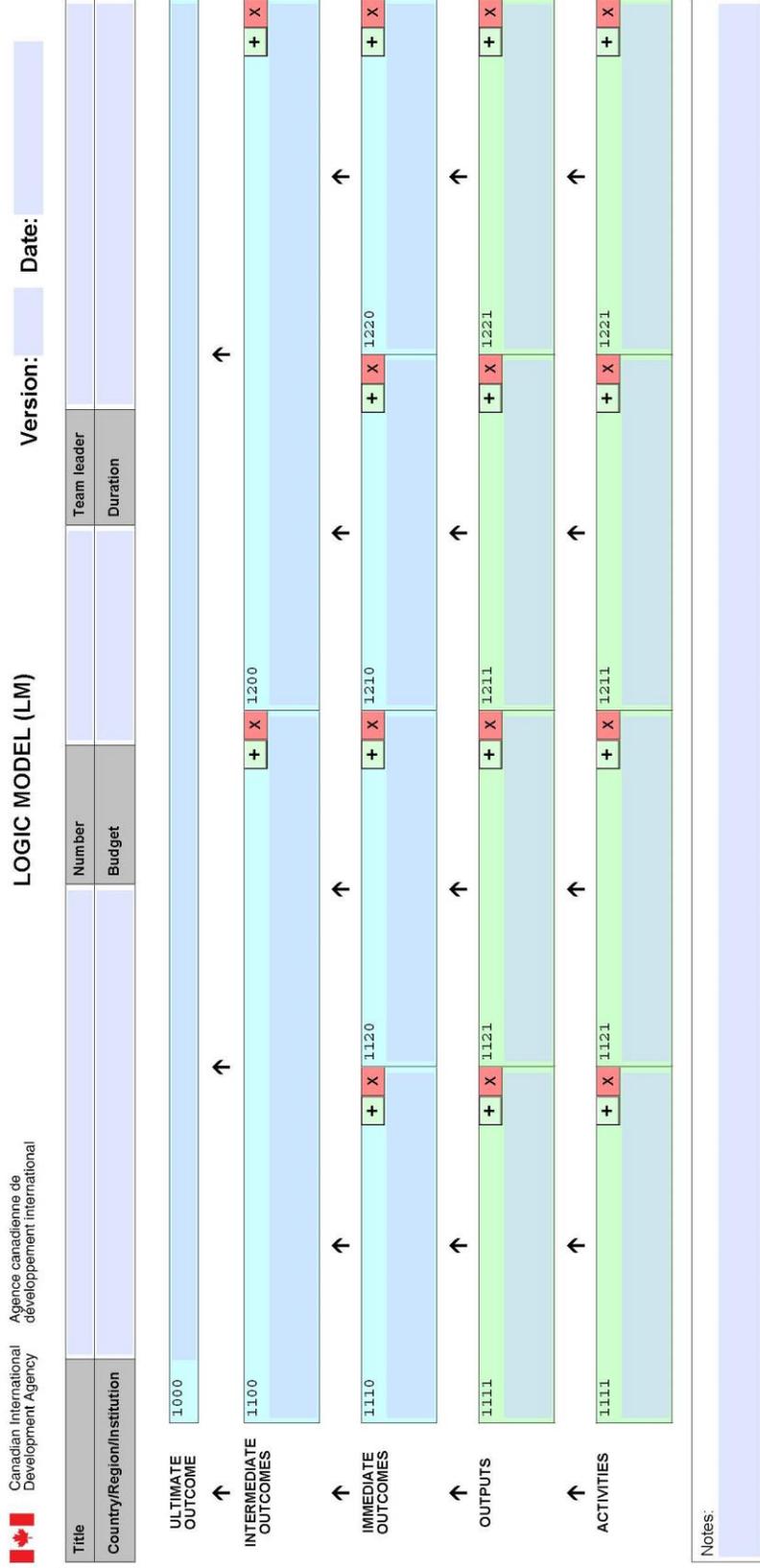
– Fay Weldon

Jasleen had received an invitation to watch the “Saving Every Woman, Every Child: Within Arms Reach Summit” which was being held in Toronto, Ontario from May 28 to 30th of 2014. She was excited! She really wanted to see what the next steps were for Canada in moving towards ending maternal and child deaths globally beyond 2015. After all, Canada had invested in the Muskoka Initiative, to reach MDGs 4 and 5 by 2015. As Jasleen sat at the atrium at the Hospital for Sick Children watching the final days of the summit, Prime Minister Stephen Harper made an announcement that Canada would continue to invest and commit to supporting global efforts in ending maternal and child deaths beyond 2015 to 2020 by investing another \$3.5 billion into the Muskoka Initiative (World Health Organization: The Partnership for Maternal, Newborn and Child Health, 2014e). This was an announcement that came as a big surprise to many. It was five years ago that Prime Minister Stephen Harper had laid the foundation to assist developing countries in reaching the MDG goals 4 and 5 by 2015 and now he had committed another five years.

Jasleen started to think! If new funding was available for MNCH beyond 2015, and organizations would be applying for new funding, how would Jasleen develop a conceptual framework for programs and interventions on maternal health in Mali? What theory or strategy would she base the interventions on? Were there factors or variables that might sway the effect of the interventions in a positive or negative direction? Even after looking at the bigger picture globally and taking a closer look at the maternal health situation in Mali, how would she apply what she had just learned? What interventions or programs would she need to think about to work towards improving maternal health and reducing maternal mortality?

# Understanding and Developing Conceptual Frameworks and Causal Models in Maternal and Child Health Programming

## EXHIBIT 1 Logic Model Framework used by DFATD



Please access the [Guide on RBM Tools at CIDA](#) to help you fill out this document

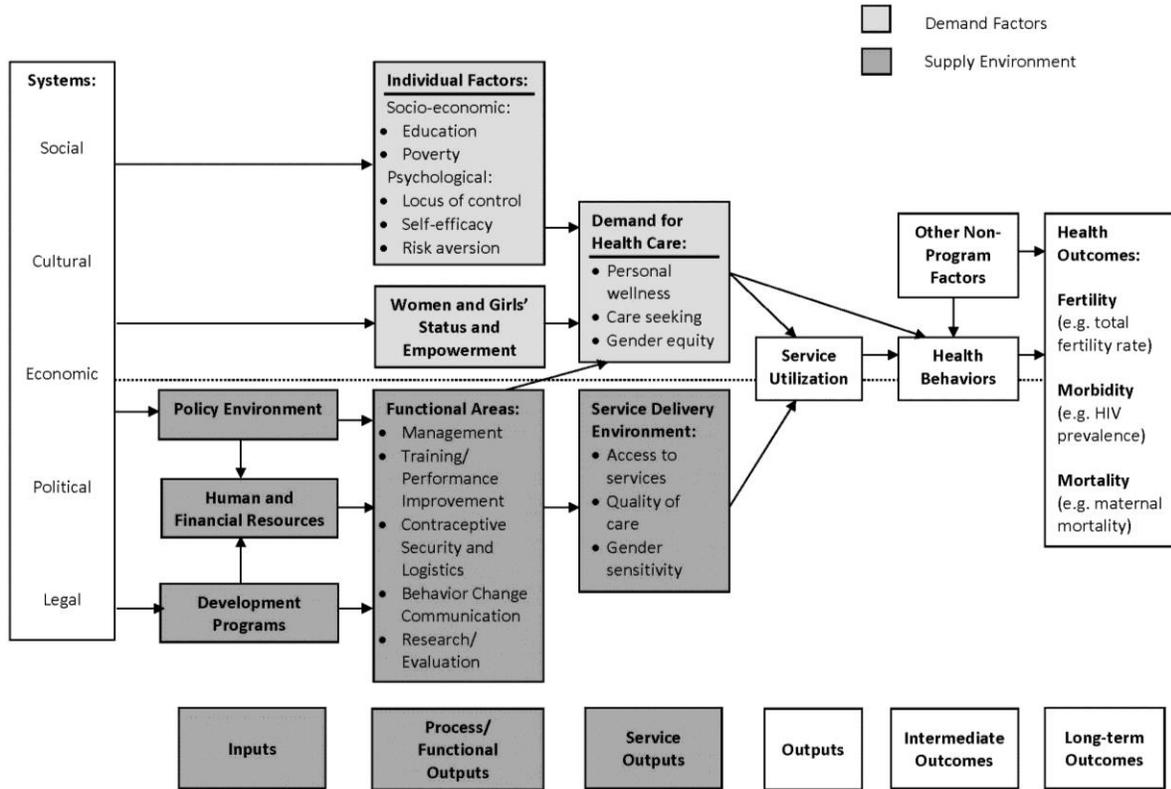
ACDI-CIDA 4031-03E (2012-12-19) PDF



Source: Government of Canada: Foreign Affairs, and Trade Development Trade, 2015b.

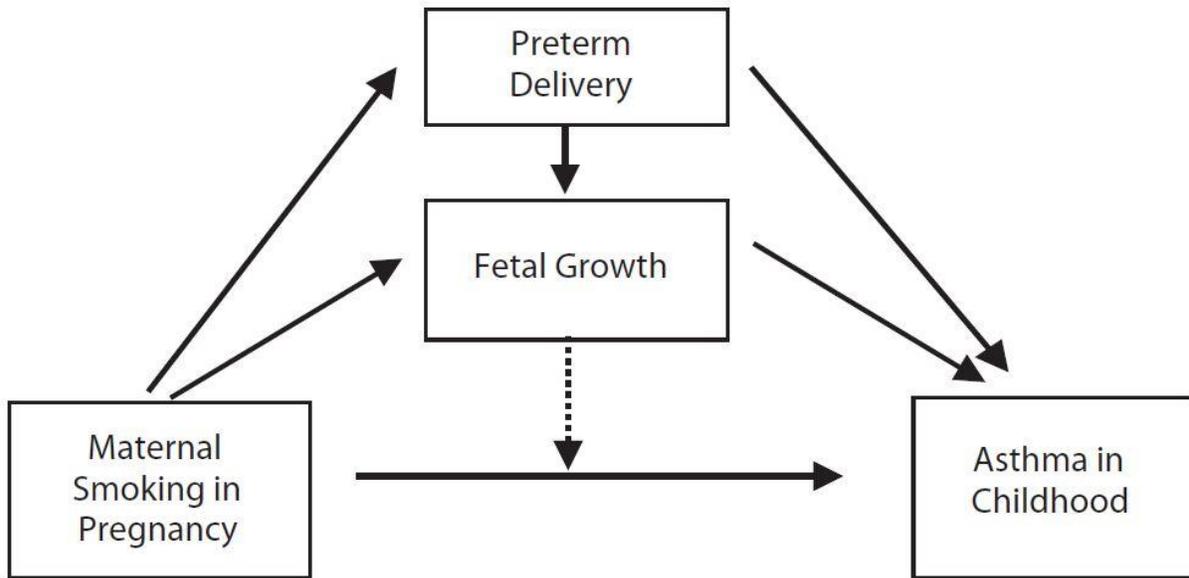
# Understanding and Developing Conceptual Frameworks and Causal Models in Maternal and Child Health Programming

## EXHIBIT 2 A Conceptual Framework



Source: USAID, n.d.

**EXHIBIT 3**  
**A Causal Model (path analysis)**



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**FIGURE 1—The hypothesized causal model of the effect of maternal smoking in pregnancy on childhood risk of asthma. Solid arrows indicate a causal relationship; the broken arrow indicates effect modification.**

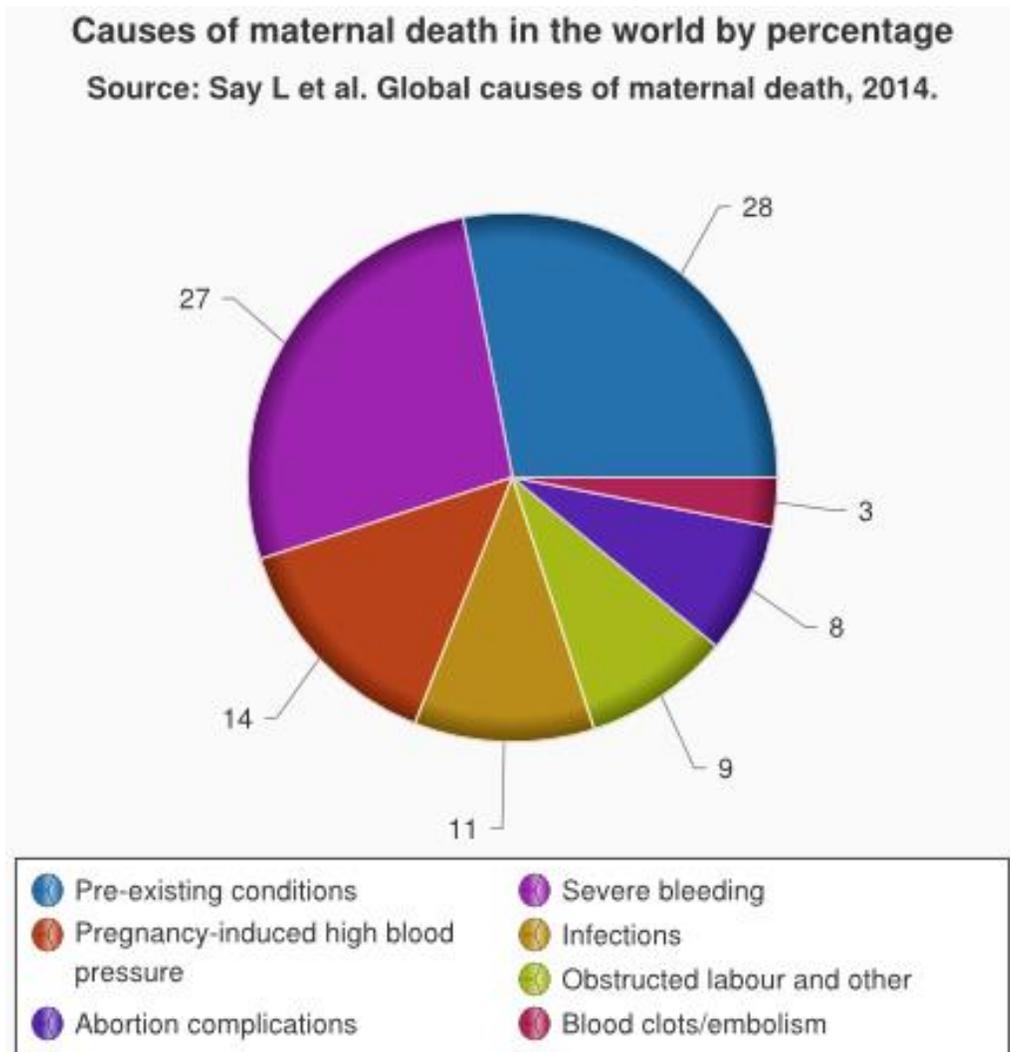
Source: Jaakkola & Gissler, 2004 (by permission of The Sheridan Press).

EXHIBIT 4  
A List of the Eight Millennium Development Goals (MDGs)



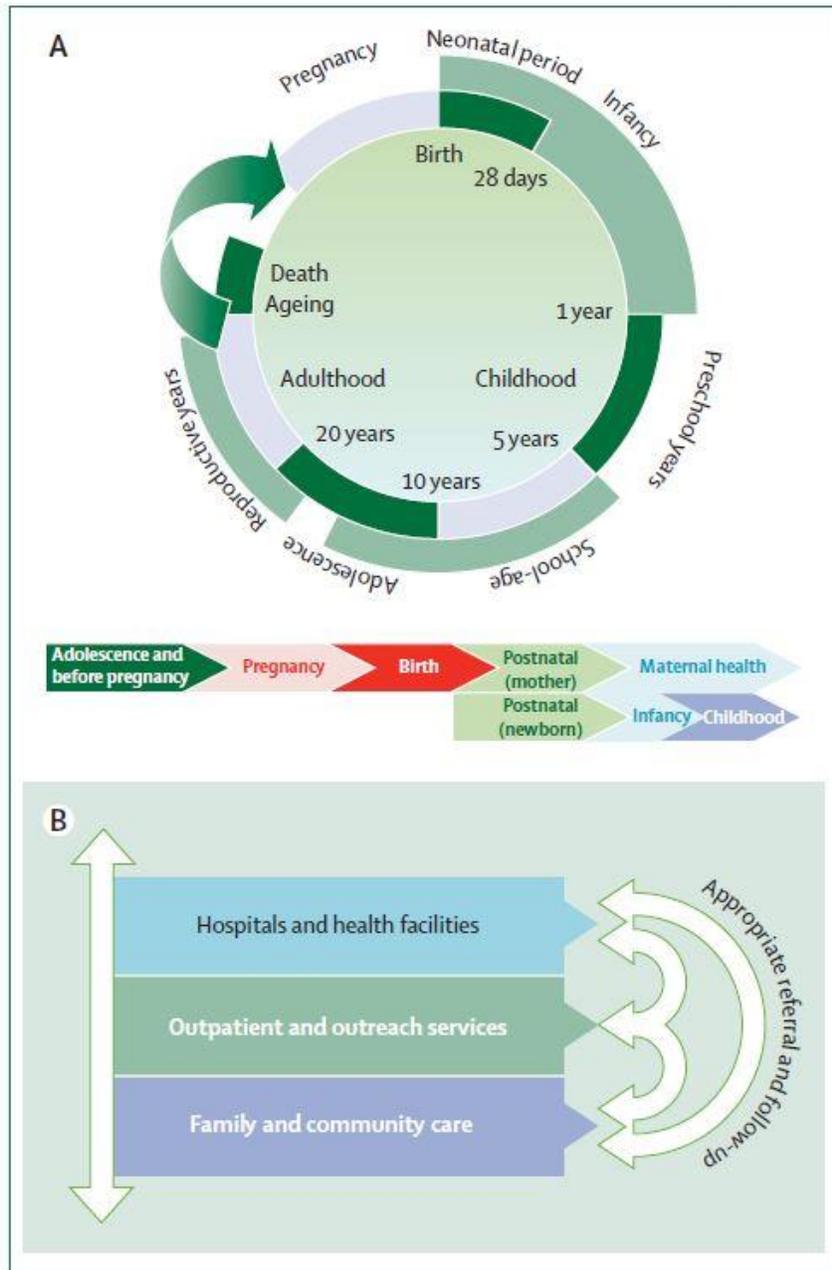
Source: United Nations, 2015.

**EXHIBIT 5**  
**The Global Causes of Maternal Death**



Source: WHO, 2014.

**EXHIBIT 6**  
**A Diagram of the Continuum of Care Strategy**

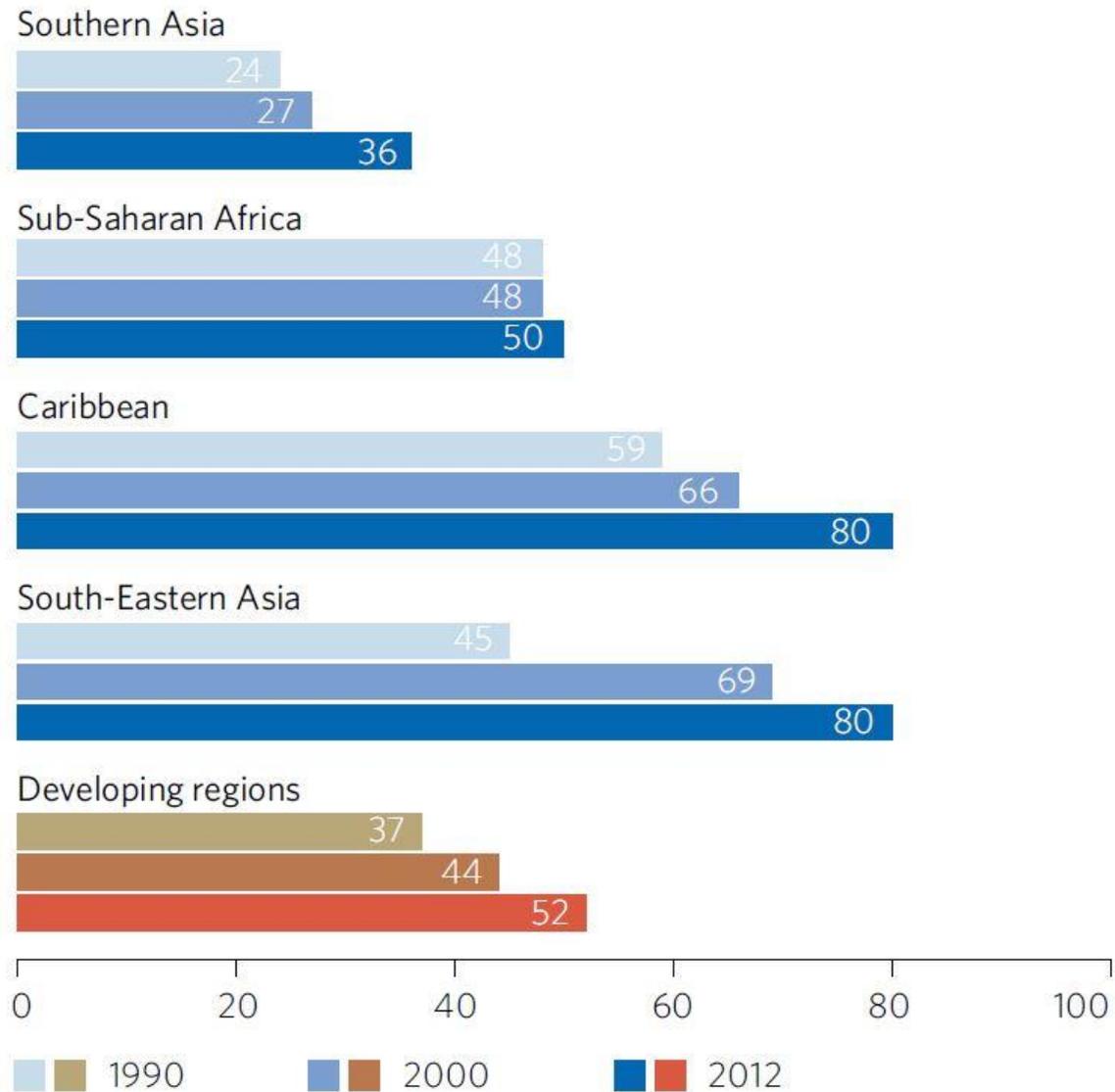


**Figure 1: Continuum of care**  
Connecting care during the lifecycle (A) and at places of caregiving (B). Adapted from Partnership for Maternal, Newborn and Child Health, with permission.<sup>45</sup>

Source: Kerber et. al., 2007 (by permission of Lancet Publishing Group via Copyright Clearance Center).

EXHIBIT 7

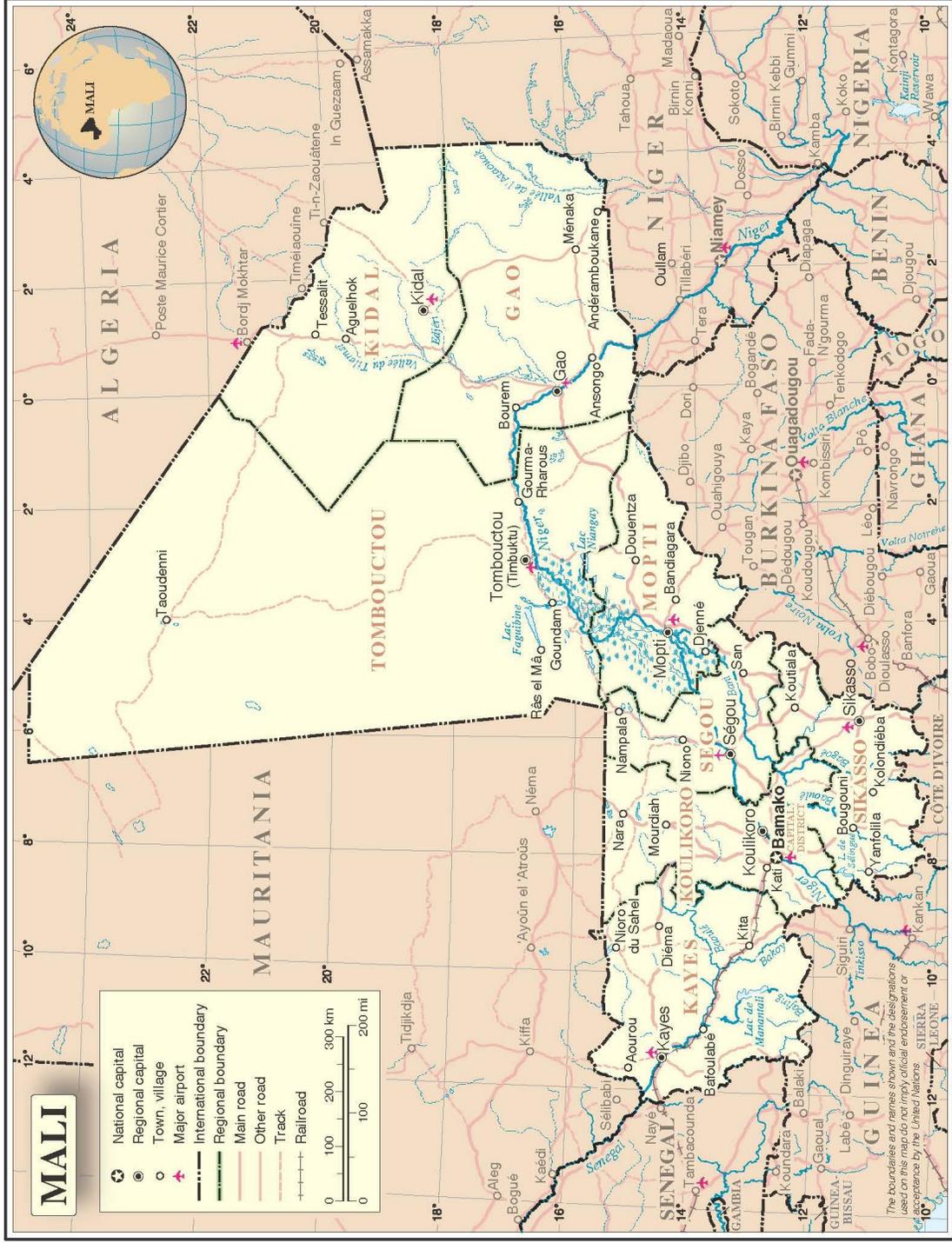
**Proportion of women aged 15–49 attended  
four or more times by any provider during pregnancy,  
1990, 2000 and 2012 (Percentage)**



Source: UN, 2014.

# Understanding and Developing Conceptual Frameworks and Causal Models in Maternal and Child Health Programming

**EXHIBIT 8**  
**Map of Mali**

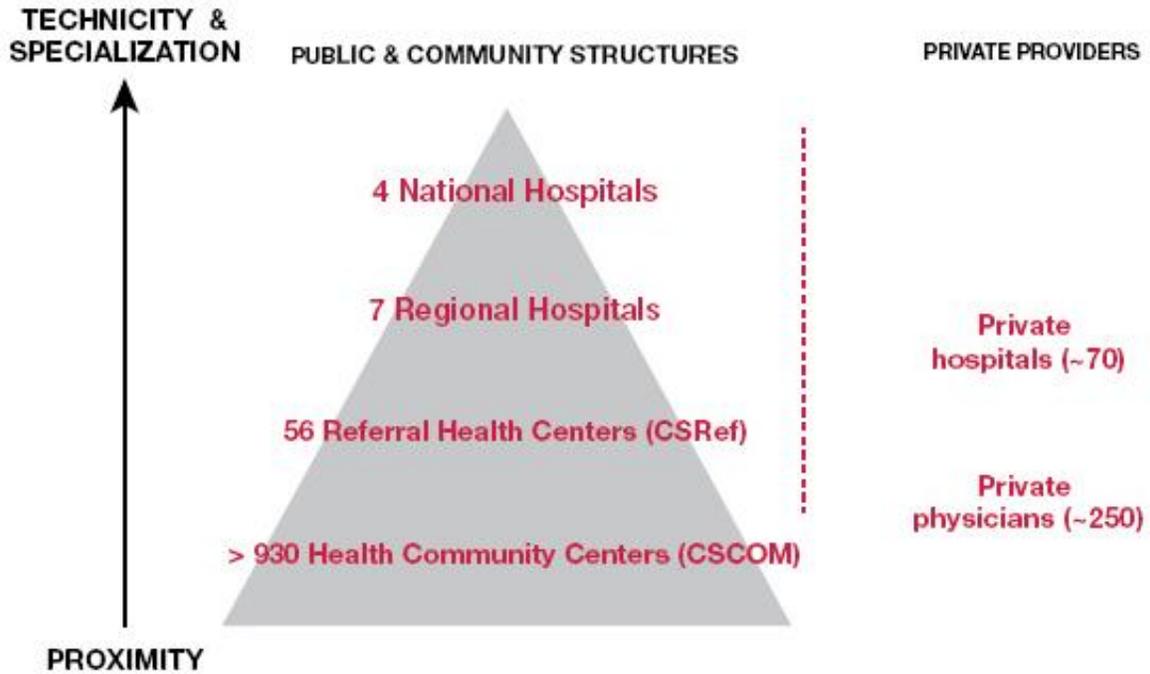


Department of Field Support  
Cartographic Section

Map No. 4231 Rev. 3 UNITED NATIONS  
March 2013

Source: UN, 2013.

**EXHIBIT 9**  
**The Health System Structure in Mali**



- CSCOM are structures managed by community associations, that fulfill a public service mission
- CSRef and hospitals are fully public structures

Source: Clerck, Roos-Weil, Carpentier, & Clerck, 2012 (by permission of Creative Commons Attribution 3.0 license).

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## INSTRUCTOR GUIDANCE

### Understanding and Developing Conceptual Frameworks and Causal Models in Maternal and Child Health Programming

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#### BACKGROUND

This case attempts to help students understand the various terminologies (“frameworks”, “pathways”, “models”, etc.) used by organizations in planning, implementing, and evaluating programs and interventions. It is based on the work done by the Center for Global Health at The Hospital for Sick Children in Toronto on the Knowledge Management Initiative (KMI) of the Muskoka Initiative Consortium (MIC). The case starts by reprising the Muskoka I and II Initiatives, and then focuses on the global context before narrowing down to programs and interventions for maternal health in Mali.

#### OBJECTIVES

1. Understand conceptual frameworks and models (e.g. logic models, structural equation models, directed acyclic graphs, etc.), with an emphasis on the similarities and differences.
2. Understand the usability of a framework when planning, implementing, and evaluating programs or interventions in maternal health care.
3. To develop a framework to improve maternal health care in Mali.

#### DISCUSSION QUESTIONS

1. What are conceptual frameworks?
  - a. What are different types of such frameworks?
  - b. What are similarities and differences between possible frameworks?
2. What is the problem or situation with respect to maternal health in Mali?
  - a. Why does the problem exist? What are some issues creating this problem?
  - b. What is the long term goal?
  - c. What needs to be changed? What are some immediate (short term) and intermediate (medium term) outcomes?
  - d. What specific actions and activities can affect change at the immediate outcome level?
  - e. Are there any other factors that need to be considered that might have an effect on the outcomes and activities?
  - f. How are you going to measure outcomes? What indicators will you use to assess the effectiveness of the program at the immediate, intermediate, and ultimate outcome level?

#### KEYWORDS

Conceptual framework; maternal health; Mali; program evaluation.