

**Reducing Maternal Mortality:**  
*Strengthening the World Bank  
Response*

June 2009



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## Abstract

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Of all the MDGs, the least progress has been made on MDG 5—reducing maternal mortality by three-quarters by 2015. Maternal mortality also comes with a high cost to the rest of society. Costs are both direct, involving mostly the cost of health care (either to families or to the health system), and indirect, in the form of income and productivity lost for both the mother and the family (child health, growth and education all suffer when mothers die).

Health experts agree that the interventions needed to avert much of the burden of maternal and perinatal death and disability are known. However, it has become increasingly clear that the success of these interventions depends on the capacity of the health system in the country to deliver quality care as well as factors in other sectors such as girls education, good roads, and available transport for emergencies. A review of key supply- and demand-side determinants of persistent high maternal mortality highlights the importance of health systems capacity to deliver these key interven-

tions effectively at the community level, while ensuring that women seek care when they most need it.

Of the 60 countries with high maternal mortality, during the period from July 1, 1997, to June 30, 2008, the Bank financed 104 health projects with population and reproductive components in 44 countries, to the tune of US\$ 4.7 billion. In order that monitoring and evaluation (M&E) of World Bank maternal health projects be effective, appropriate indicators must be selected, realistic targets must be set, and both baseline and end-of-project data must be collected. All these are necessary in order to measure and evaluate the achievement of project objectives. Moreover, there are several strategies in which the Bank could take a leadership role, given its global presence and financial resources. These are described in detail in this paper.

**Keywords:** maternal mortality, MDG, monitoring and evaluation, indicators, reproductive health

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## Abbreviations

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AAA	Analytic and Advisory Activity	MENA	Middle East and North Africa region
AFR	African region	MDG	Millennium Development Goal
CAS	Country Assistance Strategy	M&E	Monitoring and evaluation
CCT	Conditional Cash Transfer	MICS	Multiple Indicator Cluster Survey
CPR	Contraceptive prevalence rate	MMR	Maternal mortality ratio
CPS	Country Partnership Strategy	NGO	Nongovernmental organization
DEC	Development Economics	NRHM	National Rural Health Mission
DHS	Demographic and Health Surveys	PAD	Project Appraisal Documents
EAP	East Asia and Pacific region	Pop/RH	Population and Reproductive Health
EmONC	Emergency Obstetric and Newborn Care	PREM	Poverty Reduction and Economic Management Network
HDNHE	HNP Team of the Human Development Network, World Bank	PRSC	Poverty reduction support credit
HMIS	Health Management Information System	RBF	Results-Based Financing
HNP	Health, Nutrition and Population	SAR	South Asia region
ISN	Interim Strategy Note	STC	Short-term consultant
JAS	Joint Assistance Strategy	SWAp	Sector-wide approach
JISN	Joint Interim Strategy Note	TFR	Total fertility rate
JSY	Janani Suraksha Yojana	TTL	Task team leader
LCR	Latin America and Caribbean region	UNFPA	United Nations Population Fund
MBB	Marginal Budgeting for Bottlenecks	UNICEF	United Nations Children's Fund
		WHO	World Health Organization



## Part I

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Of all the Millennium Development Goals, the least progress has been made on goal Number Five (MDG 5): ***Reducing maternal mortality by three-quarters by the year 2015***. Every day, about 1,500 women across the globe die because of complications during pregnancy or childbirth, and 98 percent of these deaths, half a million annually, occur in developing countries. Another 10 to 20 million women develop physical or mental disabilities every year as a result of complicated pregnancies and deliveries.

Sub-Saharan Africa leads this death toll, accounting for 50 percent of all maternal deaths worldwide, and South Asia accounts for another 35 percent (United Nations. 2000. United Nations Millennium Declaration). In addition to the tragedy of these preventable deaths, high maternal mortality comes with a high cost to the rest of society. Costs are both direct, including the cost of health care (either to families or to the health system), and indirect, in the form of income and productivity lost for both the mother and the family (child health, growth, and education all suffer when mothers die) (Gill et al. 2007).

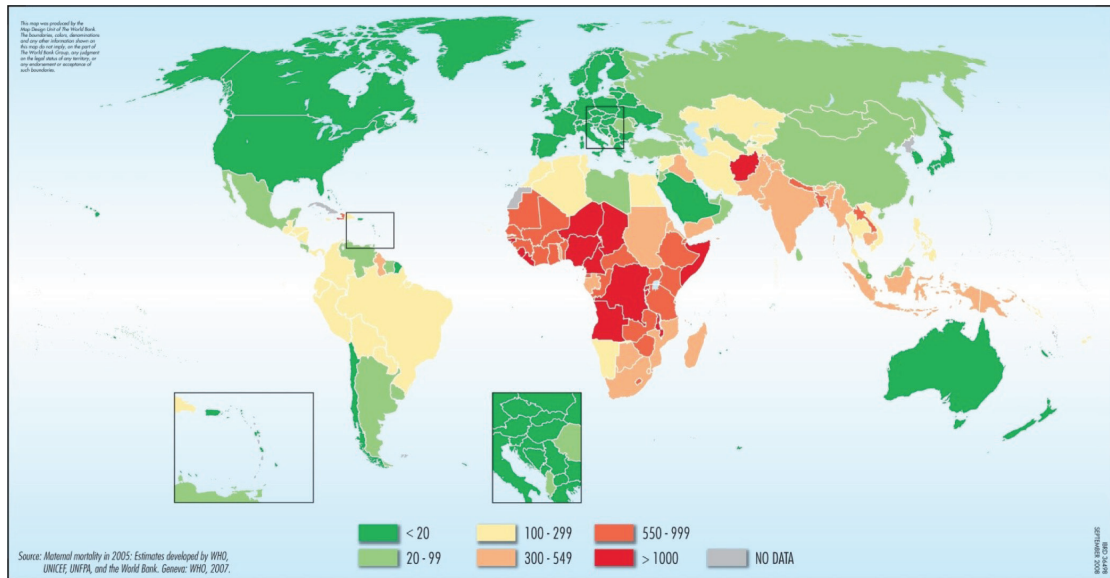
The recent progress report on the subject, *Countdown to 2015: Tracking Progress in Maternal, Newborn & Child Survival*, defines as “high” any maternal mortality ratio (MMR) of 300 or more maternal deaths per 100,000 live births. Currently, 60 countries have MMR levels this high (UNICEF 2008).

The regions (excluding high-income countries) that had the highest aggregate MMR in 2005 are Sub-Saharan Africa (900 deaths per 100,000 live births) and South Asia (500). These stand in extreme contrast to the average rate among high-income countries, which was just 9 maternal deaths per 100,000 live births in that same year. Worldwide, the average maternal mortality ratio has declined at a rate of less than one percent per year between 1990 and 2005, according to the 2007 WHO/UNICEF/UNFPA/World Bank report on maternal mortality (WHO 2007).

Of all health indicators, maternal mortality reveals the greatest gap between rich and poor women, both between and within countries. Health experts agree that the interventions needed to avert much of the burden of maternal and perinatal death and disability are known. However, it has become increasingly clear that the success of these interventions depends on the capacity of the health system in each country to deliver quality care as well as factors in other sectors such as girls’ education, good roads, and available transport for emergencies.

Both maternal and infant mortality are considered sensitive indicators of whether or not the health system as a whole is functioning effectively, and they can indicate general progress on other health indicators as well (Goodburn et al. 2001). Monitoring and evaluating health projects aimed at improving maternal health is nevertheless challenging in

**Figure 1 | Global Map Depiction of Maternal Mortality Ratios, 2005**



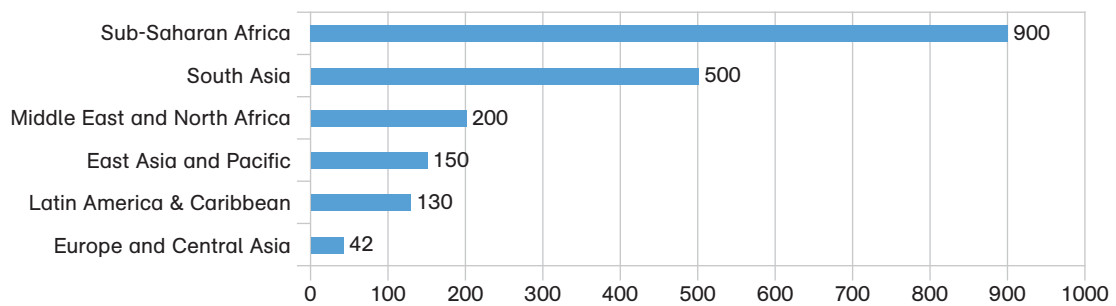
Source: Map by the World Bank, based on data from WHO/UNICEF/UNFPA/World Bank 2007.  
 Note: The regions exclude high income countries.

itself. As will be discussed further in this report, achieving this requires that appropriate indicators first be selected, based on the results a given project aims to achieve. Realistic targets must be set, and both baseline and end-of-project data must be collected to measure and evaluate whether projects have achieved their objectives. (See Part II, Section 1, for more detail).

**In this Report We Answer the Following Questions:**

➔ *What are the success stories from countries where maternal mortality has been significantly reduced? Illustrative stories for four countries are told in the four boxes on the following pages 3–7.*

**Figure 2 | Maternal Mortality Ratio by World Bank Regions, 2005**



Source: Map by the World Bank, based on data from WHO/UNICEF/UNFPA/World Bank 2007.

- *How could the monitoring and evaluation of programs be improved? What are the appropriate indicators to measure progress in the same?* These details are covered in Part II (Section 1, Page 10).
- *What are the constraints to improving maternal health? What are successful interventions that have addressed these determinants?* These questions are answered in the next section, with further detail in Part II (Section 2, Page 15).
- *How have World Bank projects supported maternal health in countries with high maternal mortality ratios between 1997 and 2008?* This is answered in detail in Part II (Section 3, Page 26).
- *How much will it cost?* Estimated costs for improving maternal health are shown in Part II (Section 4, Page 35).
- *What strategy should the Bank pursue for a cross-sectoral engagement to address maternal mortality?* This is answered at the end of this overview, and in further detail in Part II (Section 5, Page 38).

## **Addressing the Key Determinants of Maternal Mortality**

The essential package of interventions needed for averting maternal mortality is known. The challenge lies in ensuring that this package is delivered at a sufficient scale and with sufficient quality that it can have a significant impact. A review of key supply- and demand-side determinants of persistent high maternal mortality highlights the importance of health systems' capacity to deliver these key interventions effectively at the community level, while ensuring that women seek care when they most need it. This section looks at a few key determinants

and how they have been addressed successfully in varied settings. The country examples cited in the boxed summaries here can provide useful lessons for countries with high maternal mortality.

### **Long-term sustained policy and financial commitment to improve maternal health outcomes**

Two kinds of commitment are necessary to improve maternal health outcomes: long-term sustained policy commitment and financial commitment. Of the two, policy commitment is more crucial (see Box 1). If long-term commitment to delivering the essential package is not consistent, key steps will be missed and the overall monitoring of progress will remain weak. Sri Lanka provides a textbook case of how the government of a low-income country, even with modest financial resources, can have a huge impact on reducing maternal mortality by consistently implementing a high-quality program and focusing on strengthening the health system.

### **Strengthening health systems to effectively deliver the Essential Package**

Four key actions are necessary in order to strengthen the health system sufficiently to support the essential package. First, maternal health interventions must be *integrated* into the larger health system. They should not be a stand-alone program but instead benefit from an integrated approach. (Box 2 illustrates the case of Egypt, where strengthening Family Planning and obstetric care contributed significantly to declines in MMR.) Second, action must be taken to ensure that the pool of

### Box 1 | The Sri Lanka Story

**Sri Lanka** is a low-income country which has successfully reduced maternal mortality. Starting with a maternal mortality ratio of 1,056 maternal deaths per 100,000 live births in 1947, by 1996 it was experiencing just 24 maternal deaths per 100,000 live births. During roughly the same period, the proportion of births with skilled birth attendants increased from 27 percent in 1940 to 89 percent in 1995. The following key actions helped to achieve this dramatic reduction in MMR:

- A vast network of health infrastructure extending into rural areas was established by the 1950s to make health services more accessible. This included blood transfusion services. Services were also provided free of charge.
- Large cadres of professional midwives were trained and deployed both at the health facilities and in communities to attend to home deliveries. Additionally, midwives visited pregnant women at home and encouraged them to seek antenatal care and assistance during delivery.
- Family planning was integrated into maternal and child health services and offered as part of the basic package of services.
- A strong referral system ensured timely access to basic and comprehensive emergency obstetric and newborn care (EmONC) when necessary, backed by the availability of ambulances and telephones.
- Steps were taken to ensure that data needed to track progress was made available. Civil registration systems and health management information systems (HMIS) were established and strengthened. Maternal death reviews were instituted in the 1950s to identify the factors contributing to maternal deaths, enabling corrective actions. These reviews also allowed issues of quality of care to be addressed.

**Conclusion:** The Sri Lankan government's commitment, together with appropriate interventions, led to a dramatic reduction in maternal mortality. Given that public expenditure on health care was low (on average less than 2 percent of GDP) during the 1950–1999 period, this reduction cannot be attributed to a huge investment of funds. This indicates that other low-income countries with high maternal mortality could also reduce maternal mortality with political commitment and the appropriate interventions.

Source: Padmanathan et al. 2003.

available skilled health personnel is adequate to provide basic and comprehensive EmONC as required; these personnel include not only doctors but also midwives and nurses with midwifery skills, and anesthetists.

Third, staff must be trained in referral protocols, particularly outreach staff. This helps ensure that women at risk receive emergency obstetric care in a timely manner. And fourth, a strong monitoring system must be put in place to ensure (i) that the system responds effectively to specific implementation challenges; and (ii) that quality of care is enhanced

### *The importance of Cross-Sectoral Approach*

As has been demonstrated by the example of Sri Lanka as well as other examples from Malaysia (see Box 3), Indonesia, and elsewhere, a cross-sectoral approach can have important positive impacts on reducing maternal mortality. For example, an analysis of declines in both infant and maternal mortality rates in Sri Lanka and Malaysia shows that they can be attributed to a combination of interventions, including:

## Box 2 | The Egypt Story

In 1992–93 the maternal mortality ratio in **Egypt** was 174 maternal deaths per 100,000 live births. By 2000 using a combination of strategies, it had dropped to less than half that figure at 84 maternal deaths per 100,000 live births:

- The proportion of all deliveries that occurred with skilled health personnel increased from 40.7 percent in 1992 to 60.9 percent in 2000.
- Health facilities were upgraded and equipped, health personnel were trained and treatment protocols for obstetric complications were developed and implemented.
- Greater access to family planning resulted in increased use of contraceptives, which rose from 47.1 percent in 1992 to 56.1 percent in 2000, thus reducing the total number of pregnancies, including higher-risk and unwanted pregnancies.
- Increase in women's secondary education (from 13 percent in 1992 to 22 percent in 2000) might have further contributed to the decline in maternal mortality
- Mass media campaigns were carried out, aimed at educating women and their families to access maternal health services appropriately.

Source: Campbell et al. 2005.

## Box 3 | The Malaysia Story

**Malaysia** is a middle-income country whose total public expenditure on health services was modest between 1950 and 1999 (averaging of 1.79 percent of GDP), yet during that period its maternal mortality ratio declined rapidly. The ratio had already fallen between 1933 and 1950 from 1,085 maternal deaths (per 100,000 live births) to 534 maternal deaths, and then dropped to 19 maternal deaths by 1997. The proportion births attended by skilled health personnel grew from 30 percent in 1949 to over 90 percent in 1995.

- The goal of the maternal health program was to ensure that professional midwives (skilled health personnel) attended to deliveries. Toward this end, there was massive training of competent professional midwives who were properly supervised. In the rural areas, midwives conducted home visits, delivered births at home, and referred women with complications to the health facilities. Efforts were made to reach underserved populations and minority groups.
- From 1957 to 1975, the program focused on assisting with home deliveries in rural areas, and from 1976 to 1989 the focus shifted to health facility-based deliveries to allow prompt treatment of obstetric complications.
- In addition to the expansion of health services in rural areas, demand for services was generated through community mobilization coupled with virtually free services.
- The referral systems were strengthened and quality of care was emphasized.
- Maternal death reviews were instituted and midwives carried out active case finding to identify maternal deaths in the communities. Similarly, strengthened civil registration allowed tracking of progress.
- The government took steps to improve maternal health as part of a deliberate policy and program for rural development, including expansion of rural health services, improvement of basic education and education for girls, development of sanitation and water supply, and the extension of road networks in rural areas.

**Conclusion:** Integrated rural development, together with key maternal health interventions such as development of a professional midwifery cadre, enabled a majority of pregnant women to receive delivery services at home and, with time, at equipped and well functioning health facilities.

Source: Padmanathan et al. 2003.

- strengthening of maternal and child welfare services
- expansion of education
- provision of safe drinking water
- more sanitary methods of sewage disposal, and
- improvement of nutrition levels.

Evidence also suggests that women who participate in micro-credit programs exhibit higher levels of knowledge about health care and are more likely to completely immunize their children (Oomman et al. 2003). Roads and transportation also greatly determine women's access to emergency care, particularly emergency obstetric care.

### ***Involving the private sector in service delivery***

The private sector has often been a primary source for health care, especially in rural communities. Private sector service providers include not only private hospitals or clinics but also traditional healers and traditional birth attendants. Several initiatives using the private sector as the health care provider have been successful globally in addressing this reality. Recognizing this, in 1995 USAID launched a project in Haiti that created supply-side incentives for service providers to deliver basic health services (Eichler et al. 2007). The services were free to patients.

The project began by contracting NGOs to deliver health services and reimbursing them for documented expenditures or inputs. In 1999, the strategy was changed to provide part payments on attaining performance targets or outputs. This project also provided technical assistance to the NGOs, along with opportunities to participate in an NGO network and

other cross-fertilization activities. Panel regression results suggest that the new payment incentives were responsible for considerable improvements in both immunization coverage and attended deliveries. The Chiranjeevi Scheme in Gujarat, India (see Box 4) demonstrates how this can be done effectively to improve access to institutional delivery with the objective of reducing maternal mortality while providing financial protection to poor families.

### ***Increasing the Demand for Services***

Poor and vulnerable groups need to be properly mobilized through effective incentive strategies if they are to take advantage of programs designed for their benefit. One successful approach that has been used to reduce poverty and to increase food consumption, school attendance, and use of preventive health care services is to increase demand-side incentives to individuals through Conditional Cash Transfers (CCTs). Since 1997, several countries in Latin America have implemented and evaluated CCT programs that have health and nutrition components. The core of these programs is based on encouraging poor mothers to seek preventive health services and attend health education talks by providing them with cash incentives for their health-seeking behavior. Evaluations of the impact of CCT have provided unambiguous evidence that such financial incentives do increase the utilization of key services by the poor (Glassman et al. 2007). (See Section 2 for more detail.)

### ***What the World Bank Can Do to Promote a Cross-Sectoral Response***

Maternal mortality is not an isolated phenomenon but is intimately linked with a variety

#### Box 4 | The Chiranjeevi Health Financing Scheme

**The Chiranjeevi Scheme** implemented by the Government of Gujarat aims to improve access to institutional delivery for poor families. In Gujarat, reliance on the private sector for deliveries is widespread, since the government health network cannot always ensure availability of services, especially in remote rural areas. The Chiranjeevi Scheme therefore was designed to provide financial protection to families seeking private maternal healthcare, including the following elements:

- The scheme covers families' out-of-pocket costs incurred for travel to reach healthcare facilities.
- It also provides for financial support to the accompanying person for loss of wages.
- The scheme involves the empanelment of private medical practitioners (mainly gynecologists) to provide maternity health services. These providers are reimbursed at a fixed rate for deliveries, either normal or Caesarean.

Preliminary analysis of household-level data from Chiranjeevi beneficiaries and non-beneficiaries show that partnering with the private sector has considerably reduced the costs of care to the poor.

- Most of the Chiranjeevi users have income levels less than Rs. 12,000 (about US\$248) per annum, indicating that the scheme is able to target poor families.
- The average expenditure incurred for both medicine and transportation by non-users (of the scheme) on their most recent delivery at a private facility was Rs. 4000, while the average expenditure incurred by a Chiranjeevi beneficiary on their most recent delivery was Rs. 727.

Source: Ramesh et al. 2007.

of causes and effects. It not only concerns the health sector, although that is a key actor; it is also affected by other sectors, including nutrition, education, social justice/women's empowerment, labor/employment, and others. Data overwhelmingly show, for example, (i) that anemic women are more likely to have poor maternal outcomes; hence, nutrition is an important related sector; (ii) that educated women are more likely to access antenatal care and other health services and therefore have better health outcomes; hence, female education is an important related sector; and (iii) that working women have fewer children and lower mortality rates for a variety of reasons; hence, female workforce participation is an important related sector. Mechanisms need to be put in place that can bring these sectors together under a committed leadership,

making prevention of maternal mortality a central issue.

#### ***What could the Bank do to promote such cross-sectoral synergy and coordination?***

The Bank could take a leadership role in selected strategies, given its global presence and financial resources. These are described here.

#### ***Orienting governments/clients to newly available information and approaches***

Large-scale global research efforts have been seeking to identify the cost-effectiveness of various interventions. The World Bank's Disease Control Priorities Project-2 was one such effort, which attempted to categorize interventions on the basis of their cost-effectiveness. Another research effort, the High Level Task

Force's Working Group 1, has also estimated the costs of health-system support needed to accelerate the achievement of the Millennium Development Goals for health in low-income countries. The resulting information is now available to the global public health community. The Bank can use this information to (i) raise knowledge and awareness on such issues at the country level; (ii) build consensus among key stakeholders for intervention strategies; and (iii) advocate for decisions regarding the allocation of scarce resources.

#### *Providing evidence on the cross-sectoral dimensions of reducing maternal mortality*

As described earlier, much of the success of maternal health programs in both Sri Lanka and Malaysia, as well as in Kerala (India), can also be attributed to a combination of non-health interventions.

#### *Making use of information from ongoing initiatives aimed at evaluating maternal health*

These initiatives include SIEF (Spanish Trust Fund for Impact Evaluation and Results-based Management in Human Development Sectors), the Health Contracting/Performance and Conditional Cash Transfers clusters, and the Results-based Financing (RBF) pilots. The evidence they offer can be leveraged with governments to initiate the dialogue on cross-sectoral approaches and convergence.

#### *Including a wide range of constituents*

Policies are most likely to succeed if a wide range of constituencies—such as senior policy-makers, program implementers, civil society, grass-roots organizers, service providers,

and client representatives—are all involved in the implementation and the dialogue affecting policy formulation.

#### *Expanding the use of lending instruments that promote cross-sectoral synergies*

Use of the Bank's Development Policy Operations could allow for greater dialogue with governments and encourage ownership of cross-sectoral approaches. Setting the strategic context for a cross-sectoral approach in the Country Assistance Strategy (CAS) also guides the direction in which policy reform needs to take place. Achievement of the outcomes specified in the CAS can be used as a trigger for greater support for a long-term engagement. This process also facilitates the involvement of other bilateral, multilateral, and development agencies that play a crucial role in providing financial and technical support to developing countries.

#### ***A Bank strategy for developing cross-sectoral engagement***

Recognizing that the world has made the least progress on reaching MDG 5, and recognizing the urgency and complexity of this challenge, and further, recognizing that the challenge is not necessarily technical but of one of gaining traction and finding new, multi-sectoral entry points for influencing priorities, approaches, and outcomes, the Bank should develop its own *engagement strategy* (detailed in Section 4) to support its response to improving maternal health.

This strategy would be expected to garner the support and focus of multiple stakeholders, both within the World Bank Group and elsewhere, who are on the front lines of knowledge, operations, and policy dialogue.

It would support HNP efforts to create a “community of practice” on maternal health that would in turn help pave the way for the rollout of a Population/Reproductive Health Action Plan, anticipated to be presented to the Board in December 2009. The approach would be cross-sectoral—drawing not just on colleagues in HDN, but also on those working in other networks (such as PREM and DEC)—as maternal mortality is impacted by multiple factors.

Country directors in priority countries would need to have a strong awareness of

maternal health issues and effective ways to address them, combined with a real commitment for outcomes, in order to succeed. This would become an integral part of the overall Population/Reproductive Health Action Plan. The key stakeholders would be World Bank technical and operational experts, country directors/managers, task team leaders and sector managers who are best positioned to have an impact on both the design of operations and the health system policy dialogues that will occur in key countries.

## Part II

### Section 1. Guidelines for Monitoring and Evaluation of World Bank Projects Aimed at Improving Maternal Health

The fifth Millennium Development Goal (MDG 5), which aims at improving maternal health, has two targets. Target 5a is to reduce the maternal mortality ratio (MMR) by 75 percent between 1990 and 2015. Target 5b is to achieve universal access to reproductive health by 2015 (United Nations Millennium Declaration). Box 5 presents the indicators for both Targets.

#### Box 5 | MDG 5 Goal and Targets

##### Goal: Improve maternal health

**Target 5A:** Reduce maternal mortality ratio by three quarters, between 1990 and 2015

##### Indicators

- Maternal mortality ratio
- Proportion of births attended by skilled health personnel

**Target 5B:** Achieve, by 2015, universal access to reproductive health

##### Indicators

- Adolescent birth rate
- Antenatal care coverage (at least one visit and at least four visits)
- Unmet need for family planning
- Contraceptive prevalence rate

Source: United Nations, *Millennium Development Goals Indicators*. <http://mdgs.un.org>

In order that monitoring and evaluation (M&E) of World Bank health projects aimed at improving maternal health be effective, appropriate indicators must be selected, realistic targets must be set, and both baseline and end-of-project data must be collected. All these are necessary in order to measure and evaluate the achievement of project objectives. Table 1 shows selected indicators and data sources for assessing projects and programs aimed at improving maternal health. A portion of the funds for projects should be explicitly allocated for M&E and the persons or agency responsible for M&E should be identified upfront.

#### *Selecting the indicators*

In 2007, WHO released an important report summarizing and analyzing the 2005 MMRs, the result of collaboration between WHO, UNICEF, UNFPA, and the World Bank. The report concluded that measuring the MMR accurately is generally too difficult except in countries that have complete civil registration systems with good attribution of cause of death (WHO 2007). Global health experts generally recommend that indicators be chosen for monitoring and evaluation based on a given project's specific objectives and activities. Indicators should be clearly defined, accurately measured, and reflective of the set of activities being implemented. Indicators to be avoided are those that are complex, require large sam-

### Box 6 | Types of Indicators

**Inputs** – Resources such as personnel, facilities, equipment, supplies, or funds that are used to implement the project.

**Outputs** – The immediate products or results of the activities implemented, such as the number of personnel trained, number of deliveries conducted, or number of contraceptives distributed. Outputs are measured at the program level.

**Outcomes** – The intermediate results of the activities implemented, such as contraceptive prevalence rates or percent of births with skilled birth attendants. Unlike outputs, outcomes are measured at the population level.

**Impacts** – Long-term outcomes, such as the maternal mortality ratio or infant mortality rate.

ples, and indicators that provide estimates that pertain to years in the past should be avoided. Box 6 presents the definitions of inputs, outputs, outcomes, and impact indicators.

### Data sources and data collection

An explicit plan for data collection should be developed during a project's preparation and design, and preferably baseline data should also be identified or collected before the project is implemented. Without adequate baseline data, subsequent monitoring of a project becomes challenging. Regarding the frequency of data collection, a minimum of three collections is desirable:

- Data collected at baseline
- Data collected for midterm project review, and
- Data collected at end-of-project.

For some indicators, data can be collected more frequently, as shown in Table 1. Ad-

ditionally, when prior analytic study is conducted to inform the design of a project, it increases the likelihood of the project's success.

Several sources of data and data collection instruments can be effectively used to measure indicators for improving maternal health. These include routine Health Management Information System (HMIS), the civil registration system, household surveys (such as Demographic and Health Surveys [DHS] or Multiple Indicator Cluster Survey [MICS]), health facility surveys, and censuses.

A complete and accurate HMIS together with a civil registration system can provide sufficient data to measure most indicators for improving maternal health, as the details in Table 1 make clear. In countries where the HMIS is weak, a portion of projects funds should be allocated to the strengthening of the HMIS. In the interim, while the HMIS is still being improved, data from selected health facilities could be used to allow for the tracking of a project's progress, depending on the coverage of the project and local capacity. Where appropriate, health facility surveys could also be conducted to provide baseline, intermediate and end-of-project data.

Population-based surveys, such as the DHS, are also reliable sources of data for M&E since they provide medium-term trends. The limitation of such surveys is that they might not coincide with the beginning and end of a project. Moreover, population-based estimates cannot be attributed solely to the World Bank funded project. In sum, these instruments can be reliable for general health monitoring purposes but may not always be reliable for evaluating the Bank's projects as such.

**Table 1 | Selected Indicators and Data Sources for Monitoring Projects Aimed at Improving Maternal Health**

<b>Output/outcome indicator<sup>1</sup></b>	<b>Description of indicator</b>	<b>Data source/ collection instrument</b>	<b>Frequency</b>	<b>Notes</b>
<b>Obstetric care</b>				
Maternal mortality ratio (MMR) – <i>impact</i> –	Number of maternal deaths/Live births in the same calendar year	Routine HMIS and civil registration system	Depends on the source	In a typical 5-year health project, MMR will not be used as an indicator since it is difficult to measure. MMR could be used in countries where the civil registration systems are complete and causes of deaths are available.
Percent births by skilled health personnel – <i>outcome</i> –	Number of births by skilled health personnel/Total number of births in the same area and period	Household survey (e.g., DHS, MICS)	3 or 5 yearly	This is a population based periodic estimate which, as a 3- or 5-year average, will not coincide with the beginning and end of project, but may provide useful medium-term trends. (Note: This applies to other indicators that are collected from 0–5 year histories as well.)
Number of institutional deliveries per year – <i>output</i> –	Number of deliveries in health facilities in a calendar year	Routine HMIS	yearly	The data is collected monthly. Another indicator—percent of institutional deliveries—will require an accurate estimate of the total number of births in a given area as well.
Percent antenatal care by skilled health personnel – <i>outcome</i> –	Number of pregnant women attended by skilled health personnel/Total number of births in the same area and period	Household survey (e.g., DHS, MICS)	3 or 5 yearly	This is a population-based periodic estimate which, as a 3- or 5-year average, will not coincide with the beginning and end of project, but may provide useful medium-term trends.
Number of 1 <sup>st</sup> antenatal visits (health facility) per year – <i>output</i> –	Number of 1 <sup>st</sup> antenatal visits (registrants) in a calendar year	Routine HMIS	yearly	The data is collected monthly and reported yearly. Women go to antenatal care several times in a year so 1 <sup>st</sup> visit is preferable.
Number of 1 <sup>st</sup> postnatal visits (health facility) per year – <i>output</i> –	Number of 1 <sup>st</sup> postnatal visits (registrants) in a calendar year	Routine HMIS	yearly	The data is collected monthly and reported yearly. Women go to postnatal care several times, so 1 <sup>st</sup> visit is preferable
Number of normal vaginal deliveries per year – <i>output</i> –	Number of normal vaginal deliveries in a calendar year	Routine HMIS	yearly	The data is collected monthly and reported yearly.

(Continued to next page)

**Table 1 | Selected Indicators and Data Sources for Monitoring Projects Aimed at Improving Maternal Health (Continued)**

<b>Output/outcome indicator<sup>1</sup></b>	<b>Description of indicator</b>	<b>Data source/ collection instrument</b>	<b>Frequency</b>	<b>Notes</b>
Number of partographs used in labor per year – <i>output</i> –	Number of partographs used in labor in a calendar year	Routine HMIS	yearly	The data is collected monthly and reported yearly. Partographs are used to monitor labor in places where cardiocotographs are unavailable
Number of caesarean deliveries per year – <i>output</i> –	Number of caesarean deliveries in a calendar year	Routine HMIS	yearly	The data is collected monthly and reported yearly.
Caesarean section rate – <i>outcome</i> –	Number of caesarean deliveries/total Number of births in the same area and period	Household survey (e.g., DHS, MICS)	3 or 5 yearly	This is a population-based periodic estimate which, as a 3 or 5-year average, will not coincide with the beginning and end of project, but may provide useful medium-term trends
Number of basic EmONC facilities – <i>output</i> –	Number of health facilities that provided all 6 basic EmONC functions	Routine HMIS	yearly	A given 3-month period in a calendar year can be used as a reference period to ascertain whether the requisite EmONC procedures were available.
Number of comprehensive EmONC facilities – <i>output</i> –	Number of health facilities that provided all 8 comprehensive EmONC functions	Routine HMIS	yearly	A given 3 month period in a calendar year can be used as reference period to ascertain whether the requisite EmONC procedures were available.
Number of facility-based maternal death audits – <i>output</i> –	Number of maternal deaths in health facilities that were reviewed for contributory factors or cause of death	Routine HMIS	yearly	The data is collected monthly and reported yearly.
Number of community-based maternal death audits – <i>output</i> –	Number of maternal deaths outside health facilities that were reviewed for contributory factors or cause of death	Routine reports of community deaths	yearly	This is difficult to collect in places where most women deliver at home. Active case-finding is essential in capturing these deaths.
Case fatality rate – <i>output</i> –	Number of deaths due to specified obstetric complications/Number of specified obstetric complications in the same health facilities and period	Routine HMIS	yearly	The data is collected monthly and reported yearly. The selection of specified obstetric complication(s) should be agreed on in advance.

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**Table 1 | Selected Indicators and Data Sources for Monitoring Projects Aimed at Improving Maternal Health (Continued)**

Output/outcome indicator <sup>1</sup>	Description of indicator	Data source/ collection instrument	Frequency	Notes
<b>Family planning indicators</b>				
Modern contraceptive prevalence rate – outcome –	Number of women who use modern contraceptives/Number of women ages 15-49 in the same area and period	Household survey (e.g., DHS, MICS)	3 or 5 yearly	This is a population-based periodic estimate which, as a 3- or 5-year average, will not coincide with the beginning and end of a project, although it may provide useful medium-term trends. It can be used to estimate 'currently married women' and/or 'all women' aged 15–49 years.
Number of new acceptors of modern contraceptives per year – output –	Number of new acceptors of modern contraceptives in a calendar year	Routine HMIS	yearly	In addition to monitoring acceptance of all modern contraceptives, this method may be used to monitor selected contraceptives (e.g., sterilization).
Total fertility rate – outcome –	Number of births a woman will have at the end of her reproductive period based on the current age-specific fertility rates.	Household survey (e.g., DHS, MICS)	3 or 5 yearly	This is a population-based periodic estimate which, as a 3- or 5-year average, will not coincide with the beginning and end of project, but may provide useful medium-term trends
Unmet need for family planning – outcome –	Percent of married women ages 15–49 who do not want any more children or want to wait for at least two years before having another child but are not using contraceptives	Household survey (e.g., DHS, MICS)	3 or 5 yearly	This is a population based periodic estimate which, as a 3- or 5-year average, will not coincide with the beginning and end of a project, though it may provide useful medium-term trends. Note that trends in unmet need are difficult to interpret since unmet need can be initially low in a high- fertility country when women actually want more children but unmet need could increase with Behavior Change Communication and then decrease again when family planning services are widely available to meet those needs.
Adolescent birth rate – outcome –	Number of births to women aged 15–19 years/Number of women aged 15–19 years in the same area and period	Household survey (e.g., DHS, MICS)	3 or 5 yearly	This is a population-based periodic estimate which, as a 3 or 5-year average, will not coincide with the beginning and end of a project, though it may provide useful medium-term trends.

<sup>1</sup> These indicators were compiled from various sources

## Section 2. Addressing Constraints to Improving Maternal Health

This section describes recommended global interventions for improving maternal health, constraints in implementing these interventions, and evidence from the extant literature on how some countries have addressed these constraints.

Several recent reviews of global evidence in improving maternal health outcomes have largely agreed on which specific strategies or interventions are effective. The expert consensus from the 2007 Women Deliver Conference in London (commemorating the 20th anniversary of the Safe Motherhood Initiative), resulted in the proposal of four core interventions to improve maternal health (shown in Box 7) (Family Care International, 2009). These have been elaborated further in the 2009 *WHO Recommended Interventions for Improving Maternal and Newborn Health: Integrated Management of Pregnancy and Childbirth* (WHO 2009).

A High Level Taskforce on International Innovative Financing for Health Systems was formed in September 2008 to assist countries in obtaining additional financial resources to attain the health MDGs. Two Technical Working Groups were then established: Working Group 1 on *constraints to scaling up and costs* and Working Group 2 on *raising and channeling funds* (Working Group 1, IHP+ Taskforce).

Working Group 1 concluded that ***strengthening country health systems is key to achieving the MDG 5*** but the approach should be context-specific (Working Group 1, IHP + Taskforce). The constraints identified by Working Group 1 to scaling up Health MDGs, including MDG 5, are listed in Box 8. Table 2 presents country examples of how some of these constraints have been addressed to improve maternal health outcomes.

### Box 7 Core Interventions to Improve Maternal Health (from the Women Deliver Conference)

- Use of skilled health personnel for delivery;
- Emergency obstetric care (EmONC) when life-threatening complications develop;
- Immediate postnatal care for mothers and newborns; and
- Family planning and other reproductive health services

A **basic EmONC facility** is expected to provide the following seven critical lifesaving services: administration of parenteral antibiotics, parenteral oxytocic drugs, and parenteral anticonvulsants (magnesium sulfate) for pre-eclampsia; manual removal of retained placenta; removal of retained products of conception (manual vacuum aspiration or dilatation and curettage); assisted vaginal delivery (vacuum extraction or forceps delivery); and basic neonatal resuscitation (bag and mask).

In addition to these seven functions, a **comprehensive EmONC** facility offers blood transfusion and Cesarean delivery

Sources: Family Care International 2009; Maine et al. 1997.

### Box 8 | Constraints to Improving Access to Health Benefits, by Level

Level of constraint	Examples of types of constraints
Community and household level	<ul style="list-style-type: none"> <li>• Lack of demand for effective interventions due to knowledge, perceptions, culture, or language</li> <li>• Barriers to the use of effective interventions (physical, financial, social)</li> </ul>
Health-services delivery level	<ul style="list-style-type: none"> <li>• Shortages or inadequate distribution of appropriately qualified staff</li> <li>• Weak information systems, technical guidance, program management, or supervision</li> <li>• Inadequate drugs or other medical supplies</li> <li>• Lack of equipment, infrastructure, or referral system</li> </ul>
Health-sector policy and strategic management level	<ul style="list-style-type: none"> <li>• Weak or overly centralized planning and management systems</li> <li>• Insufficient use of evidence in decision-making</li> <li>• Weak drug policies or drug supply system</li> <li>• Weak transportation or communication and referral systems, especially for emergencies</li> <li>• Ineffective policies for, engagement with, or regulation of the pharmaceutical sector or the private sector generally, and improper industry practices</li> <li>• Lack of interministerial and intersectoral action, or weak partnerships for health between government and civil society</li> <li>• Weak incentives to use inputs efficiently and to respond to users' needs and preferences</li> <li>• Reliance on aid agency funding, which reduces flexibility and ownership</li> <li>• Aid agency practices that overload country management capacity</li> </ul>
Public policies cutting across sectors	<ul style="list-style-type: none"> <li>• Government bureaucracy (civil service rules and remuneration, centralized management)</li> <li>• Limited fiscal space for additional public expenditure</li> <li>• Poor availability of communications and transport infrastructure</li> </ul>
Environmental and contextual characteristics	<ul style="list-style-type: none"> <li>• Governance and overall policy framework:</li> <li>• Corruption, weak government, weak rule of law and enforceability of contracts</li> <li>• Political instability and insecurity</li> <li>• Low priority attached to social sectors</li> <li>• Weak structures for public accountability including lack of a free press</li> <li>• Physical environment:</li> <li>• Climatic and geographic predisposition to disease</li> <li>• Physical environment unfavorable to service delivery</li> </ul>
Global level	<ul style="list-style-type: none"> <li>• Number of global initiatives and misalignment of reforms</li> <li>• Reliance on project funding modes and limited use of country's public financial management system</li> <li>• Poor quality reporting on DAH flows to countries</li> <li>• Demand for skilled health workers in other countries</li> </ul>

Sources: Working Group 1, IHP+ Taskforce; Hanson et al. 2003.

**Table 2 | How Selected Constraints have Been Addressed: Country Examples**

Type of constraint	What can you do about it? Examples from countries	Lessons Learned
<b>Lack of demand for effective interventions &amp; financial barrier</b>	<p><i>Demand-side incentives to individuals have been implemented through programs such as conditional cash transfers (CCTs) to improve the utilization of social and health services including maternal and child health.</i></p> <p><b>Latin America:</b> Since 1997, several countries in Latin America—including Brazil, Colombia, Ecuador, Honduras, Jamaica, and Mexico—have implemented and evaluated CCT programs with health and nutrition components. At their core, these programs are based on encouraging poor mothers to seek preventive health services and attend health education talks by providing a cash incentive for their healthy behavior (with healthy behavior representing performance). CCT impact evaluations have provided unambiguous evidence that financial incentives increase utilization of key services by the poor.</p> <p><i>(Source: Glassman et al. 2007)</i>  <i>Note: A more detailed description of the CCT in Mexico is presented after this table.</i></p> <p><b>India:</b> The Government of India launched the National Rural Health Mission (NRHM) in 2005 to provide effective health care to the rural population, especially disadvantaged groups including women and children. Janani Suraksha Yojana (JSY), a component of the NRHM, is a demand-side incentive scheme whereby poor women are provided with cash assistance to attend antenatal care and to deliver their babies at health facilities. Community workers actively seek out and enroll pregnant women in the JSY.</p> <p>In just two years, enrollment in JSY increased 10-fold, from a low of 0.7 million JSY beneficiaries in 2005/06 to 7.3 million beneficiaries in 2007/08. Due to the rapid increase in deliveries at the health facilities, however, some women had to be discharged immediately after delivery as a result of shortages in health personnel and limited facilities.</p> <p><i>(Source: World Bank, Midterm Review Report for Project P075060.)</i></p>	<p>Sudden and dramatic increases in service utilization can be expected as a result of conditional cash transfer programs. The health system needs to be sufficiently geared up for the program through investments to upgrade available infrastructure and equipment as well as to enhance availability of trained personnel.</p>

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**Table 2 | How Selected Constraints have Been Addressed: Country Examples (Continued)**

Type of constraint	What can you do about it? Examples from countries	Lessons Learned
<b>Financial barriers to the use of health services</b>	<p><b>Plurinational State of Bolivia:</b> In Bolivia, user fees were identified as a major barrier to the use of maternal health services. In order to make maternal health services more financially accessible, the Bolivia National Maternal and Child Health Insurance (MCH) program was established in 1996 to cover all the costs of antenatal care, labor, and postnatal care. This contributed to the increase in the use of skilled birth attendants from 47 percent in 1994 to 59 percent in 1998. (Koblinsky 2003)</p> <p>In Sri Lanka, Malaysia and the Yunnan province in China where maternal mortality have declined in the recent decades, user fees had not been established, and this might have contributed to the increased use of free maternal health services. (Koblinsky 2003)</p>	<p>For maternal health programs targeting the poor, providing free services or appropriate risk pooling mechanism has been shown to increase the uptake of services. Further, other studies have shown that women might not necessarily utilize free services if they cannot afford related costs such as transport or purchase of drugs not available at the health facility. (Freedman et al. 2007; Mills et al. 2007)</p>
<p>Note: More detailed descriptions of the Sri Lanka and Malaysia success stories are contained in Box 1 and Box 3 of Part 1 of this report.</p>		
<b>Health Services Delivery Level</b>		
<b>Shortages and inadequate distribution of appropriately qualified staff, lack of equipment, infrastructure and referral system</b>	<p><i>In remote areas, widely dispersed communities where health facilities are few and far between, or in places where women prefer to deliver at home, training and posting midwives in these communities is one way to boost professional assistance at delivery.</i></p>	<p>In the case of Indonesia, given that the newly trained midwives preferred to be posted in urban areas, a deliberate policy to provide incentives to attract midwives to underserved areas should have been implemented concurrently.</p>
<p>(Source: Hatt et al. 2007; IMPPACT and Population Reference Bureau 2007)</p>		<p>(Continued to next page)</p>

**Table 2 | How Selected Constraints have Been Addressed: Country Examples (Continued)**

Type of constraint	What can you do about it? Examples from countries	Lessons Learned
	<p><b>Djibouti:</b> In 2002, the Djibouti Health Sector Development Program Project was implemented to address, <i>inter alia</i>, issues of low utilization of the health services, shortage of qualified health personnel, shortage of medicines, and poorly managed health facilities. The project upgraded the maternity services at the national referral hospital (Peltier General Hospital); trained health personnel to better handle emergency obstetric complications; renovated/equipped the hospital; strengthened the capacity of the secondary level health facilities (e.g., renovated operating rooms, radios, and ambulances) to manage obstetric complications and emergencies that would have otherwise been referred to the Peltier Hospital; and at the Training Center for Health Personnel (CFPS) trained health personnel to offset the shortfall in human resources. In 2006, a National Household Survey (EDIM) showed that the percentage of births in health facilities had, remarkably, increased from 40 percent in 2002 to 93 percent in 2006</p> <p>(Source: World Bank, reporting background for Health Sector Development Program Project, Djibouti, Project P071062.)</p>	<p>In Djibouti, given the high urban population (&gt;80 percent) in a small geographical area, the focus on improving health facility services was appropriate, because geographical access (long distances) was not a major issue.</p>
<p><b>Weak information systems</b></p>	<p><i>Maternal death audits and reviews of maternal deaths provide information regarding the circumstances leading to the deaths and allows lessons learned to be utilized in preventing such deaths in the future. Additionally, when they are conducted in all health facilities, such audits and reviews also provide information on the total number of maternal deaths for the computation of maternal mortality ratios.</i></p>	<p>As noted in Annex 1, the significance of strengthening the routine HMIS and civil registration systems cannot be overemphasized.</p>
<p><b>Botswana:</b></p>	<p>In Botswana, a Maternal Mortality Monitoring System has been established, which entails the following: midnight census of admissions and deaths at all health facilities; birth notification forms that female welfare educators use to capture non-institutional live births; and completion of maternal death notification forms after a maternal death audit has been carried out. Given that more than 98 percent of deliveries are with skilled health personnel, this process enables fairly accurate estimation of annual maternal mortality ratios. Prior to 2005, national estimates of maternal mortality were not reliable, but since then more accurate estimates of MMR have been available.</p> <p>(Source: Republic of Botswana et al. 2006)</p>	

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**Table 2 | How Selected Constraints have Been Addressed: Country Examples (Continued)**

Type of constraint	What can you do about it? Examples from countries	Lessons Learned
<b>Lack of incentives to provide quality health services</b>	<p><b>Rwanda:</b> In 1998, after the war in Rwanda had ended, user fees were instituted, which contributed to a dramatic decline in the use of health services. To increase the utilization of health services, including use of skilled health personnel for delivery, the government implemented provider performance-based schemes, initially as pilot projects in two selected provinces in 2002 and a third in 2003. The participating health facilities were financially rewarded for meeting agreed targets. Additionally, women were provided free delivery care if they attended antenatal care regularly. In the pilot provinces, institutional deliveries increased from 12.2 percent in 2001 to 23.1 percent in 2004, in contrast to 6.7 percent in 2001 to 9.7 percent in 2004 in the non-participating provinces. Following the success of the pilots, in 2005 the government adopted this approach as a national policy.</p> <p>(Source: Rusa et al. 2009)</p>	<p>Accurate data is needed to verify the outcomes of performance-based financing approaches. In this case, an HMIS was established to provide reliable routine data with periodic verification.</p>
<b>Health-Sector Policy and Strategic Management Level</b>		
<b>Weak partnerships for health between government, civil society and private sector</b>	<p><b>Honduras:</b> Between 1980 and 1997, Honduras reduced the maternal mortality ratio from 182 to 108 maternal deaths per 100,000 live births by collaborating with private providers to set up 13 birthing centers in remote areas known for high maternal mortality.</p> <p>(Source: Koblinsky 2003)</p> <p><b>Cuba:</b> Cuba coordinated with the private sector to start maternity waiting homes as early as 1962; between 1963 and 1984, they helped to increase institutional deliveries from 63 percent to 99 percent and led to a decline in MMR from 118 to 31 per 100,000 live births.</p> <p>(Source: Koblinsky 2003)</p> <p><i>World Development Report 2004</i> notes that a range of countries at different levels of income and health status (Brazil, Chile, Iran, Nepal, Bangladesh, and Tanzania) has used a combination of service providers to bring about improvements in health outcomes: government, private, NGO and government-NGO partnerships.</p> <p>(Source: World Bank 2004)</p>	<p>While strengthening public sector healthcare delivery has been traditionally regarded as the “best response” to the issue of increasing access to health services, it is increasingly becoming evident that there are geographical areas, as well as marginalized populations, that will remain outside the reach of the public sector. To achieve universal access to health services, strategic partnerships with the private sector are essential.</p>

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**Table 2 | How Selected Constraints have Been Addressed: Country Examples (Continued)**

Type of constraint	What can you do about it? Examples from countries	Lessons Learned
<b>Lack of intersectoral coordination</b>	<p><i>Improvements in non-health sectors also have influence on maternal health outcomes. For example, in the transport sector, improving road networks and the availability of transport facilitates referral of emergency obstetric cases.</i></p> <p><b>Malaysia:</b> Beginning in the 1950s, the Government of Malaysia employed a multi-sectoral approach to reduce maternal mortality. MMR in Malaysia dropped from 534 maternal deaths (per 100,000 live births) in 1950 to 19 maternal deaths in 1997. This entailed rural development, including expansion of rural health services, improving basic education and female education, improving sanitation and water supply, and extending road networks in rural areas. While specific health interventions such as professional midwifery led to improved maternal health outcomes, the strengthening of the referral and communication systems made maternal health services more accessible.</p> <p><i>(Source: Padmanathan et al. 2003)</i></p>	<p>Integrated rural development, together with key maternal health interventions such as professional midwifery, enables a majority of pregnant women to receive delivery services at home and, with time, at equipped and functional health facilities.</p>
<b>Opposition to family planning</b>	<p><b>Iran:</b> In the 1960s, Muslim leaders in Iran were opposed to family planning, even during a period when the total fertility rate was more than 7 births per woman. However, based on the 1966 census indicating rapid population growth, the government in 1967 made the Tehran Declaration, which set in motion legislative passage of population and family-planning policies, the creation of the national family planning program, the provision of family planning services at health facilities throughout the country, and the introduction of population/family life education into secondary and tertiary education curricula. With the change in government in 1979 as a result of the Islamic Revolution, the national family planning program was suspended. Nonetheless, when the findings of the 1986 census indicated the enormity of the implications of high population growth/high fertility, they led to a reversal of the 1979 stance, and the national family planning program was reinstated. As a result, Iran is currently among the countries that have experienced a remarkable decline in their total fertility rate, from about 7 in the 1960s to 2.06 in 2006. The contraceptive prevalence rate was measured at a high of 76 percent in 1997.</p> <p><i>(Source: Robinson and Ross 2007)</i></p>	<p>This underscores the power of generating cogent evidence to influence governments and policymakers.</p>

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**Table 2 | How Selected Constraints have Been Addressed: Country Examples (Continued)**

Type of constraint	What can you do about it? Examples from countries	Lessons Learned
Global Level	Fragmentation of donor efforts and financing in the sector, resulting from uncoordinated activities among multiple donors, and the inefficient use of available resources, have been key constraints in most low income countries.	
Fragmentation of donor efforts and financing in the health sector of low income countries	<p><b>Bangladesh:</b> The Bangladesh Health and Population Program project, in 2003, introduced a Sector-Wide Approach (SWAp) to coordinate donors' support and to better align support with the government's health sector policies and programs. The implementation of the SWAp was successful in transforming what had been 126-donor funded projects into a single program. The SWAp also helped to reduce transaction costs as donors contributing to the pool had common reporting requirements, and the supervision burden was reduced by the introduction of a single Annual Performance Review involving all donors.</p>	<p>A SWAp takes time to implement and is an evolutionary process. In Bangladesh it took about 20 years of donor coordination to begin the process of implementing a SWAp. Donors' extensive role in day-to-day management of a SWAp can undermine the government's capacity and ownership. Not carrying out the necessary analyses of the political economy of reforms can also lead to SWAp failure. A more phased approach yields more lasting results.</p>

(Sources: World Bank 2005; World Bank 2008)

### **Mexico's Conditional Cash Transfer Program, "Oportunidades"**

Conditional Cash Transfers (CCTs), as noted earlier in Table 2, have been widely used, particularly in Latin American countries, to improve nutritional, maternal and child outcomes. We illustrate or describe in detail one such successful program implemented in Mexico.

#### **Context**

The design of conditional cash transfer (CCT) programs in Mexico came at a time when it was widely recognized that public subsidies were often poorly targeted to poor households and had a limited impact on poverty (Glassman et al. 2007; Fiszbein et al. 2009; Levy and Rodriguez 2004; Levy 2006; Rodriguez 2003). There was little coordination across programs, administrative tasks were duplicated, there was a noticeable imbalance in spending that favored urban areas, and there was no systematic evaluation to analyze the effectiveness of such programs.

In 1997, Mexico decided to address these issues with the introduction of a large-scale CCT program that aimed, in part, to improve birth outcomes through better maternal nutrition and use of antenatal care. The Mexican program (originally called PROGRESA and renamed Oportunidades in 2001) uses cash as an incentive for parents to invest in their children's health and education to break the cycle of poverty. Oportunidades was an innovation in Mexican social policy. The program explicitly made a commitment to give beneficiaries the freedom to choose how they used the transfers as long as they committed to certain behaviors, namely education, health, and nutrition behaviors that were viewed as investments in human capital

(Fiszbein et al. 2009). Oportunidades initially targeted very poor rural areas but later was extended to all poor households.

#### **How did it improve maternal health?**

The program aimed to improve birth outcomes by providing cash transfers to beneficiary households conditioned, in part, on women's completing a prescribed antenatal care plan (at least four antenatal care visits, and two post-partum care visits for breastfeeding women) and attending an educational program. A key component of the educational program is requiring mothers' attendance at health and nutrition lectures (*platicas*). Pregnant women are also required to attend *platicas* to learn what to expect from antenatal care consultations, the clinical content of this care, maternal nutrition and other reproductive health information. Monthly meetings also take place between beneficiary women and *promotoras*, or elected beneficiary representatives, to ensure that the program's objectives and requirements are understood. A key objective of both the educational sessions and the meetings with the *promotoras* is informing beneficiary women of their right to social services and empowering women on how to make the best out of their interaction with health care providers (Barber and Gertler 2008).

A unique feature of the program was the deliberate decision to give the cash transfers directly to the mother or female head of household. Once enrolled, households receive benefits for a minimum of three years, conditional on meeting program requirements. The payment mechanism is cash payments made at program-specific payment points, and program compliance is via certification at public

clinics and schools. The program's average cost per family beneficiary is US\$560, and the average monthly transfer per household is US\$20 (Handa and Benjamin Davis 2006). The program is affordable; with a total of five million household beneficiaries by 2005, the total program budget of US\$2.8 billion represented less than 1 percent of Mexico's gross domestic product (Handa and Davis 2006).

### *Outcomes*

Numerous evaluations of Mexico's Oportunidades have shown that this program has been successful in improving access to and use of health services by poor women as well as improving their health outcomes.

- ***Use of health services:*** Oportunidades beneficiary families visited the health facilities twice as frequently as non-beneficiary families and utilization of public clinics increased by 53 percent, according to research by Lagarde et al. (2007). That analysis also suggested that children born to mothers in this program were 25 percent less likely than those born in non-beneficiary households to be reported as having been ill in the previous four weeks.
- ***Maternal mortality:*** Hernández et al. (2005) found that maternal mortality was 11 percent lower in the municipalities with at least one locality incorporated in Oportunidades compared to those without any localities participating in the program.
- ***Antenatal care:*** Studying urban areas, Prado et al. (2004) found that the percentage of births with appropriate antenatal care (defined as at least five visits

during pregnancy) increased by 6 percent between 2002 and 2003 among urban beneficiaries of the program. Barber et al. (2008) studied rural, low-income women and found that for these women the Oportunidades program was associated with better quality of antenatal care (with quality being measured as the proportion of antenatal care procedures received by beneficiaries). The Barber study found that beneficiaries received 12 percent more antenatal procedures compared with non-beneficiaries, and attributed this result to the program's empowerment goal; the program provides women with information about care content and gives them skills to insist on better quality from health care providers.

- ***Other outcomes:*** Lagarde et al. (2007) also agree that CCT programs are effective in improving nutritional and anthropometric outcomes, and preventive behaviors. However, their overall effect on health status remains less clear. The Mexican program was also successful in increasing its coverage from approximately 300,000 beneficiary households in 1997 to 5 million households in 2005, and serving as a precursor of similar programs in the region (Fiszbein et al. 2009).

### *Lessons learned*

While CCT programs seem to be successful in increasing the use of health services and in improving nutritional and anthropometric outcomes and preventive behaviors, their overall effect on health status remains less clear. This highlights the importance of having supply-

side interventions (improving access to and quality of health services) to complement demand-side programs like Oportunidades to meet the needs of clients and improve health outcomes (Lagarde et al. 2007). Further, programs with an effective monitoring of their conditionality will have higher compliance rates, as the Oportunidades monitoring system shows with its compliance rate of 93 percent (Glassman et al. 2007).

### *Cost effectiveness*

Several authors agree that data on the overall costs of CCT programs is still too limited to allow a full scope for assessing their cost-effectiveness or cost-efficiency (Glassman et al. 2007; Barber and Gertler 2008; Caldés et al. 2004). Despite this, the impact of this approach on human capital outcomes cannot be underestimated.

### Section 3. Overview of Bank Projects in 60 Countries with High Maternal Mortality

This section provides an overview of the World Bank's support for maternal health in countries with high maternal mortality (defined as having more than 300 maternal deaths/100,000 live births) through health projects implemented between 1997 and 2008. Sixty countries with high maternal mortality met the criteria for this review. (See Figure 1)

#### Methodology

Project Appraisal Documents (PADs) of health projects with Population and Reproductive Health (Pop/RH) themes were reviewed for the 60 countries with high maternal mortality. A total of 104 projects with Pop/RH as a primary or secondary theme were approved by the Bank within these countries during 1997–2008. The review of these projects was intended to identify which projects addressed maternal health activities. In addition to the Pop/RH projects review, the Country Assistance Strategies (CAS's) were reviewed for countries with high maternal mortality but with *no* health projects that addressed use of skilled health personnel for delivery or emergency obstetric care. The review's purpose was to find out whether the CAS for each of these countries had identified maternal health as a health burden and, if so, why support for use of skilled health personnel for delivery care or emergency obstetric care was not considered in the country portfolio. The Country Assistance Strategy Results Frameworks were also examined for the following indicators: maternal mortality ratio, use of

skilled health personnel for delivery, total fertility rate (TFR), and contraceptive prevalence rate (CPR).

#### A. Bank support for maternal health in countries with high maternal mortality as documented in PADs

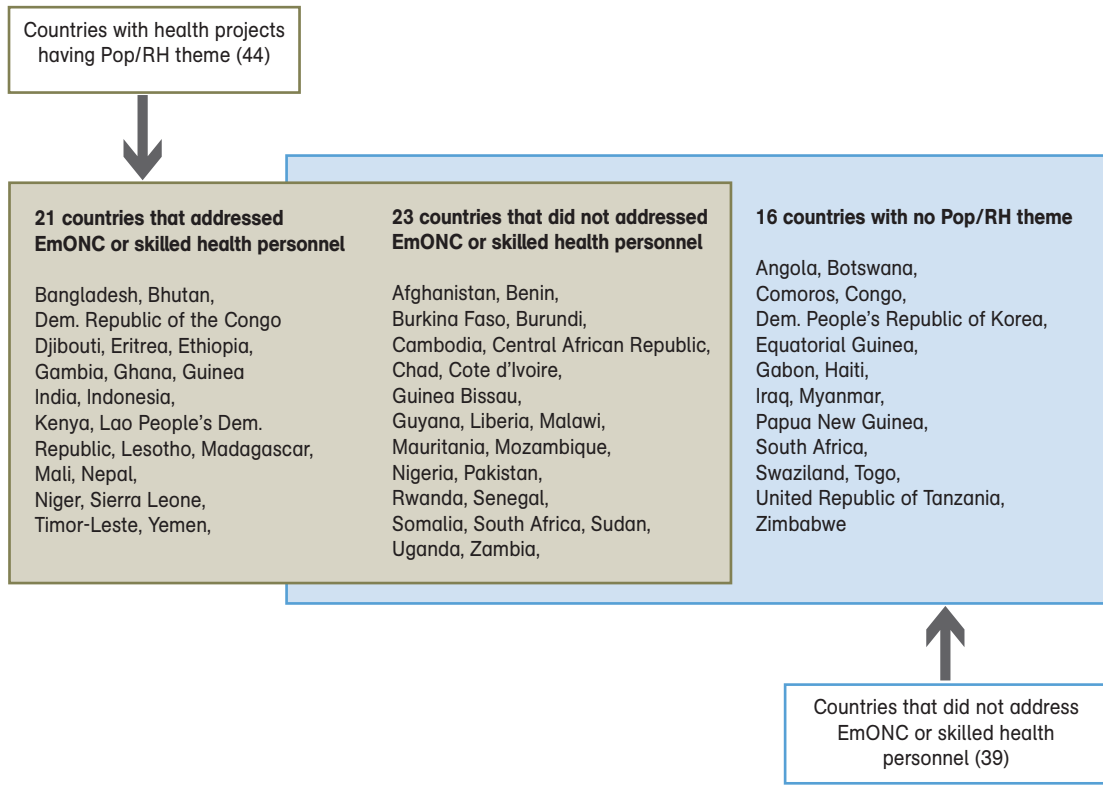
Of the 60 countries with high maternal mortality, during the period from July 1, 1997, to June 30, 2008, the Bank financed 104 health projects with a Pop/RH theme in 44 countries, while 16 countries had no health projects with a Pop/RH theme (Figure 3). The regional distribution of these 104 projects is shown in Figure 4. Of the 104 Pop/RH projects, only 31 projects (in 21 countries) included use of skilled health personnel for delivery or provision of emergency obstetric care.

#### Distribution and funding of health projects with Pop/RH theme

The distribution of the 104 health projects with a Pop/RH theme by fiscal year of approval is shown in Figure 5. The number of projects approved per year ranged from a low of one in 1997 to 15 in 2006. The highest numbers of projects approved during the 1997–2008 period were all approved during the last three years (2006–2008).

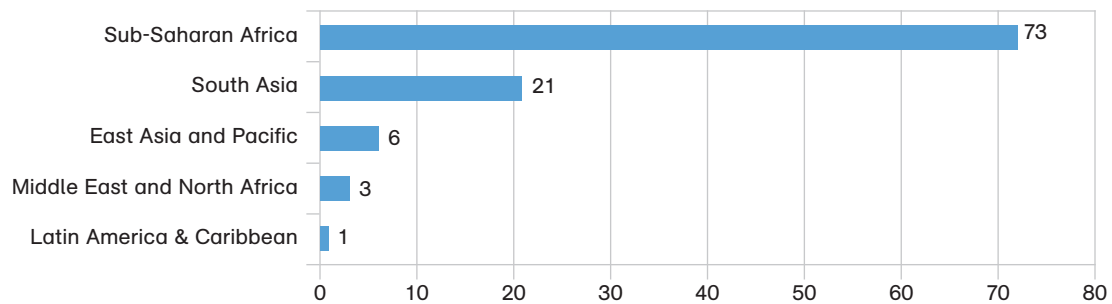
Figure 6 shows World Bank lending by fiscal year (of approval) of projects with Pop/RH theme alongside the corresponding total funding for all Health, Nutrition, and Population (HNP) projects. During the entire period, total Bank funding for Pop/RH projects was US \$4.717 billion, as compared with US\$ 16.807 billion in funding for all HNP projects—an overall ratio of 1:3.6. Funding for health projects with Pop/RH theme per year during the period followed no clear pattern and

**Figure 3 | Review of 60 Countries with Maternal Mortality Ratios Greater than 300 Maternal Deaths per 100,000 Live Births**



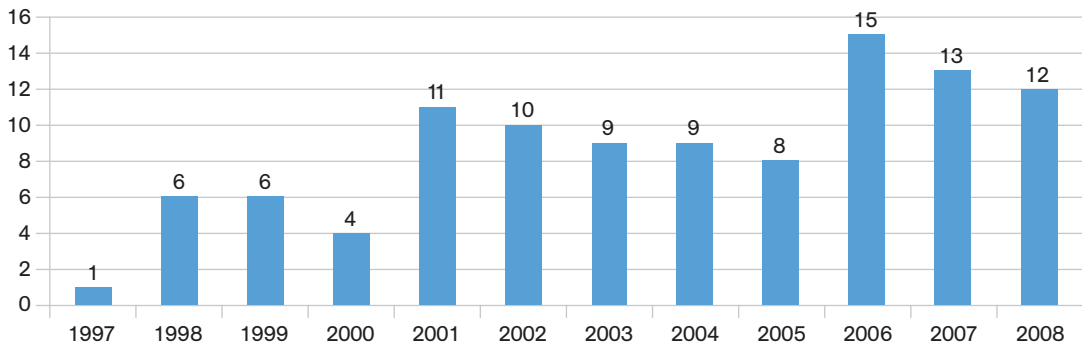
Source: Map by the World Bank, based on data from WHO/UNICEF/UNFPA/World Bank 2007.

**Figure 4 | Regional Distribution of 104 Population and Reproductive Health Projects in 44 Countries with High Maternal Mortality Ratios, July 1, 1997–June 30, 2008**



Note: The regions exclude high income countries

**Figure 5** Number of Health Projects Approved by Fiscal Year with Population and Reproductive Health Theme in 44 Countries with High Maternal Mortality Ratios, July 1, 1997–June 30, 2008

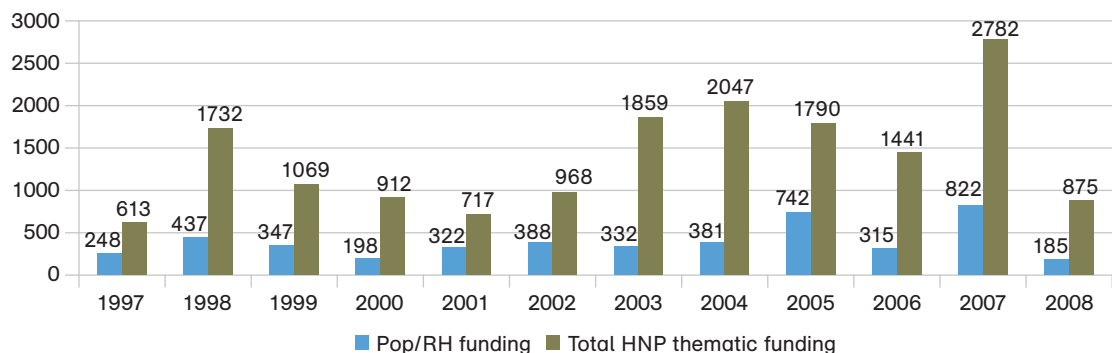


ranged from a low of US\$ 185 million in 2008 to a high of US\$ 822 million in 2007. Funding for individual health projects with Pop/RH theme ranged from US\$ 5 million to a high of US\$ 360 million (not shown in Figure 6).

The India Reproductive and Child Health project, Part I (approved in fiscal year 1997) and Part II (approved in fiscal year 2007) were among the highest funded, receiving US\$ 248 million and US\$ 360 million, respectively. Indeed, India alone (including separate funding

for individual states) accounted for 28 percent (US\$ 1.327 billion/ US\$ 4.717 billion) of the Bank's funding for health projects with a Pop/RH theme during the 1997–2008 period, as compared with 51 percent (US\$ 2.404 billion/ US\$ 4.717 billion) absorbed by projects in 31 sub-Saharan African countries. In addition, the majority of the 104 projects entailed counterpart funding from respective governments and, in some cases, funding from bilateral donors or international agencies. The few

**Figure 6** Funding by Fiscal Year in US\$ in millions for Health Projects with Population and Reproductive Health Theme, 1997–2008



exceptions involved countries such as Sudan and Timor-Leste where there were World Bank-administered Multi-Donor Trust Funds with no direct lending from the Bank.

### *Maternal health components and indicators in health projects with Pop/RH theme*

The project appraisal documents (PADs) of the Bank's 104 Pop/RH health projects during 1997–2008 were examined to ascertain whether they contained any of the four core interventions to improve maternal health: family planning; skilled care during and immediately after pregnancy and childbirth; emergency obstetric care when life-threatening complications develop; and immediate postnatal care for mothers and newborns.

Two-fifths of these projects included at least one of the four core interventions. Family planning was included in 41 projects, while postnatal care was included in just 20 (Table 3). There was no clear pattern for any of these components by fiscal year of approval. Further, regarding use of the three key MDG 5 indicators and the total fertility rate, the most frequently mentioned indicator in the PADs was the maternal mortality ratio, and the

least frequently mentioned was the contraceptive prevalence rate (shown in Table 4). A subsequent in-depth review ascertained whether these indicators were incorporated in the results framework matrix in the selected projects and whether data was available to measure them.

### **B. Review of CAS for countries with no maternal health components for MDG 5A**

As noted earlier, 39 countries with high maternal mortality had no Bank financed health project that addressed the use of skilled health personnel for delivery or provision of emergency obstetric care. Of these 39 countries, four did not have any type of country assistance strategy document in either of the Bank's two operational databases (the Image Bank and the Operations Portal) used for this review, bringing the actual number of reports reviewed to 35. The type of reports reviewed included the following: 16 CAS reports, 14 interim strategy notes (ISNs), one joint assistance strategy note (JAS), one joint interim strategy note (JISN), and three country partnership strategy notes (CPSs). Table 5 shows the regional distribution of the 39 countries under review.

**Table 3** | **Maternal Health Interventions in 104 Health Projects with Population and Reproductive Health Theme, 1997–2008**

Maternal health component	Number of projects
Use of skilled health personnel for delivery	31
Emergency obstetric care	23
Postnatal	20
Family planning	41

**Table 4** | **Maternal Health Indicators in 104 Health Projects with Population and Reproductive Health Theme, 1997–2008**

Maternal health indicators	Number of projects
Maternal mortality ratio	49
Percentage births by skilled health personnel	39
Total fertility rate	32
Contraceptive prevalence rate	29

**Table 5 | Regional Distribution of 39 Countries with High Maternal Mortality Ratios that have no Health Projects Addressing Use of Skilled Health Personnel for Delivery or Provision of Emergency Obstetric Care, July 1, 1997–June 30 2008**

Region <sup>1</sup>	Countries	Total
AFR	Angola, Benin, <b>Botswana</b> <sup>2</sup> , Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Comoros, Congo, Cote d'Ivoire, <b>Equatorial Guinea</b> <sup>2</sup> , Gabon, Guinea Bissau, Liberia, Malawi, Mauritania, Mozambique, Nigeria, Rwanda, Senegal, Somalia, South Africa, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe	30
EAP	Cambodia, <b>Democratic Republic of Korea</b> <sup>2</sup> , <b>Myanmar</b> <sup>2</sup> , Papua New Guinea	4
LCR	Guyana, Haiti	2
MENA	Iraq	1
SAR	Afghanistan, Pakistan	2
<b>Total</b>		<b>39</b>

<sup>1</sup> The regions exclude high income countries

<sup>2</sup> Countries with no country assistance strategy documents.

#### *Maternal health indicators in the country assistance strategy results framework*

The CAS reports were also examined to determine the extent to which key MDG 5 indicators were incorporated in the Country Assistance Strategy Results Framework, since this reveals whether these indicators were intended to be monitored. Among the frameworks for the 35 countries, only 10 included the maternal mortality ratio, while 13 included the use of skilled health personnel at delivery (Table 6).

#### *Reasons for not addressing MDG 5A in some high maternal mortality countries*

The varied reasons why Bank support was not considered for use of skilled health personnel for delivery or provision of emergency obstetric care in the 35 countries identified above are summarized in Table 7. The individual reasons for each of the 35 countries are shown in Table 8. The reasons included the following: maternal health was expected to be addressed in budget support operations to governments or as part of planned sector-wide approaches

**Table 6 | Maternal Health Indicators in 35 Country Assistance Strategy Documents by Region**

	AFR (28)	EAP (2)	LCR (2)	MENA (1)	SAR (2)	Total (35)
<b>Indicator in the Country Assistance Strategy Results Framework</b>						
Maternal mortality ratio	8	0	0	0	2	10
Use of skilled health personnel for delivery	9	1	1	0	2	13
Total fertility rate	16	2	1	0	2	21
Contraceptive prevalence rate	1	0	0	0	2	3

**Table 7 | Reasons Why Country Assistance Strategies in 35 Countries did not Address Maternal Mortality: Summary**

Summary reasons	Countries	Number
Maternal health was to be addressed in budget support (development policy lending, Poverty Reduction Sector Credits)	Benin, Guyana, Pakistan, Rwanda, Senegal, Uganda	6
Maternal health was to be addressed in sector-wide approaches (SWAp)	Cameroon, Congo, Guinea Bissau, Mozambique, Nigeria, Tanzania	6
Maternal health was to be addressed as part of a package of health services	Afghanistan, Burkina Faso, Chad, Liberia, Sudan*	5
Other donors were to take leadership in maternal health	Cote d'Ivoire, Malawi, Mauritania, Papua New Guinea, Swaziland,	5
Bank involvement in maternal health was to be mainly through technical assistance and analytic and advisory activities	Cambodia, Somalia*, Zambia	3
Other health interventions took strategic priority	Angola, Central African Republic	2
Maternal health was to be considered as part of future project	Burundi	1
Maternal mortality was deemed low compared to countries in the sub-region	Gabon	1
<i>No reason provided</i>	Comoros, Haiti, Iraq, South Africa, Togo, Zimbabwe*	6

\* Countries currently under suspension due to arrears.

(SWAp); maternal health was to be part of a package of health services, Bank involvement in maternal health was to be mainly through technical assistance or in analytic and advisory activities (AAAs); and other donors were expected to take the lead in maternal health. It is notable, though, that no reasons were provided for six countries with high maternal mortality.

### **Common Bank practices and trends**

The review also identified several common practices and trends in the development of country assistance strategies, which help to understand the context in which the Bank, governments, donors, and stakeholders work in partnership to achieve sustainable development.

The Bank is increasingly using harmonized aid modalities, such as development policy lending, basket funds, and joint analyt-

ical and advisory services (AAAs), and relying increasingly on governments' processes and systems to improve aid effectiveness.

Consequently, the Bank support is becoming less focused on highly selective and targeted interventions, as shown by the proportion of countries (approximately one third) where the Bank is choosing to provide a supporting rather than a leading role in maternal health interventions. There is a clear acknowledgment in the country assistance strategies reports that the Bank's comparative advantage lies in its ability to bring international best-practice experience to bear in its policy dialogue through analytical and advisory services and to use its convening power to leverage scarce resources. In this regard, AAAs are key to providing a solid foundation for informed policy decisions and investments.

**Table 8** | **Reasons Why Country Assistance Strategies in 35 Countries did not Address Maternal Mortality: Individual Countries**

Country	Reasons why support for maternal health was not considered
Afghanistan	Maternal health is supported by the ISN, as the Bank strategy calls for continued support for the delivery of a Basic Package of Health Services (BPHS), which includes antenatal care, vaccination, safe delivery, and family planning services.
Angola	The ISN identifies HIV/AIDS, malaria, and tuberculosis as the target areas of intervention in the health sector. (Note: While the ISN reports that some progress has been made in improving maternal health and family planning, the quality of maternal health in Angola remains among the lowest in the world.)
Benin	The CAS acknowledges lagging performance in the implementation of priority public health programs, including reproductive health, but it indicates the Bank's support through the PRSC I project. Bank assistance to health programs will focus more on partnerships, programmatic assistance, community-driven development, and capacity enhancing AAA.
Burkina Faso	The CAS will support national efforts to increase use and quality of primary health services through greater emphasis, among other things, on antenatal care, assisted births, and contraceptives use.
Burundi	The CAS proposed a lending program for FY09–FY12 that includes a health project (FY09) which would help the government to implement its policy of eliminating health user fees for pregnant women and children under five.
Cambodia	The CAS does not include any health-related projects in its proposed lending program (FY05–FY08), but it proposes analytic work as preparation for a future health project (likely after the CAS period in FY09).
Cameroon	The ISN includes a proposed health sector SWAp (FY08) which is expected to «put Cameroon back on track for reaching the health MDGs.»
Central African Republic	With IDA support, mainly through help with arrears clearance and budget support, specific interventions in the health sector are limited to a multi-country HIV/AIDS program and micro-projects funded through cross-sectoral operations. Maternal health is not considered in the assistance program despite the fact that <i>MMR doubled from 1988 to 2003</i> .
Chad	Maternal health is addressed through the CAS outcome indicator of «increased percent of health centers providing the minimum package of activities,» which includes care for pregnant women and women of reproductive age.
Comoros	Maternal health is not addressed in the ISN, although it is considered a key strategic goal in the country's PRSP. The ISN does not provide any reason why maternal health is not considered.
Congo	The Bank would continue to support the health sector through the establishment and implementation of a SWAp for a health project in FY08, and a MAP funded HIV/AIDS project.
Cote d'Ivoire	The ISN explains that «other donors are committed (to the sector). Programs are funded by external donors such as Global Fund and PEPFAR (HIV/AIDS) and the bilateral cooperation». The ISN for the FY08–09 program does not include any health-related projects and focuses largely on community rehabilitation and infrastructure programs.
Gabon	The CAS indicates that Gabon's current maternal mortality ratio is one of the lowest in Sub-Saharan Africa and represents a significant decline from 2000. If this decline continues, «Gabon appears to be on track to achieve the MDG by 2015.»
Guinea Bissau	The CAS would support gender-targeted programs through a Health Sector Investment Program (FY98) which would target about 80 percent of its resources to child and maternal care and management of a Social Action Fund.

(Continued to next page)

**Table 8** | **Reasons Why Country Assistance Strategies in 35 Countries did not Address Maternal Mortality: Individual Countries** (*Continued*)

Country	Reasons why support for maternal health was not considered
Guyana	Under this CAS, the Bank's support would move away from individual sectoral investment projects to a program of policy-based lending, which would be implemented through a series of PRSCs.
Haiti	Although the ISN acknowledges that Haiti has the highest infant and maternal mortality in the Americas, delivery of basic health services, including maternal health, is not included in this ISN or even considered for future IDA intervention.
Iraq	Iraq's authorities have specifically asked for the Bank's support for the sectors of education, electricity, roads, and water supply and sanitation but not for the health sector.
Liberia	Although the ISN indicates that Bank support in the health sector is limited to strengthening the policy making and management functions of the Ministry of Health, the proposed Emergency Health Project (FY97) would also include maternal and health components.
Malawi	The CAS supports a selective Bank program limiting the Bank's engagement in sectors in which other donors are better positioned to take the lead. The UK's Department for International Development (DFID) will take the key role in the health sector but the Bank would remain strongly engaged in HIV/AIDS prevention.
Mauritania	The proposed CAS pursues a very selective approach, based on key areas in which the Bank has comparative advantages, including governance, financial and private sector development, urban development, and education.
Mozambique	Maternal health is addressed in the CPS through a planned SWAp operation to support the government's Health Service Delivery Program (HSDP).
Nigeria	Under this joint CPS between the Bank and DFID, support for maternal health is envisaged through targeted programs using Community Driven Development (CDD) at the local government, and SWAps at the state level.
Pakistan	The CAS priorities in the health sector include support for policy reforms and institution building to help reach MDG targets, including maternal mortality. The key Bank lending instrument will be PRSCs at the national level.
Papua New Guinea	Under the CAS, the Bank's support for the health sector is limited to participation in multi-donor programmatic support, since other key development partners (such as ADB, NZAID, AusAID, WHO, UNICEF and EC) take the lead in the implementation of health projects.
Rwanda	Bank support for maternal health will be provided through a programmatic Development Policy Lending (DPL) series (starting in FY09) which will be merged with the PRSC series during the CAS period.
Senegal	One of the outcomes of the CAS is to assist the government in reducing maternal mortality by increasing the number of assisted births, particularly in the poorest regions, with a series of annual PRSCs throughout the CAS period.
Somalia	Bank lending to Somalia has been suspended since 1991; a resumption of regular lending will require the country to fulfill key political and financial conditions. Bank support is limited to TA and AAA on public finance management and private-sector development, and the piloting of an inter-agency community-driven recovery and development project. Maternal or other health related activities are mentioned in the ISN.
South Africa	There are no lending operations under this CPS. The two pillars of the CPS are urban/rural development and regional integration, neither of which addresses any critical issues in the areas of human development or health service delivery, including maternal health.

(Continued to next page)

**Table 8** | **Reasons Why Country Assistance Strategies in 35 Countries did not Address Maternal Mortality: Individual Countries** (*Continued*)

Country	Reasons why support for maternal health was not considered
Sudan	Due to Sudan's outstanding arrears, IDA lending to the country is currently suspended. However, the Bank has remained engaged through the administration of two large Multi-Donor Trust Funds (MDTF) with a "Health Umbrella Project" which supports the provision of health services in the south of the country by contracting with the private sector and NGOs.
Swaziland	After a decade and half of non-lending to the country, the ISN focuses on rebuilding the Bank Group's relationship with Swaziland by focusing very strategically on a few key priorities of support, where the Bank can add value. This does not include maternal health objectives at this time.
Togo	The overarching goal of the ISN is to help Togo recover from a long period of instability and from suspension of Bank operations since 2002. One of the objectives of the government's interim PRSP is «developing the health system and health care by promoting maternal-child health care» (among other interventions); however, the ISN does not provide specific support for this country objective.
Uganda	Bank support for maternal health will be provided mainly through general budget support in the form of annual PRSCs as well as through non-lending activities such as health sector reviews.
United Republic of Tanzania	The JAS includes Bank support for maternal health through an on-going Health Sector Development Program II, a SWAp with pooled funding from the Bank and seven other development partners.
Zambia	As a result of the government's preference to use scarce IDA resources for financing infrastructure while funding social sectors through its own resources or grant financing, the Bank's support during the CAS period in the social sectors will be limited to analytical and advisory activities (AAA) only. A results-based financing program to improve maternal health will also be piloted, and a Norwegian Trust Fund will focus on maternal mortality.
Zimbabwe	Zimbabwe has not received any new lending from the Bank since 2000 due to its outstanding arrears. While Bank lending is not part of the proposed ISN, its objective is to enhance the Bank's country knowledge, improve donor harmonization, and strengthen operational readiness to re-engage with Zimbabwe when circumstances permit.

*Note:* Reports reviewed included country assistant strategy notes (CASs), interim strategy notes (ISNs), joint assistance strategy notes (JASs), joint interim strategy notes (JISNs), and country partnership strategies (CPSs).

## Section 4. Estimated Costs for Improving Maternal Health

The Technical Working Group 1 of the High Level Taskforce on International Innovative Financing for Health Systems, noted earlier (Section 2), examined the constraints to scaling up and costs to achieve the health MDGs, including MDG 5 (Working Group 1, IHP + Taskforce). Technical Working Group 1 has made a strong case that it will not be possible to scale up the required activities to address all the health MDGs without *strengthening health systems*. Key elements of health system strengthening emphasized by this working group fall under three categories: governance, financial arrangements, and delivery arrangements.

Under financial arrangements, Technical Working Group 1 found that these three elements are essential:

- Strengthening domestic generation of financing and risk pooling
- Purchasing and results-based financing
- Paying the public sector health workforce

Under delivery arrangements, the working group identified these seven elements:

- Service infrastructure
- Service integration
- Public and private provision
- Human resources and training
- Quality of care
- Drugs and supplies, and
- Information and evidence.

Using two approaches, the working group estimated the additional funds needed to strengthen health systems for the 49 low-income countries in order to achieve the health MDGs (see Table 9). Applying the *normative costing* approach, which is based on scaling up health interventions, they estimated that an additional US \$251 billion will be required during 2009–2015. Their corresponding estimate using the *marginal budgeting for bottlenecks* (MBB) approach (“medium scenario”) is US \$112 billion.

Regarding maternal health in 2015, using the normative costing approach, this translates to 322,000 maternal deaths averted in 2015, 56 million women having access to skilled health personnel at birth and to antenatal care, and 56 million births averted due to the use of contraceptives (potentially reducing the number of maternal deaths). It was noted by the working group that securing these anticipated additional funds will not necessarily provide the expected health benefits if political commitment, good governance, and efficient use of resources are lacking.

Although the Technical Working Group 1 did not provide recent estimates of the costs of maternal health interventions, the 2006 *Disease Control Priorities in Developing Countries* estimated that the cost per Disability-Adjusted Life Year (DALY) averted of mother and baby packages could vary from US\$77 to US\$151 in Sub-Saharan Africa and from US\$143 to US\$278 in South Asia, depending on the complexity of the intervention.

**Table 9 | Additional Costs for Achieving Health Millennium Development Goals for 49 Low-income Countries**

		WHO Normative (US\$2005)	MBB Medium (US\$2005)
Total additional costs 2009–2015 bn	Total	251 bn	112 bn
	Capital	101 bn	54 bn
	Recurrent	151 bn	58 bn
Total additional costs in 2015 bn	Total	45 bn	36 bn
	Capital	2 bn	19 bn
	Recurrent	43 bn	17 bn
Total additional costs in 2015 <i>per capita</i>	Total	29	24
	Capital	1	13
	Recurrent	28	11
Capital as percent of total		40 percent	48 percent
Human resources as percent of total		22 percent	12 percent
Drugs and commodities as percent of total		13 percent	21 percent
Programme and disease as percent of total*		26 percent	38 percent
Health systems as percent of total		74 percent	62 percent
Sub-Saharan Africa as percent of total		60 percent	80 percent

\* Includes only program or disease-specific resources; multipurpose health workers and facilities are included within health systems.

Source: IHP+ (International Health Partnership and related initiatives), Working Group 1 on Constraints to Scaling Up and Costs, *Working Group 1 Technical Report*

**Table 10 | Costs for per DALY Averted for Maternal Health Intervention Packages**

Intervention	Level	Cost per DALY
<p><b>Contraception</b> The contraception costs per couple-year of protection could vary, depending on the method used.</p>	<p><b>Individual:</b> intra-uterine device, condom, injection</p> <p><b>Household:</b> planning for contraception, including travel expenses to health clinics</p> <p><b>Community-based services:</b> contraceptive services delivered by a doctor based within the community</p>	<p>US\$6 (intrauterine device) to US\$20 (condoms or injections) (Dayaratna and others, 2000)</p> <p>US\$44 (Planned Parenthood Association of South Africa, 1999)</p> <p>US\$42 (ibid.)</p>
<p><b>Post-abortion care</b> Complications from unsafe abortions account for 13% of all maternal deaths, although this is probably an underestimate, due to large scale under-reporting.</p>		US\$4.40 to US\$17.19 (Dayaratna and others, 2000)
<p><b>Prenatal care</b> Preventing almost a quarter of all maternal deaths, good prenatal care includes information, education, and communication activities and behavior-change communication to increase women's skills in relation to the identification of danger signs and potential complications and where to seek care in these cases (Dayaratna and others 2000).</p>	<p><b>Prenatal care through public system</b></p> <p><b>Religious mission services</b></p>	<p>US\$2.26 per pregnant woman per year (Uganda; Levin et al, 1999)</p> <p>US\$6.43 per pregnant woman per year (ibid.)</p>
<p><b>Iron and Folic Acid Supplementation</b> Iron deficiency accounts for 1.8% of women's deaths and 2.6% of female DALY losses.</p>		US\$13 per DALY averted (Berman and others 1991)
<p><b>Health Systems Strengthening</b> A health facility that is equipped to provide essential obstetric care can also treat accidents, trauma, and other medical emergencies. In addition, in developing countries, 61 percent of maternal deaths occur 23 to 48 hours after delivery because of such problems as postpartum hemorrhage and hypertensive disorders or after 48 hours because of sepsis. Little information is available on costs related to postnatal care given the different kind of interventions and the severity of cases, but the literature generally agrees that emergency obstetric care can reduce costs.</p>	<p><b>Public Hospital</b></p> <p><b>Mission Hospital</b></p>	<p>US\$73 per emergency episode (Uganda; Levin et al, 1999)</p> <p>US\$86 per emergency episode (Uganda; Levin et al, 1999)</p> <p>US\$56 to US\$104 per caesarian section (Bolivia; Rosenthal and Percy, 1991)</p> <p>US\$11 to US\$16 per normal delivery (Dmytraczenko and others, 1998)</p>

Source: Jamison, D.T., J.G. Breman, A.R. Measham, G. Alleyne, M. Claeson, D.B. Evans, P. Jha, A. Mills, and P. Musgrove. 2006. Disease Control Priorities in Developing Countries. Second edition. Washington, DC: World Bank and Oxford University Press

## Section 5. Maternal Health Engagement Strategy

### **Concept Note: Strategic communication program for engaging stakeholders on the Bank's response to improving maternal health**

#### *Context*

Of all the Millennium Development Goals, No. 5—improving maternal health—has made the least progress. The World Bank's Health, Nutrition and Population (HNP) Sector is leading renewed institutional efforts on this front, seeking new approaches to improve maternal health in developing countries. The challenge is not a technical one—the knowledge on effective intervention strategies to reduce maternal mortality is quite well developed. The challenge is one of gaining traction, finding new, multi-sectoral entry points for influencing priorities, approaches, and ultimately outcomes. To succeed, HNP needs to adopt an engagement strategy that will garner the support and focus of multiple stakeholders, both within the World Bank Group and elsewhere, who are on the front lines of knowledge, operations, and policy dialogue. In particular, stakeholders will have to work directly with the networks and regions where countries have high maternal mortality or poor reproductive health outcomes. Recognizing the urgency—and complexity—of this challenge, HNP is seeking to develop a strategic communication program to support its response to improving maternal health.

#### *Objectives of the engagement strategy*

This strategic communication program would be a long-term effort to achieve cross-sectoral

engagement at the World Bank to improve maternal health. It would be initiated with a focused, short-term (six-month) communication program to support HNP in its upstream efforts to create a “community of practice” on maternal mortality, which would in turn help pave the way for the rollout of an action plan. It would become an integral part of the overall Pop/RH Action Plan, which is expected to be presented to the Board in December 2009.

The key stakeholders would be World Bank technical and operational experts, country directors/managers, task team leaders, and sector managers best positioned to have an impact on the design of operations and health-system policy dialogues in key countries.

#### *Approach*

The program's approach would be cross-sectoral—drawing not just on colleagues in HDN, but also other networks (e.g., PREM, DEC)—since maternal mortality is affected by multiple factors. It must also be regionally driven. Country directors in priority countries would need a strong awareness of maternal health issues and ways to address/impact them, combined with a real commitment to successful outcomes. It would also be multi-pronged, targeting both internal and external stakeholders through a wide range of activities.

These activities will include:

- ***Assembling the stakeholders:*** The first step would be to identify the key World Bank Group colleagues/professionals who are engaged in research/policy dialogue/program implementation related to ma-

ternal health outcomes, both from within and outside the health sector. The individuals thus identified would then be linked in several possible ways: (i) a network, such as a list-serve, would be developed that would help the group to communicate ideas and discuss constraints and bottlenecks, much as a “support group”; (ii) personal communication between these individuals would be promoted in a variety of ways (short bulletins focusing on issues of interest, other publications, BBLs, speeches, internal and external events, learning weeks, seminars, etc.). Teams from countries with high maternal mortality and fertility rates that are working on CASs and/or health projects will also be engaged as a part of this strategy.

- **Communicating knowledge:** Next, available knowledge needs to be communicated with these stakeholders in an effective way. The challenge will be to develop effective ways of translating theory into practice, particularly in resource-constrained circumstances. These practices then need to be communicated widely. Updated statistics, FAQs, latest news on new developments in the field, case studies/success stories—all these would be effective in communicating relevant information. A review of the knowledge available on maternal health to the *community of practice* would also need to be addressed in terms of communication impact, revamped as needed, and put into the overall strategic context for engagement and influence.
- **Designing tailored messages:** Messages around maternal health and efforts to re-

duce maternal mortality would need to be defined for various audiences.

- **Developing materials:** While the strategy would likely focus more on engagement, especially given the short-term length of the assignment, a review of materials (fact sheets, core presentations, etc.) either existing or recommended to be developed, could also be useful.

### Scope of work

- **Development of strategy and action plan:** A senior-level communication strategist to undertake a thorough diagnostic of the communication environment, including interviewing key stakeholders regarding their views on the issues, perceived roadblocks and opportunities, points of entry for engagement, etc. This process, along with corresponding desk reviews of materials and websites, should elicit enough information for the development and presentation of a strategy and action plan to include a detailed proposed engagement plan, along with review/recommendations for knowledge, messages and materials.

Senior Staff (or STC) Communication Strategist: 4–6 weeks.

- **Implementation:** Senior-level oversight on a part-time/review basis, with junior level staff for implementation of key events or products (e.g., seminars, websites, etc.) over 3–4 months.  
Senior Staff (2–4 weeks); Junior Staff (4–8 weeks)

*Resources & timeline*

- **Resources:** Senior STC/Staff (approximately \$4,000/week)=\$24,000 to \$40,000  
 Junior staff/STC (approximately \$2,000/week):=\$8,000 to \$16,000
- **Time Line:**

Month	Activities
August	<ul style="list-style-type: none"> <li>• Concept Approval, TORs, Identification of Resources</li> <li>• Staff/STC Contracting</li> </ul>
Aug-Sept	<ul style="list-style-type: none"> <li>• Communication Diagnostic</li> <li>• Strategy &amp; Action Plan Development</li> </ul>
Sept-Dec	<ul style="list-style-type: none"> <li>• Implementation, Engagement, Materials/Production</li> <li>• Oversight, Quality Control and</li> <li>• Incorporation on the Pop/RH Action Plan</li> </ul>

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