

# Maternal Health Supplies in Uganda

By Elizabeth Leahy  
Madsen, Jennifer  
Bergeson-Lockwood,  
and Jessica Bernstein



**Population Action**  
INTERNATIONAL  
HEALTHY FAMILIES HEALTHY PLANET

# Population Action

INTERNATIONAL  
HEALTHY FAMILIES HEALTHY PLANET

Population Action International uses research and advocacy to improve access to family planning and reproductive health care across the world so women and families can prosper and live in balance with the earth. By ensuring couples are able to determine the size of their families, poverty and the depletion of natural resources are reduced, improving the lives of millions across the world.

# TABLE OF CONTENTS

<b>Acknowledgments</b>	<b>2</b>
<b>List of Acronyms</b>	<b>3</b>
<b>1 Executive Summary</b>	<b>4</b>
<b>2 Introduction</b>	<b>8</b>
<b>3 Country Context</b>	<b>12</b>
<b>4 The Health System Structure</b>	<b>16</b>
<b>5 Financing of Maternal Health Supplies</b>	<b>26</b>
<b>6 Maternal Health Supplies Forecasting, Procurement and Logistics</b>	<b>28</b>
<b>7 Development Partners and Civil Society</b>	<b>32</b>
<b>8 Continuum of Care: Family Planning, Maternal, Newborn and Child Health</b>	<b>38</b>
<b>9 Advocacy Entry Points</b>	<b>44</b>
<b>Appendix 1</b> Policies Related to Maternal Health Supplies	<b>50</b>
<b>Appendix 2</b> Case Study Interview Subjects	<b>54</b>
<b>Appendix 3</b> References	<b>56</b>
<b>Endnotes</b>	<b>60</b>

## ACKNOWLEDGMENTS

This project was supported by the Maternal Health Task Force and the Partnership for Maternal, Newborn & Child Health. Many colleagues granted extensive and helpful background interviews on maternal health and supplies issues, including Marian Abernathy (Ipas), Frances Ganges (White Ribbon Alliance), Andrea Gay (United Nations Foundation), Patricia Gomez (Jhpiego), Deborah Gordis (CARE), Suzanne Hill (WHO), Joseph Johnson (Save the Children USA), Marge Koblinksy (John Snow, Inc.), Nahed Matta (USAID), Winnie Mwebesa (Save the Children USA), Leslie Parykewich (John Snow, Inc.), Theresa Shaver (White Ribbon Alliance), Mary Ellen Stanton (USAID), Catharine Taylor (PATH) and Elizabeth Westley (Family Care International). Thanks are extended to Peter Ogwang Ogwal and Kadi Toure, who reviewed a draft of the study, Rebecca Copeland, Peter Okwero and Jennifer Wanyana, who answered additional questions, and Jennifer Johnson, who edited the report. At Population Action International, Suzanne Ehlers, Karen Hardee, Caitlin Horrigan, Mercedes Mas de Xaxás, Wendy Turnbull and Carolyn Vogel provided guidance and useful input on the research and report. Michael Khoo and Roberto Hinojosa oversaw communications strategy and Bryn Farrar designed the report.

# LIST OF ACRONYMS

<b>AMTSL</b>	Active Management of the Third Stage of Labor	<b>NAWMP</b>	Network of African Women Ministers and Parliamentarians
<b>ANC</b>	Antenatal care	<b>NDA</b>	National Drug Authority
<b>AOGU</b>	Association of Obstetricians and Gynaecologists of Uganda	<b>NDP</b>	National Development Plan
<b>CPR</b>	Contraceptive prevalence rate	<b>NGO</b>	Non-governmental organization
<b>Danida</b>	Danish International Development Agency	<b>NMS</b>	National Medical Stores
<b>DFID</b>	Department for International Development	<b>PEAP</b>	Poverty Eradication Action Plan
<b>EARHN</b>	Eastern Africa Reproductive Health Network	<b>PMTCT</b>	Prevention of mother to child transmission
<b>EDL</b>	Essential Drugs List	<b>POPPHI</b>	Prevention of Postpartum Hemorrhage Initiative
<b>EmOC</b>	Emergency obstetric care	<b>RHU</b>	Reproductive Health Uganda
<b>HC</b>	Health Center	<b>SIDA</b>	Swedish International Development Cooperation Agency
<b>HSSP</b>	Health Sector Strategic Plan	<b>TBA</b>	Traditional birth attendant
<b>JMS</b>	Joint Medical Store	<b>UNFPA</b>	United Nations Population Fund
<b>MCHIP</b>	Maternal & Child Health Integrated Program	<b>UNICEF</b>	United Nations Children's Fund
<b>MDGs</b>	Millennium Development Goals	<b>UPMB</b>	Uganda Protestant Medical Bureau
<b>MMR</b>	Maternal mortality ratio	<b>UPMO</b>	Uganda Private Midwives Organization
<b>MOH</b>	Ministry of Health	<b>USAID</b>	United States Agency for International Development
<b>MSH</b>	Management Sciences for Health	<b>VHT</b>	Village Health Team
<b>MSU</b>	Marie Stopes International Uganda	<b>WHO</b>	World Health Organization
<b>MVAs</b>	Manual vacuum aspirators		

## 1

## EXECUTIVE SUMMARY

In Uganda, maternal mortality appears to have declined over the past decade, measured at 505 deaths per 100,000 live births in 2000/01 and 435 deaths in 2006, a ratio that is among the lowest in the Eastern Africa region. However, maternal mortality would need to decline to 131 deaths per 100,000 live births by 2015 to meet the Millennium Development Goal for maternal health.

Improving access to supplies (medicines and equipment) is an essential component of strengthening maternal health programs and outcomes. Maternal health challenges cross the entire health system, with deeply embedded issues of human resources, infrastructure, competing priorities and community engagement. Shortages of supplies are identified by Uganda's government as consequences of major constraints on the country's health system, including underfunding, inefficiencies and a weak infrastructure. These shortages are also a direct barrier to utilization and positive outcomes at health facilities. Supplies are a tangible and visible entry point to raise awareness and commitment to maternal and reproductive health.

This report tracks four maternal health supplies: oxytocin, misoprostol, magnesium sulfate and manual vacuum aspirators (MVAs). These supplies address three of the most common direct causes of maternal mortality in Africa. This study assesses the factors that inhibit access to maternal health supplies in Uganda and the importance of overcoming shortages of these supplies to achieve improved maternal, reproductive, newborn and child health.

Availability of the four tracer supplies varies across Uganda's health system. Oxytocin, an injection used to prevent and treat postpartum hemorrhage, is distributed throughout the country, and availability is fairly high. It can be administered by midwives, clinical officers and doctors, and most health workers have been

trained on its use. The government of Uganda approved the use of misoprostol, a tablet, for prevention and treatment of postpartum hemorrhage in 2008; many health providers in Uganda have long been supportive of and actively using it. Most health workers in Uganda are permitted to administer misoprostol, providing they have been trained in its use. Magnesium sulfate, administered by injection or intravenously to treat severe pre-eclampsia and eclampsia, does not seem to be widely available in Uganda. Few providers in lower-level facilities have been trained in its use or are actively using it. MVAs, equipment used to treat incomplete abortion, are unlikely to be widely available or used at lower-level facilities, and are also subject to sensitivities around the issue of abortion. Many MVA kits remain unused at facilities because providers have either not been trained at all or have not received refresher training.

The government of Uganda is widely viewed as committed to maternal health. A large number of policies related to strengthening maternal health have been prepared and others are in development, including the Road Map for Accelerating the Reduction of Maternal and Neonatal Mortality and Morbidity. The availability of supplies is described as inadequate in the National Development Plan, the draft National Health Policy and the National Population Policy, and maternal and child health is one of four clusters of the minimum health care package. The most recent available Essential Drugs List includes oxytocin and magnesium sulfate, but not misoprostol. However, the government's political commitment to maternal health and the recognition of supplies challenges in official policies are not always sufficiently reinforced by strong implementation or financing. None of the policies reviewed for this report include quantified targets to measure improvements in access to supplies.

Many of the government policies addressing maternal health highlight the need to increase the rate of deliveries that occur in health facilities. Despite an antenatal care rate above 90 percent, just over 40 percent of women deliver in a health center or hospital, meaning that half of pregnant women make contact with the health system during pregnancy but do not return to give birth. The low rate of facility-based delivery is attributable to multiple barriers women face in accessing the health system. Women have no chance of accessing supplies unless they reach a place where those supplies are provided. Nearly half of women say that they are concerned that medicines and supplies will not be available at facilities. Women may expect from previous experience that if they make the effort to reach a clinic or hospital, the facility will have no supplies or that they will be asked to purchase medicines themselves. Stakeholders are in widespread agreement that the gap between high antenatal care rates and the low share of facility-based deliveries is a priority area for Uganda's maternal health program.

The health system challenges faced by the government of Uganda extend to the financing of medicines and supplies. Given Uganda's rapidly growing population of women of reproductive age, the government must plan concertedly for the long-term costs of maternal health. The government budget only funds 30 percent of requirements for essential medicines, and 72 percent of government health units have a monthly stockout of at least one medicine. The Ministry of Health's budget line item for reproductive and maternal health supplies is often vastly underspent against what is allocated, with less than ten percent of designated funds actually disbursed. The Health Sector Strategic Plan (HSSP), supported by the government and donors, also contains a credit line for medicines. Of the four tracer commodities, oxytocin is funded mostly from the HSSP credit line, and to a lesser extent

## The health system challenges faced by the government of Uganda extend to the financing of medicines and supplies.

from the government's budget line item for reproductive health supplies. The government has not yet funded the purchase of any misoprostol, with the initial quantity donated through partnership with a foreign organization. MVA kits are funded by the budget line item, while magnesium sulfate is funded primarily through the credit line. Although public sector health care is mandated to be free of charge, government facilities typically ask patients to purchase their own medicines at pharmacies if supplies are stocked out.

In addition to low levels of financing, maternal health also faces supply chain problems across the health system. There is no regular multi-stakeholder forecasting for maternal health supplies. Challenges can begin at the top of the supply chain for the many supplies that are not manufactured locally, with a lengthy registration process and low profit margins resulting in little competition and higher prices paid by the government. Officials at the central level often describe quantification of need from lower levels of the health system as inaccurate. The parastatal National Medical Stores sometimes supplies too little of what facilities request and an excess of commodities that are not needed. In addition, orders are not always distributed to districts on time.

The private sector is responsible for a large share of health services in Uganda, including nearly one-third of facility-based births. The government and the private sector are active



The Joint Medical Store warehouse houses an array of products to be packaged into clients' orders. (Jennifer Bergeson-Lockwood/PAI photo)

collaborators in the health sector. Private nonprofit organizations face many of the same challenges that burden the country's public sector health system; yet, the private sector is widely perceived as being a more reliable source of supplies than government facilities. Unlike government institutions, private facilities typically charge official user fees for their services, often a flat fee that includes costs for all associated supplies. In the private nonprofit sector, the supply chain is described as well-functioning, because facilities are able to order drugs based on their needs and on their own timeline from the Joint Medical Store (JMS). However, due to its faith-based orientation, JMS does not supply misoprostol, MVAs or contraceptives.

Unlike family planning, donors have not provided dedicated, sustained and large-scale funding for maternal health supplies in Uganda. Many bilateral donors now provide resources through sector support or direct budget modalities. Despite the small amount of dedicated funding for maternal health supplies, donors remain active and committed to maternal health and other reproductive health issues through various projects and working groups, and are making an effort to harmonize their support to the health sector. Uganda supports a robust civil society, including both national and international organizations, working to improve maternal health. Many of these organizations are beginning or expanding their support for maternal health, including new projects with supplies components. Civil society organizations also

provide technical guidance to the government and serve as strong voices for advocacy, often in partnership with health care providers, parliamentarians and donors.

The “continuum of care” approach to health services includes integrated maternal, newborn and child health care from the period before pregnancy through childhood. At the policy level, the government of Uganda is increasingly focusing on integrating newborn health into maternal and child health programs. Two new policies—a newborn intervention framework and a child health strategy—will further link these health areas. At the service delivery level, facilities are intended to provide integrated maternal, newborn and child health care, but their capacity is often limited by human resource and equipment shortages, including those of maternal, newborn and child health supplies. For example, only two out of eight Health Center II facilities in a recent survey had delivery equipment sterile and ready for use. Only one out of eight facilities had resuscitation equipment for newborns and Ambu bags ready for use. For the majority of women who do not deliver their babies in facilities, the continuum of care may be more piecemeal. A woman might access family planning from a community-based agent, be assisted at birth by a traditional birth attendant, and have to walk five kilometers to a health center when she or her child is sick.

The following recommendations were identified by stakeholders in Uganda as priority areas and entry points for future advocacy on maternal health supplies:

- Strengthen the referral system
- Actively raise awareness at the community level
- Consider new financing approaches to overcome economic barriers
- Support and engage potential champions
- Monitor the national budget for reproductive and maternal health
- Effectively utilize donor resources
- Enhance the supply chain
- Prioritize family planning
- Address the constellation of human resource issues in the public sector, including training, remuneration and workload
- Strengthen the continuum of care through promoting government support in and beyond the health sector, ensuring policy implementation, using supplies as a monitoring indicator and integrating programming when efficient

Unlike family planning, donors have not provided dedicated, sustained and large-scale funding for maternal health supplies in Uganda.

# 2

## INTRODUCTION

This study assesses the factors that inhibit access to maternal health supplies in Uganda and the importance of overcoming shortages of these supplies to achieve improved maternal, reproductive, newborn and child health. The study builds on a decade of research and advocacy at the global, regional and national levels aimed at increasing availability of certain reproductive health supplies. While shortages and stockouts of contraceptives and condoms are now widely recognized and addressed through a variety of means—national contraceptive security plans, country coordination committees, budget line items, shipment monitoring and logistics management tools, inclusion in development plans and a global coalition of partners—to date there has not been a similar sustained focus on other reproductive health supplies, including those for maternal health.

In Uganda, as in other countries, maternal health and other elements of sexual and reproductive health are inextricably linked. Uganda has a very high fertility rate and two-fifths of married women have an unmet need for family planning, meaning that women have more children than they want to have, in part due to lack of access to contraceptives. Maternal mortality has declined somewhat in recent years, but remains far off track from national and international goals. Shortages and stockouts of contraceptives and condoms as well as supplies to treat the leading causes of maternal mortality and morbidity are an ongoing challenge. Yet maternal and reproductive health care sometimes treated independently from each other and from newborn and child health.

This report is intended to complement the knowledge gained among the reproductive health supplies community by outlining the challenges and opportunities related to maternal health supplies in Uganda and to provide an evidence base, informed by local expertise, for future

advocacy around ensuring access to reproductive, maternal, newborn and child health. While the findings may be most valuable for advocates and stakeholders in Uganda, as they are directly tied to the specific environment and situation in that country, advocates in the region and globally should find that the study addresses many of the barriers and entry points for maternal health supplies that are applicable in other settings. The case study should also inform donors and partner organizations as programs are implemented and funding decisions are made.

The case study describes the health system structure, including policy environment, in both the public and private sectors; financing of maternal health supplies; forecasting, procurement and logistics; and development partners and civil society active on maternal health. The study also includes a section on the continuum of care, outlining the ways in which family planning, maternal, newborn and child health supplies are and are not linked at the policy level and in service delivery. The report concludes by offering entry points for advocacy around maternal health supplies and the continuum of care, all of which are derived from the insights of stakeholders working on maternal health supplies and the continuum of care in Uganda. An appendix provides summaries of government policies that influence and guide maternal health programs and, in turn, access to maternal health supplies.

This report tracks four maternal health supplies: oxytocin and misoprostol (used for the prevention and treatment of postpartum hemorrhage), magnesium sulfate (used for the treatment of pre-eclampsia and eclampsia) and manual vacuum aspirators (MVA, used for the treatment of incomplete abortion). Although these are just a few of the wide array of supplies needed for high-quality maternal health care, they were selected due to their direct impact on some of the most common causes of maternal

## Progress in reducing maternal mortality and morbidity is possible—but not happening quickly enough to reach global goals.

mortality. In Africa, the leading direct causes of maternal mortality are postpartum hemorrhage (34 percent of all maternal deaths in the region), sepsis (ten percent), hypertensive disorders including pre-eclampsia and eclampsia (nine percent), HIV/AIDS (six percent), obstructed labor and abortion (each four percent).<sup>1</sup> Commodities for treating some of these causes, such as antibiotics and antiretrovirals, were not included in this study due to their wide application for non-maternal health conditions. In the context of this study, “supplies” refers to medicines and medical equipment that promote improved health outcomes. The terms “commodities” and “products” are sometimes used interchangeably.

### Maternal Health

Across health and other areas of development, maternal health displays particularly strong inequities in outcomes: “The difference in level of risk [for maternal death] between developed and developing countries shows the widest disparity in all human development indicators.”<sup>2</sup> Research by the World Health Organization (WHO) and others found that women in developing countries face a one in 75 lifetime risk of maternal death compared to a one in 7,300 chance in developed countries. Two-thirds of all maternal deaths occur in 13 countries: Afghanistan, Angola, Bangladesh, China, Democratic Republic of the Congo, Ethiopia, India, Indonesia, Kenya, Nigeria, Pakistan, Tanzania and Uganda (some, but not all, of these countries have a much lower rate of maternal death on a per capita basis).<sup>3</sup>

Progress in reducing maternal mortality and morbidity is possible—but not happening quickly enough to reach global goals. Although the direct causes of maternal mortality are treatable, three delays in addressing complications have been identified: a delay in deciding to seek care, a delay in reaching a facility or service delivery point, and a delay in

care being provided.<sup>4</sup> Contributors to the 2006 *Lancet* series on maternal health reported that “In terms of the maternal mortality ratio, evidence suggests that a reduction of 75% is achievable within a 25 year timeframe.”<sup>5</sup> In 2007, global estimates indicated that maternal mortality would have to decline by 5.5 percent annually to achieve the fifth Millennium Development Goal (MDG), but rates have only dropped by an average of one percent per year globally, and only 0.1 percent per year in sub-Saharan Africa.<sup>6</sup> Rates of coverage of skilled attendance at birth have been particularly stagnant in eastern and southern Africa.

In 2010, newly published research suggested that maternal mortality ratios (MMRs) have been significantly declining across much of the developing world, in contrast to a “widespread perception that progress in maternal mortality has been slow, and in many places non-existent.”<sup>7</sup> The authors estimated the annual number of global deaths from maternal causes at 342,900 in 2008, a decrease from more than half a million annual deaths in 1980. This progress is attributed to lower fertility rates, higher incomes (which can improve access to health care), higher educational attainment for girls and women, and improved coverage of skilled attendance at birth. Still, despite this dramatic estimated improvement in maternal health, only a small share of countries are on track to achieve the fifth MDG.

### A Focus on Supplies

Though maternal health has been widely studied, less attention has been devoted to the access, financing and distribution—the “security”—of maternal health supplies, especially at the global level. A recent exception is a series of six country

case studies conducted jointly by the United Nations Population Fund (UNFPA) and WHO that considered access to lifesaving maternal and reproductive health supplies, including ergometrine, oxytocin, magnesium sulfate and three antibiotics, in Ethiopia, Laos, Mongolia, Nepal, North Korea and the Philippines.<sup>8</sup> The case studies provide detailed information on need and demand, treatment guidelines, procurement, stock levels, storage, finances and coordination related to maternal health supplies in each country. In the six countries studied, in addition to some positive developments, the reports found occurrences of stockouts, supplies missing from key policies, insufficient information among service providers, supply chain breakdowns, over-reliance on donor funding and poor coordination across sectors.

This case study and a parallel report on Bangladesh are intended to complement the existing literature by evaluating issues that affect access to maternal health supplies through an advocacy lens. The challenges span the entire health system, with deeply embedded issues of human resources, infrastructure, competing priorities and community engagement, among others. The United Kingdom's Department for International Development (DFID) enumerates how health system capacity requirements for maternal health are different than those for family planning:

*Unlike immunisation and family planning, [maternal health] cannot be addressed in poor policy environments through vertical projects outside the health system. An important reason for lack of progress in maternal health is lack of attention to upgrading the wide range of components of the health system that need to be in place.<sup>9</sup>*

Supplies shortages are both a consequence of weaknesses in the health system, such as low

levels of funding and insufficient provider training, and a contributing factor in poor health outcomes, by inhibiting utilization of the health system. Programs and funding will not succeed without incorporating and addressing the entire range of barriers. However, as the decade of advocacy on reproductive health supplies has shown, supplies are a tangible and visible entry point to raise awareness and commitment.

While supplies for reproductive and maternal health remain inaccessible for many people, research documenting these shortfalls and their causes can inform advocacy efforts to improve access to supplies and also build a case for increased commitments to maternal health more broadly. With advocacy for maternal health supplies in a nascent stage, an evidence base contributes to understanding of the scope and depth of challenges. It is important to know not only what is and is not on the shelves of clinics and hospitals, but why. For civil society and others working on the issue, this range of knowledge informs targeted advocacy efforts to address the array of financial, policy and logistics issues that affect the availability of supplies.

## Methodology

This report builds on a decade of research and advocacy on reproductive health supplies, primarily contraceptives and condoms, including Population Action International's 2009 case studies of reproductive health supplies in six countries (among them Uganda and Bangladesh). This case study is based on interviews conducted in Uganda in February and March 2010 (see Appendix 2 for a complete list of in-country contacts), and background interviews with stakeholders and experts on maternal, newborn and child health in other regions. Information was also collected through a review of relevant policy and programmatic documents and research literature (see Appendix 3 for a complete list of references).

**TABLE 1. DEMOGRAPHIC AND REPRODUCTIVE HEALTH INDICATORS FOR UGANDA**

Total population, 2005*	28.7 million
Total population, 2025 (medium-fertility variant)*	53.4 million
Total population, 2050 (medium-fertility variant)*	91.3 million
Population of women ages 15-49, 2005*	6.1 million
Population of women ages 15-49, 2025 (medium-fertility variant)*	12.8 million
Population of women ages 15-49, 2050 (medium-fertility variant)*	24.9 million
Total fertility rate (births per woman), 2006†	6.7
Contraceptive prevalence rate (modern methods), currently married women ages 15-49, 2006†	18 percent
Unmet need for family planning, currently married women ages 15-49, 2006†	41 percent
Maternal mortality ratio, deaths per 100,000 live births, 2005‡	550
Maternal mortality ratio, deaths per 100,000 live births, 2006§	435
Maternal mortality ratio, deaths per 100,000 live births, 2008**	352
Antenatal coverage from trained provider, 2006†	94 percent
Skilled attendance at birth (medically trained provider), 2006†	42 percent
Delivery in a health facility, 2006†	41 percent (29 public, 12 private)
Neonatal mortality rate (age less than 28 days) per 1,000 live births, 2006†	29
Infant mortality rate (ages 0-1) per 1,000 live births, 2006†	76
Child mortality rate (ages 1-4) per 1,000 live births, 2006†	67

Sources:

\* United Nations Population Division 2009

† Uganda Bureau of Statistics and Macro International Inc. 2007

‡ World Health Organization, UNICEF, UNFPA and The World Bank 2007

§ Uganda Bureau of Statistics and Macro International Inc. 2007

\*\* Hogan, Foreman, Naghavi, Ahn, Wang, Makela, Lopez, Lozano and Murray 2010

# 3

## COUNTRY CONTEXT

One of the most striking aspects of maternal health in Uganda is the discrepancy between the very high rate of antenatal care (ANC)—more than 90 percent of pregnant women receive at least one antenatal care visit—and the much lower rate of facility-based deliveries. Just over 40 percent of women deliver in a health center or hospital, meaning that half of pregnant women make contact with the health system during pregnancy but do not return to give birth. An even smaller percentage of women (26 percent) receive postpartum care.

There is a striking division in facility-based care along geographic lines: Almost 80 percent of women living in urban areas deliver in a health facility, compared to just over one-third of rural women. Among women who do receive antenatal care, only half receive four or more visits during their pregnancy. Only 35 percent of women who obtain antenatal care are provided with information about how to recognize complications during pregnancy. Most women who do receive skilled attendance at birth, typically in facilities, are assisted by a nurse or midwife. However, nearly half of all women are assisted only by a traditional birth attendant or a friend or relative and another ten percent deliver alone.<sup>10</sup>

The low rate of facility-based delivery is attributable to a number of serious challenges women

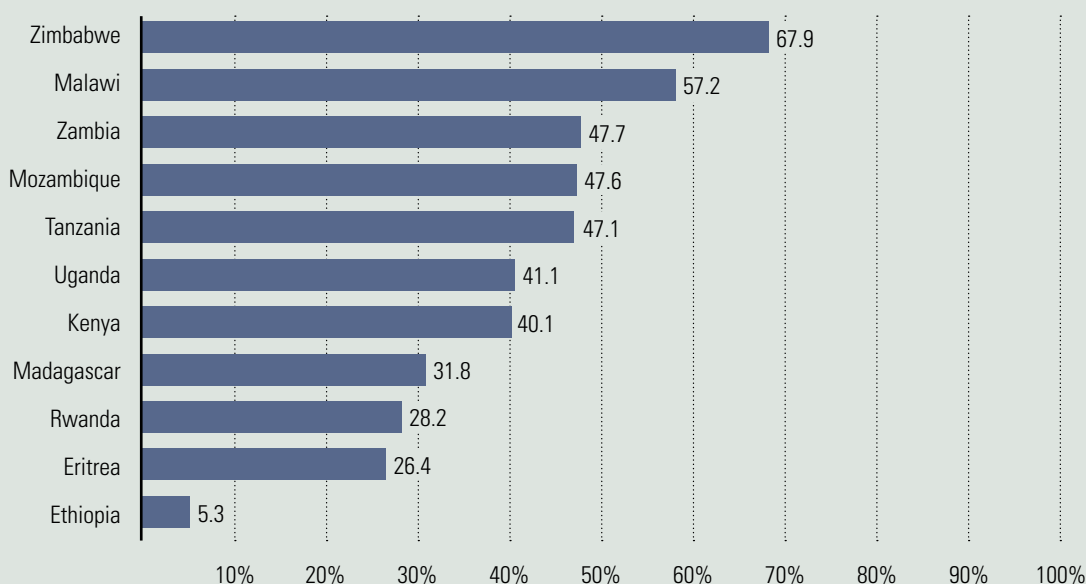
face in accessing the health system. Nearly half of women say that they are concerned that medicines and supplies will not be available at facilities. An inability to afford treatment costs is the most commonly cited barrier, with distance to health facilities and transport difficulties also serious concerns.<sup>11</sup> Providers report that economic concerns are a major contributor to the large gap between high antenatal coverage and the low facility-based delivery rate: If a woman learns her pregnancy has no known problems during an antenatal care visit, she may prefer to conserve resources and deliver at home.

Over 5,000 Ugandan women die each year from maternal-related causes.<sup>12</sup> The most common direct causes of maternal deaths that occur in facilities are hemorrhage (42 percent), obstructed labor (22 percent), abortion complications (11 percent) and ruptured uterus (10 percent).<sup>13</sup> Indirect factors tied to maternal mortality include “poor fertility regulation of early pregnancy in adolescents, short pregnancy intervals and a generally high total fertility level...in part due to an overall low use of contraceptives, [and] limited capacity of health facilities to manage abortion/miscarriage complications.”<sup>14</sup> HIV prevalence and malaria also contribute to maternal morbidity.

Uganda’s maternal mortality ratio appears to have declined over the past decade, measured at 505 deaths per 100,000 live births in 2000/01 and 435 deaths in 2006. However, the source of these estimates emphasizes that the 2006 figure should be treated with caution, due to a small sample size and the fact that the resulting figure contradicts other maternal health indicators. According to the survey, “it is impossible to say with confidence that maternal mortality has declined.”<sup>15</sup> A dataset of global estimates on maternal mortality published in 2010 calculated Uganda’s maternal mortality ratio as 352 deaths per 100,000 live births in 2008.<sup>16</sup>

Nearly half of women say that they are concerned that medicines and supplies will not be available at facilities.

**FIGURE 1. RATES OF FACILITY-BASED DELIVERY IN EASTERN AFRICA<sup>18</sup>**



Uganda's maternal mortality ratio is among the lowest in the Eastern Africa region (Figure 1), higher only than that of Kenya (414) among the countries for which recent demographic survey data are available. Maternal mortality ratios in Malawi (984), Rwanda (750) and Ethiopia (673) are the highest measured in the region in the current decade. Uganda's rate of facility-based delivery, at 41 percent, is the median among 11 countries in the region; half have higher rates and half are lower. Zimbabwe has the highest rate of facility-based delivery in the region (68 percent) and Ethiopia the lowest (five percent).<sup>17</sup>

Many stakeholders describe the reduction in maternal mortality as one of the main achievements of Uganda's maternal health program, although others cite the questions surrounding the survey data to suggest that

the rate has stalled. Other successes include the expansion of health services at lower levels, including sub-district health centers, which provide access closer to women's homes. The government is widely described as politically committed to maternal health, with its efforts to expand the number of health workers and community health volunteers lauded, and the national program to prevent mother-to-child transmission (PMTCT) of HIV is also considered successful.

Despite the momentum towards expanded access to health care and political commitment, the challenges faced in further reducing maternal mortality and morbidity are described as enormous. Many women must still travel long distances to access health care, a particular problem when pregnancy-related complications

The family planning program, which can reduce the number of unintended pregnancies that contribute to high maternal mortality, is especially weak and does not receive the same degree of political support as maternal health.

arise. Health workers are too few in number, and those who are posted receive low salaries and are often on duty for excessive hours. Although public sector services are ostensibly free, patients are often asked to purchase their own medicines and sometimes to make unofficial payments to facility staff.

Health system challenges are compounded by extensive poverty and the increasing demands on services placed by a population growing at one of the highest rates in the world. In just the five years between 2005 and 2010, the population of women of reproductive age in Uganda is projected to have grown by 1.2 million women, or 20 percent.<sup>19</sup> The family planning program, which can reduce the number of unintended pregnancies that contribute to high maternal mortality, is especially weak and does not receive the same degree of political support as maternal health. Uganda's unmet need for family planning, which stands at 41 percent nationally, is among the highest in the world; it could be as high as 65 percent in some districts in the north and northeast.<sup>20</sup>

Gender inequities also play a major role in maternal health: Nearly 40 percent of women say that their husband has the primary role in making decisions about their own health care. Among men, nearly half believe that the husband should make decisions about how many children to have.<sup>21</sup> This disempowerment continues during pregnancy and childbirth, with decisions about whether to seek assistance for

maternal complications often made by husbands and in-laws. Some stakeholders report that delays in seeking assistance are caused by lack of knowledge of complications, or cultural beliefs that blame the woman if complications arise.<sup>22</sup>

Stakeholders agree with the women who report that supplies for maternal health are not adequate to meet demand. In addition to the four commodities tracked in this report, other related medicines and equipment, such as blood, antibiotics, antimalarials, gloves and safe delivery kits, are often not available. Supply shortages are a widely cited barrier to increasing the rate of facility-based deliveries: Women may expect from previous experience that if they make the effort to reach a clinic or hospital, the facility will have no supplies or that they will be asked to purchase medicines themselves, despite ostensibly free public health care. As the growing population of women of reproductive age and efforts to motivate delivery at health facilities increase the demand for these supplies, it is critical for the government of Uganda, donors and civil society to address shortages and stockouts.

## MATERNAL HEALTH SUPPLIES AND THE MILLENNIUM DEVELOPMENT GOALS

Uganda has made progress towards many of the MDGs, but, like many other countries, its progress toward MDG5 has been slow. The country is also off-track for MDG4. MDG5 aims to reduce the maternal mortality ratio by three-quarters between 1990 and 2015. Uganda's 2006 maternal mortality ratio of 435 (the middle of three recent estimates for the country) would need to decline to 131 deaths per 100,000 live births by 2015.<sup>23</sup> With the exception of the share of women who receive at least one antenatal care visit, all of the targets for MDG5, including skilled birth attendance and contraceptive prevalence, also show slow progress.<sup>24</sup> The United Nations Development Programme in Uganda judges it "unlikely" that Uganda will achieve MDGs 4 or 5, due in part to only "fair" national support.<sup>25</sup>

The need to improve access to supplies is an essential part of the challenge to reaching the lagging Millennium Development Goals. In the field of reproductive health, "closing existing funding gaps on contraceptive supplies, family planning, and logistics" has been identified as a "quick win" key to achieving the MDGs.<sup>26</sup> The eighth MDG, aimed at developing a global partnership for development, includes a target to increase the share of the population with access to affordable essential medicines. Yet surveys in sub-Saharan Africa have found that, on average, selected basic medicines across the health system are only available in 38 percent of public sector facilities and 59 percent of those in the private sector.<sup>27</sup> As demand for health services rises and the population grows, the distribution costs as well as costs for the commodities themselves will also increase. By one estimate, the supply chain costs for procuring, storing and delivering essential medicines to service delivery points in Uganda add an additional 23 percent to the cost of the supplies.<sup>28</sup>

### MDG 5 – Improve Maternal Health

Target	Indicator
5.A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio.	5.1 Maternal mortality ratio
	5.2 Proportion of births attended by skilled health personnel
5.B: Achieve, by 2015, universal access to reproductive health.	5.3 Contraceptive prevalence rate
	5.4 Adolescent birth rate
	5.5a Antenatal care coverage (at least one visit)
	5.5b Antenatal care coverage (at least four visits)
	5.6 Unmet need for family planning

# 4

## THE HEALTH SYSTEM STRUCTURE

### **The Policy Environment for Maternal Health Supplies**

The government of Uganda is widely viewed as committed to maternal health. A large number of policies related to strengthening maternal health have been prepared and others are in development, including the Road Map for Accelerating the Reduction of Maternal and Neonatal Mortality and Morbidity, which was launched by First Lady Janet Museveni in 2008. The most recent available Essential Drugs List (EDL) includes oxytocin and magnesium sulfate, but not misoprostol. However, all four commodities traced in this report are incorporated into the new Reproductive Health Commodity Security Strategic Plan, which also outlines a budget for supplies. The availability of supplies is described as inadequate in the National Development Plan, the draft National Health Policy and the National Population Policy, and maternal and child health is one of four clusters of the minimum health care package. A number of new policies that will further shape the environment for essential health supplies, including those for maternal health, are currently under development, including strategies for newborn health, child health, and a public-private partnership for health. (See Appendix 1 for details of related policies.)

In 2010, the deputy speaker of Parliament called for the formation of a new ministry for maternal health.

In 2009, President Yoweri Museveni hosted a parliamentarians' conference on maternal health, and the first lady continues to make regular appearances at events related to safe motherhood. Parliamentarians have been actively maintaining a focus on maternal health, and their efforts have raised the profile of the issue, including in budgetary decision-making. In 2010, the deputy speaker of Parliament called for the formation of a new ministry for maternal health. The publication of policies such as the Road Map contributes "government direction and leadership and guides what people can do. Now various stakeholders can move," one donor representative affirmed.<sup>29</sup>

However, this political commitment is not always sufficiently reinforced by strong implementation or financing. "The policy environment is conducive, but priority is not given to serve women," one government official says. "The ministries and president say 'yes, we support,' but there is nothing in tangible terms."<sup>30</sup> The link to maternal health supplies is also not always strong. While some policies reference the need to improve access to maternal health supplies, none of the policies reviewed for this report include quantified targets to measure this improvement.

"Maternal health is complicated," says one longtime champion of the issue in Uganda. "It tests the health system."<sup>31</sup> A government official expresses disappointment at the slow pace of progress: "We should have moved much further than this on maternal health," explaining that the high rate of antenatal coverage shows that "mothers know the services are there."<sup>32</sup> The extremely low disbursement rate of the government's annual budget line item for reproductive health supplies, including those for the prevention and treatment of direct causes of maternal mortality, is an indication of the gap between policy rhetoric and expenditure of resources.

### Maternal Health in the Public Sector

Maternal health services and policies in Uganda’s public sector are administered at the national level by the Ministry of Health (MOH), except for training of new health workers, which falls under the purview of the Ministry of Education. The MOH leads a Maternal and Child Health cluster comprised of donors, service providers, private and non-governmental organization (NGO) partners and professional associations. The monthly meetings of the cluster have a focus on strengthening interventions; current efforts include increasing coverage of emergency obstetric care (EmOC), a stronger focus on newborn health, and integrating PMTCT. In addition to the MOH, maternal health is promoted at the policy level by the Population Secretariat, housed within the Ministry of Finance, Planning and Economic Development. Registration and quality testing of medicines are conducted by the National Drug Authority.

The public health system provides service that can be grouped in three geographic tiers: district-based health centers, regional referral hospitals and national referral hospitals. Within Uganda’s districts, an ever-growing number that now stands near 80, the lowest level of services

Human resources and infrastructure improvements are still lacking at many facilities.

are provided by government-supported Village Health Teams (VHTs), a community-based effort that had been rolled out to fewer than half of the districts, as of 2009.<sup>33</sup> Facility-based services include Health Centers (HC) II, III and IV, with each successive level offering a higher level of care and culminating in district hospitals (Table 2).

According to a 2003 assessment, “Efforts to further decentralize service delivery and more financing closer to the community level points to a commitment by government to improve maternal health services in the country.”<sup>35</sup> Through the process of decentralization, local governments in districts have assumed responsibility of administering health services through their own sector plans, following national policies. However, this commitment has not yet resulted in adequate service delivery for maternal health. The government recognizes that “While the principle

TABLE 2. UGANDA’S PUBLIC SECTOR HEALTH SYSTEM AT THE DISTRICT LEVEL<sup>34</sup>

Facility Type	Location
Health Center II	Parish, serves a population of approximately 15,000 (target population: 5,000)
Health Center III	Sub-county, serves a population of approximately 85,000 (target population: 20,000)
Health Center IV	County/sub-district, serves a population of approximately 190,000 (target population: 100,000)
District Hospital	District, serves a population of approximately 260,000 (target population: 500,000)



Supplies are stored at a Health Center IV in Kampala. (Elizabeth Leahy Madsen/PAI photo)

of decentralization is good, lack of capacity and resources, and lack of genuine community mobilization and participation have undermined its virtues in Uganda. There is also evidence to suggest that health core financial resources... do not reach HC III and community levels in sufficient amounts and sometimes these funds reach late.”<sup>36</sup>

Midwives and nurses are supposed to be posted at Health Centers II, III and IV, but in practice Health Centers II are often headed by nursing aides, who complete some secondary school and receive one month of training. Clinical officers (paramedics or junior doctors with three years of medical training) should be posted at Health Centers III and IV. Basic EmOC, including treatment of postpartum hemorrhage, eclampsia and post-abortion care using MVA, should be available at Health Centers III. However, with widespread staff shortages, one provider says “People come [to the facility], but we disappoint them here.” It is difficult for providers to prevent lengthy waits and offer personalized care when two clinical or nursing officers are responsible for 200 to 250 patients.<sup>37</sup>

The government has dedicated resources over the past several years to expanding the number of

Health Centers IV and ensuring their capacity to provide EmOC. Each Health Center IV should be staffed with a doctor and equipped with an operating theater that can provide comprehensive obstetric care, including caesarean sections and blood transfusions. However, these human resources and infrastructure improvements are still lacking at many facilities. Earlier commitments to expand access to facilities below the district level resulted in the construction of a large number of Health Centers IV, but they are now understaffed, as evidenced by a representative facility in Kampala that has a single doctor on call 24 hours a day, every day of the year.

Only three percent of Health Centers III are able to provide basic EmOC, although 99 percent are staffed with midwives. At the next level, less than eight percent of Health Centers IV meet the standards for basic EmOC, less than 10 percent can provide a caesarean section, and only 74 percent are fully staffed with midwives. Even among hospitals, just over half (53 percent) are able to provide all the functions of basic EmOC.<sup>38</sup> In the 2008 Road Map for maternal and newborn health, the government recognized that its efforts to expand access to high-quality care at the Health Center IV level had not yet been successful: “Most HC IVs lack functional operating

theatres and have inadequately skilled medical officers, unable to perform EmOC and newborn care tasks.”<sup>39</sup>

The highest level of public sector care in Uganda is provided at the country’s two national referral hospitals, Mulago and Butabika, both in Kampala. Mulago Hospital, the larger of these, receives about half of its patients as referrals from lower-level facilities, some located hours outside of the city. According to staff, it averages 60 deliveries daily, more than 20 percent of which are by caesarean section, with a staff ratio of one midwife for every six women in labor. According to a senior health care provider, the low ratio of staff to patients is caused by difficult “conditions of service,” including low pay, leading some staff to maintain side businesses in the private sector and others to leave Uganda to seek higher salaries in other countries.<sup>40</sup>

The government of Uganda is making a dedicated effort to phase out traditional birth attendants (TBAs), who receive no formal training, and increase the number of midwives and nurses. However, there are concerns about the level of training provided to some new health workers and the pace at which community outreach workers are being trained. To address the shortage of workers across the health sector, the government has introduced a new cadre of health worker, comprehensive nurses, to be posted at Health Centers III. With 2.5 years of training across a range of disciplines, comprehensive nurses are intended to manage many basic health concerns, and their training includes five to eight weeks of coursework on midwifery, considerably less than the 19 to 29 weeks of coursework included in the curricula of enrolled, registered and diploma midwives.<sup>41</sup> A UNFPA assessment finds that “The quality of comprehensive nurse-midwifery training is perceived to be poor...Hence comprehensive nurses have superficial knowledge of midwifery

## The government of Uganda is making a dedicated effort to phase out traditional birth attendants and increase the number of midwives and nurses.

and weak midwifery clinical competencies.”<sup>42</sup> Some health providers have received reports from facilities that comprehensive nurses are unable to recognize obstetric complications.<sup>43</sup>

Uganda’s public health system faces major financial and human resource challenges. The Ministry of Health reports that in late 2008, only 51 percent of human resource positions in health at the national level were filled.<sup>44</sup> Although there are an adequate number of trained midwives in the country to meet official staffing norms, the government acknowledges that the regulations of staffing two or three midwives at each facility are too low, and many midwives and other health workers are concentrated in urban areas.<sup>45</sup> A UNFPA assessment found a deficit of 36 percent in filled positions for midwives nationally, with significantly higher gaps in rural areas and in lower levels of the health system, especially Health Centers II.<sup>46</sup> Stakeholders report that the sector is affected by a brain drain of trained workers to other countries, and those who remain in Uganda are drawn to higher salaries outside the public sector.

The government has spent eight to nine percent of the national budget on health annually since the fiscal year beginning in 2005,<sup>47</sup> well below the target of 15 percent established by African health ministers in Abuja in 2001. Of total health expenditures in Uganda, the government plays the smallest role. According to the draft National Health Policy, half of health expenditures are borne by households, 35 percent by donors, and the remaining 15 percent contributed by the government.<sup>48</sup> Although user fees

## In-service training of public sector providers is notably weak in Uganda. The coverage of ongoing training does not reach all providers regularly.

were abolished in the public sector in 2001, health care providers and other stakeholders agree that patients at public sector facilities are frequently asked to purchase relatively inexpensive medicines and supplies when they are stocked out or in short supply.

Distance and infrastructure are major deterrents to obtaining skilled care. When referrals are needed, women face many delays. “Our areas are not equipped to handle transport if there are complications. We are not ready for home deliveries,” one provider explains.<sup>49</sup> Few ambulances are available to transport women to Health Centers III and IV, the lowest level where treatment of maternal complications is theoretically available—and the vehicles that do exist are not well-maintained.

The quality of care provided in the public sector may also inhibit or delay women from seeking medical assistance. Many stakeholders report that public sector providers can be rude to patients and that privacy is lacking. These problems are in turn attributed to an overwhelmed system. Salaries for health workers are low (trained midwives working in the public sector are paid 210,000 shillings, or about \$105, monthly)<sup>50</sup> and staff is severely overworked. In many facilities, the highest-level provider, whether midwife or doctor, must be available at all hours, every day.

In-service training of public sector providers is also notably weak in Uganda. The coverage of ongoing training, some provided by the Ministry of Health and some by private organizations with limited funding, does not reach all providers

regularly. If a trained midwife “doesn’t have an update for 10 years, at the end of the day she becomes a traditional birth attendant,” one official says.<sup>51</sup> This lack of training affects all four of the tracer commodities in this study, especially misoprostol, magnesium sulfate and MVAs.

### Maternal Health in the Private Sector

The private sector is responsible for a large share of health services in Uganda, including nearly one-third of facility-based births.<sup>52</sup> The private sector includes both for-profit and nonprofit entities. Forty-one percent of all hospitals in Uganda are private nonprofit.<sup>53</sup> Most of the private nonprofit hospitals and clinics fall within the purview of three faith-based medical bureaus (Catholic, Muslim, Protestant), which liaise between facilities, government and donors; advocate for resources; and provide technical assistance to enhance the quality of care at member facilities. Faith-based organizations thus play a major role in providing maternal health care in Uganda. Their role in family planning varies according to their religious affiliation. While Protestant facilities offer a range of family planning methods, Catholic facilities may only provide information about modern methods of family planning but not administer them.

The Uganda Protestant Medical Bureau (UPMB), for example, serves as the umbrella organization for 270 facilities in approximately 50 districts, including 15 hospitals and seven training institutions. UPMB has had a long-standing focus on maternal health, including a previous project on post-abortion care, and currently implements a 20-district effort on

maternal and newborn health. Closing the Gaps, a partnership with British NGO Interact Worldwide funded by the British lottery, focuses on strengthening EmOC capacity in facilities and building demand in communities. The project aims to increase comprehensive antenatal care, skilled attendance at birth, EmOC coverage, and prevention of mother-to-child transmission of HIV. Currently, UPMB reports that 70 percent of its Health Centers IV are functionally operating with surgical capacity and EmOC.

In addition to the network of faith-based facilities, maternal health care and deliveries are provided by some NGOs, such as the clinics within the PACE ProFam network; individual midwives who own and operate their facilities, some of whom are members of the Uganda Private Midwives Organization (UPMO); commercial hospitals and clinics catering to the wealthy; and, for many Ugandan women, traditional birth attendants in communities, who are untrained and unmonitored.

As an alternative to the parastatal National Medical Stores (NMS), private sector facilities are able to utilize the Joint Medical Store (JMS) as a source for purchasing medicines and equipment. However, JMS is jointly operated by Catholic and Protestant organizations and does not provide misoprostol, MVAs or contraceptives. While higher-level facilities may be able to purchase these supplies on the local market, “the bigger problem for us is contraceptives, because JMS doesn’t provide, and we need them up to Health Center III,” one private sector administrator explains. “It is difficult for low level facilities to go to pharmacies, so they rely on NMS, but the flow has not been reliable.”<sup>54</sup>

The government and the private sector are active collaborators in the health sector. A national policy on public-private partnership was developed earlier this decade, but has not yet been finalized.

Public and private facilities work together to refer to each other’s facilities and, in theory, avoid duplication of services. Government grants to private nonprofit facilities are managed by local governments at the district level.

Private nonprofit organizations face many of the same challenges that burden the country’s public sector health system. Retention of skilled personnel, including midwives, is difficult for facilities that are located in remote areas. Private sector facilities also often rely on the government for a large portion of their maternal health supplies, which can be problematic, as described below. Still, the private sector is widely perceived as being a more reliable source of supplies than government facilities. “The main reason our facility managers give us for being overwhelmed with patients is the lack of drugs” in the public sector, one private sector administrator says.<sup>55</sup>

### **Availability and Use of Tracer Supplies** **Oxytocin**

Oxytocin, an injection used to prevent and treat postpartum hemorrhage, is distributed throughout Uganda. It can be administered by midwives, clinical officers and doctors, and most health workers have been trained on its use. Availability of oxytocin or an alternative drug, ergometrine, is fairly high: Parenteral oxytocics are available in 74 percent of Health Centers III, 82 percent of Health Centers IV and 97 percent of hospitals.<sup>56</sup> This represents an improvement from 2004, when 32 percent of Health Centers IV and 42 percent of district hospitals had oxytocics in stock.<sup>57</sup> One official describes the transition from ergometrine to oxytocin in Ugandan health facilities as slow.<sup>58</sup> Although oxytocin (which is “relatively stable” at temperatures below 30°C<sup>59</sup>) is typically stored at room temperature in Uganda, ergometrine is very sensitive to heat and light, and is described by some providers as less effective. The United States Agency for International Development (USAID)-funded

The Joint Medical Store warehouse includes supplies of oxytocin, which is maintained in cold storage. (Elizabeth Leahy Madsen/PAI photo)



Prevention of Postpartum Hemorrhage Initiative (POPHI), which closed in late 2009, made inroads at increasing knowledge of oxytocin among providers through trainings on Active Management of the Third Stage of Labor (AMTSL).

### Misoprostol

The government of Uganda approved the use of misoprostol, a tablet, for prevention and treatment of postpartum hemorrhage in 2008 after a period of debate. The debate was extended given some officials' concerns that the drug would be used off-label for abortion, which is illegal in Uganda except to save the mother's life (an exception termed "medical abortion"). However, many health providers in Uganda have long been supportive of and actively using misoprostol for postpartum hemorrhage, as well as medical abortion and post-abortion care. Providers report that misoprostol is acceptable to users and often preferable to oxytocin because tablets are easier to administer and consume than an injection. However, according to the national guidelines, misoprostol is "an alternative uterotonic drug in settings where parenteral uterotonic drugs are not available or cannot be properly administered."<sup>60</sup> This policy follows the approach of the World Health Organization, which is also supported by UNFPA: Misoprostol is explicitly intended

to be used as a third choice, following oxytocin and ergometrine.<sup>61</sup> Most health workers in Uganda are permitted to administer misoprostol, providing they have been trained in its use. This includes "doctors, midwives, nurse-midwives, nurses, clinical officers, nurse assistants or nurse aides, and Village Health Teams."<sup>62</sup>

In 2009, Venture Strategies Innovations, an American company, provided an initial free supply of misoprostol for use by the Ministry of Health, and the two organizations are jointly training public sector providers. Training is described as scattered, and as of early 2010 was being piloted in 20 districts and the regional and national referral hospitals. Some providers report that the initial quantity of misoprostol has been too slowly distributed and is not consistently available even in major hospitals. In the private sector, an additional donor-funded supply of misoprostol was distributed beginning in 2009 by PACE, which is also training public and private sector providers in its use. The Ministry of Health plans to expand use of misoprostol in 2011 through a World Bank project on reducing maternal mortality.

### Magnesium Sulfate

Magnesium sulfate, administered by injection or intravenously to treat severe pre-eclampsia

and eclampsia, does not seem to be widely available in Uganda, which is acknowledged by the Ministry of Health. A representative of a donor agency reports having recently traveled to districts where health providers were unaware that the drug is available.<sup>63</sup> Few providers in lower-level facilities have been trained or are actively using it, and there are conflicting reports on whether midwives are permitted to. The Uganda Private Midwives Organization reports that few of its member midwives use magnesium sulfate due to a lack of training. One stakeholder believes that there has been insufficient emphasis of magnesium sulfate by the government, despite its inclusion in national guidelines. A government official suggests that providers are unaware that the drug is available through NMS. Some facilities are using an alternative drug, diazepam, which trials have found to be less effective than magnesium sulfate in treating eclampsia.<sup>64</sup>

### **Manual Vacuum Aspirators (MVAs)**

MVAs are equipment, rather than medicines, and are used to treat incomplete abortions and to administer abortions early in pregnancy. In Uganda, MVAs are unlikely to be widely

available or used at lower-level facilities. They are also subject to sensitivities around the issue of abortion, which is illegal in most cases. An estimated 300,000 unsafe abortions occur annually in Uganda, most among teenagers, and major complications develop in 23 percent of cases.<sup>65</sup> Previously, Mulago Hospital did not permit any evacuations of incomplete abortions during the night shift, in order to ensure strong supervision of providing staff.

Doctors, clinical officers and midwives who have received training are permitted to administer MVA kits. However, many MVA kits remain unused at facilities because providers have not been trained at all or have not received refresher training. MVAs are less likely to be available at faith-based facilities and others that rely on the private Joint Medical Store, which does not distribute them due to its partially-Catholic orientation.

### **Maternal Health Supplies at the Health Center IV Level**

A representative Health Center IV in Kampala visited during the research of this case study



Supplies are stored at a Health Center IV in Kampala. (Jennifer Bergeson-Lockwood/PAI photo)

Some providers report that the initial quantity of misoprostol has been too slowly distributed and is not consistently available even in major hospitals.

provides general outpatient care, HIV/AIDS testing and treatment, family planning, antenatal care, postnatal care, immunization and community health outreach in addition to deliveries, which number ten to 15 daily. The staff at the Health Center includes a single doctor, a nursing officer, two clinical officers, enrolled nurses and midwives and nursing assistants. Health Centers IV are intended to be able to treat maternal complications, but the operating theater of this facility is still under construction and it is able to provide normal deliveries only, with four to five women per day referred to Mulago Hospital for actual or potential complications. Although oxytocin is usually available, it was not on the day of the authors' visit, with only ergometrine in stock to address postpartum hemorrhage. The facility does not have misoprostol because its staff has not yet received training, and it does not stock magnesium sulfate. There are two MVA kits at the facility, which were provided several years ago through a now-closed USAID-supported project. The kits are used only occasionally because the few staff who have been trained are not always available. Such gaps in service provision are described as a major barrier to improving the rate of facility-based delivery: "It doesn't encourage other [women] to come to facilities when you ask them to buy drugs, and have to refer them" elsewhere, one official explains.<sup>66</sup> Despite its own challenges, the facility regularly receives patients who first visited Mulago Hospital but did not find supplies available there.

#### **Maternal Health Supplies in Private Sector Facilities**

A representative private sector clinic located in an urban area outside Entebbe provides outpatient and inpatient primary health care, immunization, HIV testing and counseling, family planning, and about 20 deliveries per month, with complications referred to two other hospitals located within five kilometers. Staff work in two shifts, including a doctor, midwife, nurse and nursing aide during the day and two doctors, a clinical officer and a nurse at night. In 2009, after receiving training from PACE, the midwife began using misoprostol to prevent postpartum hemorrhage with every birth. Oxytocin is maintained at room temperature and used to induce labor; some ergometrine is still on hand at the clinic but is not supposed to be used. The staff refers patients with pre-eclampsia elsewhere. The clinic has one MVA kit, purchased at a private pharmacy. The MVA kit is used about once a week for post-abortion care, and is only administered by a doctor. Although workers say they are understaffed, and other facilities are nearby, the clinic draws a large number of residents who were discouraged by the long waits, unavailable supplies and informal payments to staff at government hospitals.<sup>67</sup>

A Catholic hospital in Kampala provides 8,500 deliveries annually, and is able to motivate 80 to 85 percent of its ANC patients to return to the hospital for delivery. Despite the relatively high costs charged for services, providers say that



families choose to come to the hospital because they are attended to quickly, staff are sympathetic and the facility is clean. There are four obstetricians/gynecologists on staff, supplemented by medical officers, junior officers, midwives and nursing aides. The hospital administers all four of the tracer commodities. Oxytocin is used routinely after delivery to prevent postpartum hemorrhage, with misoprostol as an alternative. However, misoprostol is used frequently to induce labor or in cases when a fetus dies early in pregnancy. Magnesium sulfate is used in cases of severe pre-eclampsia, and MVAs are used for a small share of cases of incomplete abortion that occur before 12 weeks. Patients seeking treatment for incomplete abortion are so numerous that the hospital's two or three MVA kits are inadequate, as they must be sterilized between uses, and doctors also perform evacuations using instruments. The hospital purchases oxytocin and magnesium sulfate from JMS as a first choice, followed by

NMS, explaining that drugs are more likely to be found and are usually less expensive at JMS, which also shares a faith-based grounding. In late 2009, the hospital received some of the misoprostol donated by Venture Strategies Innovations through the Ministry of Health; previously, misoprostol was purchased from local pharmacies. MVA kits are purchased from the local representative at Star Pharmaceuticals Ltd., and have in the past been purchased in other countries.<sup>68</sup>

A private clinic outside Entebbe provides approximately 20 deliveries each month. (Elizabeth Leahy Madsen/PAI photo)

Many MVA kits remain unused at facilities because providers have not been trained at all or have not received refresher training.

# 5

## FINANCING OF MATERNAL HEALTH SUPPLIES

The health system challenges faced by the government of Uganda extend to the financing of medicines and supplies. The government budget only funds 30 percent of requirements for essential medicines, and 72 percent of government health units have a monthly stockout of at least one medicine.<sup>69</sup> With no other budget to draw on due to the universal free health care policy, government facilities typically reverse that policy by asking patients to purchase their own medicines at pharmacies if supplies are stocked out.

Many bilateral and multilateral donors channel their support to the government of Uganda through basket funding of the health sector, which allows the government and its partners to together set common priorities. This support is outlined in the Health Sector Strategic Plan (HSSP). Uganda's second HSSP program will end in 2010, and planning for the third plan is currently underway. In the HSSP process, after consulting with the government, donors place funds into accounts controlled by the MOH for specific health areas, such as essential medicines. An MOH official recently complained about the role of donors in setting priorities for the sector: "Our hands are tied because even if we have all this money coming from the donors, we are not free to move it from one place to another."<sup>70</sup>

Following the principles of alignment and harmonization agreed in the Paris Declaration on Aid Effectiveness, Uganda's development partners have agreed to reduce the number of donors contributing to each sector while those remaining scale up their respective contributions. As part of this agreement, the Danish International Development Agency (Danida) is transitioning its support out of the sector in June 2010, while USAID and the Swedish International Development Cooperation Agency (SIDA) are increasing support to health. Health sector donors meet regularly and have developed technical working groups on medicines, infrastructure and equipment, human resources and other sector issues. The working groups are intended to

facilitate broad knowledge of stockouts and other problems.

The HSSP funds two credit lines, one for medicines and one for equipment. Historically, Danida has funded approximately half (\$5 million) of the credit line for medicines, and has also been the largest bilateral donor to the equipment credit line. Some observers question whether the Ministry of Health's budget will be able to compensate for the shortfall in funding for supplies when Danida exits the health sector in mid-2010. However, one government official recalled the decision of the Global Fund to Fight AIDS, Tuberculosis and Malaria, whose funding to the country totals hundreds of millions of dollars, to suspend grants to Uganda in 2005 due to concerns about financial irregularities. "We've struggled without the Global Fund, we can struggle without Danida," the official says, suggesting the government search for another donor.<sup>71</sup>

In addition to contributions from donors, financing to support the HSSP is also drawn from the government's internally generated funds. In fiscal year 2009-2010, the government allocated 2.7 billion Ugandan shillings (approximately \$1.35 million) for reproductive health, which includes maternal health. This amount is similar to the previous fiscal year. Of this total allocation, approximately 1.5 billion shillings (approximately \$750,000) was allocated for supplies and equipment, including contraceptives, MVAs, safe delivery kits and gloves. The Ministry of Health anticipates requesting approximately 1.7 billion shillings for this budget line item, which is intended to support the commodities that the government provides free of charge to facilities, for the fiscal year beginning in July 2010. In addition, some supplies, including maternal health commodities, are funded through the credit line for medicines. Some reproductive health equipment items, including sterilizing equipment and materials for caesarean sections, are procured separately through the equipment credit line.<sup>72</sup>

Hospital budgets are determined through the national budget process, with the Ministry of Finance and Parliament. Mulago Hospital reports receiving only one-third of the amount requested by its obstetrics department, and staff then choose to prioritize essential drugs over training, development, equipment and accommodation for staff. When supplies fall short, whether in low-level health centers or at Mulago Hospital, patients and their families are often asked to both foot the bill and procure necessary medicines themselves. The vast majority—between 58 and 75 percent, according to one source—of health care costs in Uganda are borne by patients and their families.<sup>73</sup>

### Government Financing of Maternal Health Supplies

The government budget line item for reproductive and maternal health supplies is often vastly underspent against what is allocated, with less than ten percent of designated funds actually disbursed.<sup>74</sup> One official reported that none of the annual budget line for reproductive health supplies had been spent as of early March 2010, nine months through the fiscal year.<sup>75</sup> Another stakeholder compares the budget for health to that for defense: “Why do you buy guns instead of buying these necessary drugs?”<sup>76</sup> According to government officials, delays in releasing funds by the Ministry of Finance are one major reason for the low expenditures. Because processing doesn’t begin until a fiscal year is already underway, the Ministry of Health may spend most of the first quarter waiting for its budget to be approved by the Ministry of Finance. The Ministry of Health must also wait for procurement plans to be developed across ministries, which can also be delayed

Of the four tracer commodities, oxytocin is funded mostly from the credit line for medicines, and to a lesser extent from the government’s budget line item for reproductive health supplies. The government has not yet funded the purchase of any misoprostol, with the original quantity donated by Venture Strategies Innovations provided free of

charge to facilities. If misoprostol becomes a regular part of government supplies and facilities must pay for it, it will be funded through the credit line. MVA kits are funded by the MOH budget line item, while magnesium sulfate is funded primarily through the credit line. The new basic kit of reproductive health commodities that will be distributed to lower-level facilities will also be funded by the medicines credit line.<sup>77</sup>

### Private Sector Financing of Maternal Health Supplies

Private nonprofit facilities receive government grants for recurring costs and have access to the national credit line for drugs, with annual allocations for each facility. These facilities also use cash grants, which can be larger than credit line allocations, to purchase supplies. Unlike government institutions, private facilities typically charge official user fees for their services, much of which is directed to provider salaries. Private sector facilities often charge a flat fee for deliveries, which includes the costs of all associated supplies. In the Kampala region, private sector charges for deliveries range from 55,000 shillings (less than \$30) for a normal delivery at a clinic without emergency obstetric care services, to the equivalent of \$30 to \$50 for a normal delivery and \$150 for a caesarean section at a hospital equipped to handle complications. These organizations have two advantages in securing steady supplies of medicines and equipment: The pool of user fees creates a secondary budget that can be tapped for critical needs when government funding falls short, and private facilities can procure commodities through the Joint Medical Store, which is generally described as efficient and reliable.

Some maternal health supplies, including oxytocin and misoprostol, are available for purchase on the private market. One ampule of oxytocin costs 400 to 600 shillings (\$0.20 to \$0.30) in local pharmacies. Some providers report that one tablet of misoprostol costs 500 shillings (\$0.25), with three to five tablets required per dose, while others report a higher price.



Maternal health supplies available at a private sector clinic include misoprostol, oxytocin and ergometrine. (Elizabeth Leahy Madsen/PAI photo)

# 6

## MATERNAL HEALTH SUPPLIES FORECASTING, PROCUREMENT AND LOGISTICS

Forecasting for commodities in the public sector is the purview of the Ministry of Health and National Medical Stores. Historically, public sector supplies have been procured through a pull system, with each facility separately ordering drugs and equipment based on individual facility budgets funded by the Ministry of Health. Orders are aggregated through successively higher levels of the health system up to the district level and eventually placed with NMS, a parastatal corporation established in 1996. Until recently, if NMS was unable to provide a facility's order, supplies could be purchased instead through the Joint Medical Store or on the private market.

A study of medicine pricing in Uganda found that the public sector procurement prices of survey medicines were lower than the international reference prices, but higher than in other East African countries.<sup>78</sup> NMS delivers to districts once in every 30 working days, and encourages facilities to place orders every two months. The organization acknowledges that it has not fully satisfied need in the public sector. At least one donor agency has chosen to distribute the supplies it procures, funded by other donors, directly to facilities due to delays at NMS.<sup>79</sup>

In the private nonprofit sector, stakeholders describe a well-functioning system based on facilities' ability to order drugs based on their needs and on their own timeline. JMS offers lower prices than NMS, although facility staff must pay separately for delivery or travel to Kampala to pick up supplies from JMS, while NMS will deliver to the district level.

Supply chain problems occur across the health system. Compared to other countries in a global logistics assessment, Uganda ranks relatively high for its customs clearance process and relatively low for its capacity to track orders and its infrastructure.<sup>80</sup> Challenges can begin at the top of the supply chain for the many supplies that

are not manufactured locally. Every medicine distributed through NMS has to be approved by the National Drug Authority, a lengthy process that includes inspection of overseas manufacturing facilities. Many basic commodities have low profit margins and only a small number of manufacturers make the effort to register their products in Uganda. With little competition, NMS does not get access to the lowest prices. As a landlocked country, Uganda faces additional shipment costs and customs delays in receiving supplies from ports in neighboring countries.<sup>81</sup>

According to one observer, districts need to better quantify their needs, the MOH needs to better supervise, NMS needs to improve capacity and logistics around procurement, regulation standards need to be eased, and staff across the sector must be trained and retained to maintain technical skills.<sup>82</sup> Officials at the central level often describe quantification of need from lower levels of the health system as inaccurate. According to a hospital-based provider, forecasting at lower levels is based on the volume of services provided historically, without accounting for possible increases in demand.<sup>83</sup> Another observer reports that NMS sometimes supplies too little of what facilities request and an excess of commodities that are not needed, while orders are not always distributed to districts on time.<sup>84</sup> One development partner says that the supply chain for essential medicines is not working as well as hoped, but advocates for continued strengthening of NMS and JMS, arguing that these national bodies have an established reputation for procurement of affordable, quality medicines and will remain in place if and when donor support phases out.<sup>85</sup>

Recently, the government has decided to restructure both the financing and the distribution system of medical supplies. Government budgets and credit lines for drugs and equipment, including individual facility supplies budgets, are being



Staff prepare orders at the Joint Medical Store warehouse in Kampala. (Elizabeth Leahy Madsen/PAI photo)

transferred from the Ministry of Health to NMS. Previously, facilities held their own budgets for equipment and supplies. In Fiscal Year 2009-2010, 70 percent of the budgets were transferred to NMS, with a 100 percent transfer planned for the fiscal year beginning in July 2010. The advantage of the new system, according to government officials, is that it will allow NMS to be paid in advance of procurement, avoiding previous problems with delayed payments by districts. NMS officials were also concerned that many government facilities were directing their business elsewhere, and cite problems with corruption and waste in the ordering process at lower levels. However, some providers express concern that this policy will not allow facilities to use JMS as a backup source of supplies if NMS is unable to fulfill orders, because facilities will have no other source of funding. According to one donor, the transfer of funding from MOH to NMS will solve financing delays, but planning and quantification of need for supplies could still be weak.<sup>86</sup>

In addition to the major change in fiscal management, a shift to a push system for lower-level facilities is also underway. Health Centers II and III will no longer place orders for their own drugs and supplies but will instead receive a “kit” of essential commodities directly from

NMS, delivered at the district level. As part of this change, the NMS order form will be revised to delineate the commodities available for order based on each facility level. Discussions regarding the contents of the kit were ongoing in early 2010, but one participant reported that oxytocin and misoprostol would be provided at all levels, including Health Centers II, and magnesium sulfate would be provided to Health Centers III. This would significantly improve the availability of supplies at lower levels of the health system. “It is a big change, but we are losing a lot of mothers, so why not make [the drugs] available?” one official asks.<sup>87</sup>

Government officials explain that the standardized system will help overcome limited capacity to monitor stock levels of supplies at lower levels and will relieve health workers of an excess burden. However, some donors do not support the shift to a push system, fearing that it can cause expiry and wastage. It will be important to maintain accurate quantification at lower levels in the transition to different distribution methods, given supply chain management research findings that “consumption data from the service dispensing point...should be the backbone of all planning in the upstream system.”<sup>88</sup>

The cold storage room at Joint Medical Store maintains temperature-sensitive drugs to 9°C or below. (Jennifer Bergeson-Lockwood/PAI photo)



### Logistics of Maternal Health Supplies

Unlike family planning commodities, there is no regular multi-stakeholder forecasting for maternal health supplies. None of the four tracer commodities are manufactured in Uganda, so the government must locate suppliers abroad.

However, there are only a limited number of registered suppliers for certain maternal health commodities, which leads to unfavorable pricing. For low-cost supplies with small profit margins, such as oxytocin, few companies are willing to go through the hassle of an extended registration process. According to one stakeholder, the Ministry of Health had to lobby Parliament for an exception to the bidding process in order to locate a supplier willing to provide oxytocin in Uganda.<sup>89</sup>

NMS procures oxytocin and magnesium sulfate through international tender. In its distribution system, the cold chain for oxytocin is sometimes maintained. NMS has not yet procured misoprostol, though it is distributing the initial stock of donated misoprostol provided by Venture Strategies Innovations. NMS has not regularly distributed MVAs in recent months, but has had a quantity of stock on hand (Table 3).

JMS has maintained a steady supply of oxytocin and magnesium sulfate, the two tracer maternal health commodities that it procures, although it has faced some importation delays for these supplies. Oxytocin costs approximately 2,872 shillings (less than \$1.50) for 10 injections at JMS (a price similar to NMS), and the cold chain storage regulations are followed. However, facilities supplied by JMS must find an alternative source if they wish to provide MVAs or misoprostol.

Delays in distributing key maternal health supplies even affect the larger national referral hospital, which often participates in pilot studies of new medicines and has staff trained to use them. Despite reports that the initial supply of misoprostol was distributed to all national and regional referral hospitals as well as facilities in pilot districts, Mulago Hospital had not received any misoprostol for postpartum hemorrhage from NMS as of early 2010 (the hospital does have a small stock on hand from a foreign organization to use for management of abortion, but it can only be handled by one or two staff members due to regulatory guidelines).<sup>91</sup> Also in Kampala, a Health Center IV reports that it is stocked out of supplies provided by NMS for approximately

two weeks each quarter. One assessment reports that “informal markets in labour wards are well established due to chronic shortage of supplies.”<sup>92</sup>

### Distribution of Tracer Supplies

Oxytocin is procured by both NMS and JMS. It is also widely available for facilities on the private market through wholesale pharmacies. It is generally preferred to ergometrine because it is fast-acting, highly effective and many providers do not consider it necessary to maintain in cold storage. Despite assurance that oxytocin is widely available across the health system, in February 2010, the labor ward of Mulago Hospital reported only having a small supply of oxytocin, and a Health Center IV in Kampala had none.

The initial quantity of misoprostol is being distributed to all national and regional referral hospitals and 20 pilot districts, where providers are being trained in partnership with Venture Strategies Innovations. The Ministry of Health plans to continue distributing misoprostol to facilities and not at the community level. The MOH has also taken steps to begin a procurement of misoprostol in the next fiscal year

through NMS, using funds from its budget. Misoprostol is not widely available on the open market in Uganda, as currently only two organizations (Venture Strategies Innovations and PACE) have procured supplies of the drug for maternal health indications.

According to a provider at Mulago Hospital, supplies of magnesium sulfate were erratic in 2009 and the hospital had to purchase the drug from the private market, but government-provided stock has since stabilized. Magnesium sulfate appears to be rarely procured by facilities below the hospital level.

MVAs are funded by the MOH budget line item for reproductive health supplies but are not procured by NMS, although records indicate that more than 60 MVA kits were in NMS inventory as of early 2010.<sup>93</sup> They are also available at a cost of approximately 100,000 shillings (\$50) on the private market through a local importer, Star Pharmaceuticals, Ltd. Some providers received shipments of MVAs in recent years from foreign organizations, including Family Health International and Ipas.

**TABLE 3. COST, CONSUMPTION AND STOCK ON HAND OF MATERNAL HEALTH SUPPLIES AT NMS<sup>90</sup>**

Maternal Health Commodity	Cost on NMS Order Form/Unit	Total Consumption, November 2009-February 2010	Stock on Hand, Early March 2010
Oxytocin	28,000 shillings (\$14)/100 injections	544 units	834
Misoprostol	4,295 shillings (\$2.15)/20 tablets*	8,368 units	6,111
Magnesium sulfate	4,500 shillings (\$2.25)/1 injection	4,315 units	7,662
MVAs	Not included	N/A	64

\* To date, all misoprostol distributed through the public sector has been donated and provided free of charge. Misoprostol is listed together with donated reproductive health products on the final page of the NMS order form, which notes that “Contraceptives are supplied free of cost to the district.”

# 7

## DEVELOPMENT PARTNERS AND CIVIL SOCIETY

Unlike family planning, which continues to suffer from supply shortages and stockouts, donors have not provided dedicated, sustained and large-scale funding for maternal health supplies in Uganda or most other countries. Many bilateral donors now provide support through sector or direct budget modalities, and vertical funding for commodities is typically directed to contraceptives, vaccines, antiretrovirals for HIV/AIDS treatment, and other medicines covered through global initiatives. Despite the small amount of dedicated funding for maternal health supplies, donors remain active and committed to maternal health and other reproductive health issues through various programs. Donors meet regularly through forums such as the Health Development Partners Group, which has a rotating chair, and participate in technical and policy committees chaired by the government, such as the Maternal and Child Health cluster. Donors have also agreed to streamline their programming and assistance in line with aid effectiveness principles, which will reduce the number of partners engaged in the health sector but increase the investments of those that remain.

Uganda supports a robust civil society, including both national and international organizations, working to improve maternal health. Many of these organizations are beginning or expanding their support for maternal health, including some new projects with supplies components. Civil society organizations also provide technical guidance to the government and serve as strong voices for advocacy, often in partnership with health care providers, parliamentarians and donors. The organizations below include some of the major actors in the maternal health field, but as maternal health is often integrated into other health issues, this list is not comprehensive.

### Multilateral Donors

The maternal health focus of the **United Nations Children's Fund (UNICEF)** is on antenatal care and prevention of mother-to-child transmission of HIV. ANC activities include distributing “maama” safe delivery kits to each pregnant mother in 15 districts and providing equipment to Health Centers. UNICEF funds supplies for HIV testing and treatment, serves as a procurement agent for child vaccines purchased by the government and other supplies funded by donors, and plans to begin providing newborn resuscitation kits in 2010 if funding allows. UNICEF does not procure any of the maternal health supplies tracked in this report. The agency also supports policy efforts and community case management by Village Health Teams.

The **United Nations Population Fund (UNFPA)** is leading a joint UN program on population that will focus on high fertility rates, service delivery in related areas such as girls' education and basic health care, youth unemployment and skill development and policy coordination. The program will be finalized in 2010 with activities through 2014. The reproductive health component of UNFPA's country program, valued at \$18 million over four years, includes activities to strengthen midwifery services through training and to build the referral system by procuring ambulances and mobilizing communities. UNFPA's program also includes improving forecasting and coordination of family planning commodities, service provision in eight districts, post-abortion care and prevention of obstetric fistula. UNFPA procured a small number of MVAs several years ago as part of humanitarian relief efforts, but does not regularly provide maternal health supplies.

The **World Health Organization (WHO)** provides technical information to the Ministry of Health. The agency has been providing guidance to the government on the introduction of misoprostol, although WHO considers

oxytocin the first drug of choice for postpartum hemorrhage. Between 2001 and 2004, WHO supported a pilot of the Making Pregnancy Safer project in the Soroti district, which ensured transport to facilities was available for women in labor, promoted skilled attendance at birth, and performed community outreach, including male involvement. The maternal mortality ratio in Soroti declined by 75 percent between 2000 and 2006.<sup>94</sup> WHO is also working with the Ministry of Health and UNICEF to develop an Atlas of Maternal Health in Uganda to be published in 2010.

**The World Bank** provides direct budget support of \$100 to \$150 million annually to the government of Uganda, in addition to approximately 20 projects and regional programs. The Bank contributes to the maternal health program implemented by Marie Stopes International Uganda (described below) by funding the cost of vouchers, but it does not procure the maternal health supplies tracked in this report. At the request of the government of Uganda, the Bank is also beginning a project on EmOC and family planning that will provide \$30 million over five years to fund the purchase of supplies by the government and support logistics in districts, NMS and the MOH. The EmOC component of the project will support infrastructure, equipment and supplies and training.

### **Bilateral Donors**

Development assistance from the Danish International Development Agency (**Danida**), historically one of the major donors to Uganda's health sector, is shifting to water and other sectors in 2010 as part of an agreement between donors and the government to streamline and harmonize aid in Uganda. With the exception of a project on HIV/AIDS, Danida's health funding has been directed through sector support to the HSSP, following the principle of integrated service delivery; it does not procure supplies.

## Donors have agreed to streamline their programming and assistance in line with aid effectiveness principles.

Danida has been the largest bilateral donor through the HSSP to government accounts for essential medicines and essential equipment, and has also supported training of health care workers. The agency's support of essential medicines included funding construction of a new warehouse for NMS.

The United Kingdom's Department for International Development (**DFID**) is beginning a regional program on maternal health that will be based in Kenya. Although the program was still in development in early 2010, it is likely to focus on the agency's global priorities for maternal health, including prevention of unwanted pregnancies with an analysis of abortion policy and use of research to support action on maternal and newborn mortality. Half of DFID's funding in Uganda is channeled through direct budget support following the Joint Assistance Framework, with the level of support linked to benchmarks and achievement of annually reviewed indicators. DFID is supporting joint UN programs on population, led by UNFPA, and gender and programs on HIV/AIDS. DFID has been an occasional funder of contraceptives on an emergency basis but does not procure maternal health supplies.

The United States Agency for International Development (**USAID**) supports multiple partners in reproductive health in Uganda, including projects focused on social marketing, advocacy and communications, private sector partnerships and logistics and procurement. Maternal health is a recurring theme of the agency's work with national and local political leaders. Between 2004 and 2009, Uganda

At a press conference sponsored by Save the Mothers in early 2010, Deputy Speaker of Parliament Rebecca Kadaga (center) called for an independent ministry of maternal health. (Elizabeth Leahy Madsen/PAI photo)



was among the focus countries of USAID's POPPHI project, which focused on expanding use of AMTSL through provider trainings on oxytocin and other efforts. Uganda is also one of the priority countries of USAID's new flagship project, Maternal and Child Health Integrated Program (MCHIP). MCHIP is currently supporting six grantees through the Malaria Communities Program and the Child Survival and Health Grants Program. Unlike contraceptives and condoms, USAID does not directly fund or procure maternal health supplies, but has taken an increasing role in the health sector. Development priorities in Washington, such as the Global Health Initiative and Congressional directives, have increased funding for family planning/reproductive health and maternal and child health over the past three years, which may result in future increased funding for these programs in Uganda.

Civil society organizations provide technical guidance to the government and serve as strong voices for advocacy.

### Ugandan NGOs and Associations

The **Association of Obstetricians and Gynaecologists of Uganda (AOGU)** is a member of the International Federation of Gynecology and Obstetrics. The association provides technical guidance to the government and supported the introduction of misoprostol for postpartum hemorrhage prevention and treatment. AOGU has also been a partner on multiple reproductive and maternal health projects in Uganda, such as a 2006 USAID-funded initiative to train midwives in the use of oxytocin, in collaboration with the Uganda Private Midwives Organization.

**Save the Mothers** is an academic program that aims to increase leadership of maternal and reproductive health issues among Ugandan policy-makers. It includes coursework leading to a master's of public health leadership administered at Uganda Christian University in Mukono. The program began in 2005 and has 55 to 60 students who conduct new research on safe motherhood. Students and graduates include members of Parliament, government officials, journalists and NGO staff.

### Uganda Private Midwives Organization

(UPMO), formerly known as the Uganda Private Midwives Association, is a network of more than 1,000 members, each of whom operates her own independent clinic. Members are required to

have qualifications from a recognized training school, to have previously worked in the public sector for at least five years, and to have registered with the national governing body of nurses and midwives. In return for an annual fee, members are invited to attend technical trainings, though these have declined in recent years along with donor funding, which supports 90 percent of the organization's budget. UPMO also advocates with local councils about women's rights to access health services and organizes regional conferences of midwives. While many members purchase supplies at private pharmacies, UPMO maintains a central stock of family planning commodities, misoprostol (from PACE) and MVAs (from Star Pharmaceuticals Ltd.), all available for purchase by members. However, UPMO has had difficulty accessing family planning supplies from NMS recently, and has been stocked out of contraceptive implants for six months as of early 2010.

### **International Member Associations and NGOs**

The activities of **EngenderHealth** in Uganda include a project on the integration of family planning and HIV/AIDS services and a project on obstetric fistula. The fistula care project is implemented in two districts, where midwives are trained in emergency obstetric care, including eclampsia, postpartum hemorrhage and prolonged labor and doctors are trained to provide caesarean sections. The project also supports provision of medical equipment, including kits for caesarean sections and safe delivery, but not medicines or MVAs.

**Marie Stopes International Uganda (MSU)** focuses primarily on family planning and reproductive health through its network of clinics and outreach teams around the country, including in camps for internally displaced persons and other emergency settings. In 2009, MSU began implementing a reproductive health voucher project, funded by the German government and

Many organizations are beginning or expanding their support for maternal health, including supplies.

the World Bank, in 20 districts in the southwest region of the country. In the voucher program, MSU trains and contracts with private sector providers to provide antenatal, delivery and postnatal care, as well as management of sexually transmitted infections, and mobilizes surrounding communities and pregnant women to join the program. Over 80 providers operating at the level of Health Centers II and III, including for-profit, nonprofit and domiciliary-based services, are participating in the safe delivery component of the program, which had provided over 2,500 deliveries by December 2009. Women who participate in the program pay the equivalent of \$1.50 for a voucher, which covers the full range of services offered and all types of deliveries; remaining costs are reimbursed to providers by the program.

**Management Sciences for Health (MSH)** is currently implementing the USAID-funded STRIDES for Family Health Project in Uganda. Other partners include Communication for Development Foundation, Jhpiego, Meridian International and the Uganda Private Midwives Organization. STRIDES focuses on family planning, reproductive health and child survival in 15 districts around the country, selected based on interest and proposals by district governments. STRIDES will award subgrants to NGOs and private sector organizations for service delivery in the three health focus areas, and will also train health providers and Village Health Team members. The project will include four antenatal care visits for pregnant women and will train providers to manage complications in delivery and refer as needed. Providers will also be trained

A ProFam clinic outside Entebbe offers safe delivery and reproductive health services, including misoprostol, oxytocin and MVAs. (Elizabeth Leahy Madsen/PAI photo)



on life-saving skills for newborns, newborn and child immunization and growth monitoring.

The health programs of **PACE**, the local partner of Population Services International, include HIV/AIDS, family planning, maternal and child health, malaria and safe water. PACE supports a network of approximately 100 private franchise clinics under the ProFam brand. In 2009, PACE received a supply of misoprostol from a private donor, which is being distributed to ProFam network clinics, a small number of pharmacies and the Uganda Private Midwives Organization. Before distributing the initial supply of misoprostol, PACE is training providers on its use for prevention of postpartum hemorrhage. Recipients of PACE training include public sector providers in the government's pilot districts, private providers in the ProFam network and pharmacists and drug dispensaries. In addition to its own privately-funded stock, PACE is also using its transportation system to help distribute the initial supply of misoprostol funded by Venture Strategies Innovations through the public sector. PACE hopes to begin a pilot project testing the safety of administering misoprostol at

the community level, working with the Ministry of Health and other organizations, in 2010. The organization also sells a safe delivery kit, with the same contents as the government's maama kit but with separately sourced components.

**Reproductive Health Uganda (RHU)**, the member association of the International Planned Parenthood Federation, operates 17 clinics providing adolescent reproductive health care, family planning, antenatal and postnatal care, post-abortion care, child monitoring, and some HIV/AIDS prevention and care. RHU staff have received training on misoprostol, though the organization has not yet procured any supplies, and MVA kits are used for post-abortion care in most clinics. RHU is also upgrading two of its clinics to provide deliveries and, eventually, the full range of EmOC. As of early 2010, most equipment was in place, but staff were still being hired. Maternal health supplies had not yet been procured, but may be sourced from the government.

**Save the Children in Uganda** implements the Saving Newborn Lives project, which is

advocacy-focused and aims to integrate newborn health issues into reproductive health, maternal health and HIV/AIDS programming.

The Uganda program of Saving Newborn Lives, which operates from 2006 to 2011 with funding from the Bill and Melinda Gates Foundation, promotes evidence-based newborn care but does not include direct implementation of care. The project's efforts have included conducting a situation analysis of newborn health in Uganda with the Ministry of Health, UNICEF and WHO and working with the government to prepare the Implementation Framework for Newborn Health, a set of interventions from across the continuum of care, which will be finalized in 2010. Save the Children has worked on national standards for newborn care at the community and national levels and facilitates a National Newborn Steering Committee, which reports to the Ministry of Health at monthly meetings of the Maternal and Child Health cluster. The organization also implements the Health Access Project for Young Infants, "aimed at improving the quality of care and health outcomes for newborns and their mothers,"<sup>95</sup> in three post-conflict districts in central Uganda.

### Other Advocates

**DSW Uganda**, the country office of the German Foundation for World Population, maintains a large advocacy program to support the sexual and reproductive health and rights of young people. This includes mobile trainings and events around Uganda and partnerships with youth organizations. DSW's work aims in part to reduce unplanned pregnancies among young people through the promotion of family planning and other reproductive health services.

The **Eastern Africa Reproductive Health Network** (EARHN) and its partner organization, Partners in Population and Development, are housed at the Population Secretariat in the

Ministry of Finance, Planning and Economic Development. In Uganda and its five other member countries, EARHN works to identify members of Parliament who can serve as focal points for reproductive health.

The **Network of African Women Ministers and Parliamentarians** (NAWMP) has not been active as a network in Uganda recently due to a lack of funding, but its Parliamentary members remain very active as individuals at the national level and within their constituencies. The network has directed advocacy towards the Ministry of Health and Ministry of Finance to support implementation of the Road Map, for example to upgrade the capacity of Health Centers IV to provide EmOC. The members regularly press the government for increased funding for maternal health and family planning, and are frequently described by other stakeholders as some of the primary champions of these issues in Uganda. At a press conference in March 2010, Uganda's deputy speaker of parliament, Rebecca Kadaga, called for an independent ministry for maternal health. "We need to lift maternal health out of the general health sector so that we can identify the real needs and challenges," she said. "We have been discussing [maternal health financing]... for a while but nothing is done. That is why we rejected the Ministry of Finance's request for a supplementary budget because we did not see their priorities like health."<sup>96</sup>

The **Reproductive Health Supplies Advocacy Network** was launched in Kampala in 2009 to join civil society organizations, parliamentarians, government officials, donor representatives, the media and other stakeholders. The network promotes advocacy to increase funding, improve provider training and strengthen availability of family planning commodities, especially long-term methods. The network's NGO members include RHU and DSW.

# 8

## CONTINUUM OF CARE: FAMILY PLANNING, MATERNAL, NEWBORN AND CHILD HEALTH

The “continuum of care” approach to health services includes integrated maternal, newborn and child health care from the period before pregnancy through childhood.<sup>97</sup> There are two dimensions to the continuum of care: time and place. “Time” refers to pre-pregnancy, pregnancy, and care for babies from delivery through the early years of their childhood, while “place” refers to linking home-based and community care and health facilities.<sup>98</sup> Research has shown that this integrated approach has the potential to maximize efficiency and effectiveness of health service delivery and to be more cost effective than vertical systems.

Health outcomes for women and their children are dependent and interrelated. When a mother dies in childbirth, her baby is also significantly more likely to die in infancy and early childhood.<sup>99,100</sup> If a mother has access to family planning to time her pregnancies, she is more likely to survive the birth of her children, who are also more likely to survive birth and thrive in childhood. If children in turn receive good health care, they may be more likely to repeat the cycle of good health as they reach their reproductive years. Throughout this circle of care, medicines and supplies are a common thread, essential at all levels. If supplies are missing in any one particular point when and where they are needed, the circle of care is broken.

Health indicators across the continuum of care show that further progress is needed. Uganda’s neonatal mortality rate is nearly three percent and

more than ten percent of children who survive their first month of life die before the age of five. Asphyxia, infection and complications of preterm birth, such as low birth weight, are the main direct causes of neonatal death. More than half of children younger than age five are chronically or severely malnourished, as measured by their height for their age. One-fifth of children are significantly underweight, indicating short-term nutritional deficiencies.<sup>101</sup>

There is a significant discrepancy in access to care across the continuum based on income. The richest 20 percent of households are twice as likely to deliver with a skilled birth attendant and receive postnatal care than the poorest 20 percent, and child mortality is much lower among the wealthiest quintile.<sup>102</sup> With many supplies and medicines unavailable at public facilities, resources are required to purchase them from alternate sources. In addition, wealthier women have greater access to transportation and can therefore better plan for safe delivery by being able to determine where they will give birth, or able to reach a facility that theoretically has the breadth of services and supplies to help ensure a safe delivery for themselves and their newborns. In the public sector in Uganda, this level of care is intended to begin at the Health Center III level, but even Health Centers IV are often unable to provide basic emergency obstetric care.

### Policies and the Continuum of Care

At the policy level, there is an increasing focus on integrating newborn health into maternal and child health programs. Maternal and newborn health are already jointly addressed in the Road Map, and two new policies—a newborn intervention framework and a child health strategy—will further link these health areas. In 2008, a Situation Analysis on Newborn Health was prepared by the Ministry of Health, Save the Children, UNICEF and WHO. This analysis strongly supports a continuum of care approach

Throughout the continuum of care, medicines and supplies are a common thread, essential at all levels.

## There is an increasing focus on integrating newborn health into maternal and child health programs.

to the provision of maternal and newborn health services.<sup>103</sup> Findings also reveal that a lack of basic supplies for pre-pregnancy care (family planning), childbirth care, and postnatal care is a common thread throughout the continuum of care.<sup>104</sup>

The analysis notes that “few national targets have been set, which has led to a lack of newborn representation on the health and development agenda.”<sup>105</sup> In implementation, although facilities are in place, service delivery is severely hampered by human resource constraints and shortages of medicines and equipment. Together with improved training and access to supplies, the analysis recommends community-based information dissemination, including through VHTs, and renewed propagation of the newborn care service package among health workers as immediate priorities. Over the long term, the analysis recommends increased access to family planning and fully staffing all midwife positions at the Health Center III level.

Following the situation analysis on newborn health, the government and partners are finalizing the Implementation Framework for Newborn Health and have developed national standards for newborn care at the community and national levels. These will include integrating newborn health as an important component of outreach efforts by VHTs, who will be trained to provide two home visits during pregnancy to promote antenatal care and three home visits during the first week of a newborn’s life (four visits in cases of low birth weight), including birth registration, identification of danger signs

in pregnancy, resuscitation skills and treatment of illnesses. Stakeholders have also worked to integrate newborn health issues into the next HSSP and National Health Policy drafts. Partners have presented other policy issues to the government, including a review of the EDL and national equipment list to add supplies such as nasal tubes, Ambu bags for resuscitation and antenatal care drugs; ensuring midwives are posted at Health Centers II; and revising national treatment guidelines and the EDL to provide ampicillin and gentamicin for infections.

One stakeholder describes the Ministry of Health as “very committed” to newborn health: “In the past, [maternal and newborn] integration was abstract. Now we are saying ‘do this for the mother, do this for the newborn.’”<sup>106</sup> Some stakeholders are working to incorporate newborn health into the name of the MOH-administered Maternal and Child Health cluster. There is a National Newborn Steering Committee, funded by the Saving Newborn Lives project and based within the Maternal and Child Health cluster. The committee’s members include government, professional associations, academics, practicing health professionals, multilateral donors, and retired technical experts.

A 2003 review conducted by a group of local stakeholders noted that “Maternal and Child Health programs have in the past focused more attention on child-care programs with a particularly strong emphasis on immunization.”<sup>107</sup> Although integration of maternal and newborn health is growing, stakeholders say that child health must also be linked to maternal health.

## Many Health Centers II lack water and soap, let alone essential medicines and supplies, yet they are the closest points of care to many.

“When a woman dies, there is a big chance the baby will die with her, or if it survives, will not live up to three years,” says a government official active on maternal health. “Funding child health [alone] is tackling the problem downstream, not upstream. You see so many children dying, malnourished, but you don’t ask: ‘Are their mothers alive, are they well?’”<sup>108</sup>

The Child Health Strategy for 2010-2015 may be launched in 2010. Reportedly, the government has suggested bundling the Child Health Strategy into the existing Road Map for maternal and newborn health and budgeting the two sets of interventions together.<sup>109</sup> However, the emphasis on child health does not translate into budgetary clarity. One stakeholder active in child health reports not knowing how much of the government’s budget is dedicated to child health, adding, “I don’t think it’s even possible to know.”<sup>110</sup>

Uganda’s recent Reproductive Health Commodity Security Strategic Plan for 2010-2014 outlines priority issues based on a situation analysis, a strategic plan and an operational plan to ensure that Ugandans are able to choose, obtain and use reproductive health commodities. In addition to family planning, reproductive health commodities addressed in the plan include maternal and newborn health supplies (including those for antenatal care and PMTCT), which reflects a commitment to the continuum of care. The plan sets a goal for the government to increase the share of reproductive health

commodities it provides to 60 percent by 2014.<sup>111</sup> The plan is a significant step forward to improve access to supplies across the continuum of care, with specific plans proposed to approach each unique challenge.

### Continuum of Care Services and Supplies in Uganda’s Health System

At the service delivery level, facilities are intended to provide integrated maternal, newborn and child health care, but their capacity is often limited by human resource and equipment shortages, including those of maternal, newborn and child health supplies. Health Centers II are mandated to provide outpatient care, antenatal care, immunization and outreach services.<sup>112</sup> Many of these facilities lack water and soap,<sup>113</sup> let alone essential medicines and supplies, yet they are the closest points of care to many Ugandans, and the only point of care in the health system that many, especially in rural areas, are able to access. For example, only two out of eight HC II facilities surveyed for the Situation Analysis of Newborn Health had delivery equipment sterile and ready for use. Only one out of eight facilities had resuscitation equipment for newborns and Ambu bags ready for use.<sup>114</sup>

Health Centers III provide outpatient care, antenatal care, immunization, outreach services, inpatient care, and environmental health.<sup>115</sup> They are also supposed to provide childbirth and delivery services, but according to the Road Map, only 14 percent could provide basic EmOC and only eight percent could provide comprehensive EmOC.<sup>116</sup> The Road Map specifically addresses the need to increase the availability of supplies and drugs for maternal and newborn health in Health Centers III. For example, in the assessment conducted for the Situation Analysis of Newborn Health, seven out of 11 Health Center III facilities surveyed had basic delivery

equipment sterile and ready for use, but only four out of 11 had resuscitation equipment for newborns and Ambu bags ready for use.<sup>117</sup> Though better equipped and with a broader mandate that spans more of the continuum of care compared to HC II facilities, HC III and IV facilities are located “mainly in urban settings and often too far away from most homes and hospitals that provide most of the newborn service package.”<sup>118</sup>

Health Centers IV offer outpatient care, antenatal care, immunization, outreach services, inpatient care, environmental health, surgery, supervision of lower levels, data collection and analysis, and conduct planning for the health sub-district.<sup>119</sup> In the Situation Analysis survey, seven out of ten had delivery equipment sterile and ready for use, and eight had resuscitation equipment for newborns and Ambu bags.<sup>120</sup> To improve access to emergency obstetric care, many HC IIIs have been upgraded to HC IVs, but without the necessary investments in human resources, equipment and supplies to allow them to expand their mandates in reality.<sup>121</sup>

There are 56 public hospitals serving a population of over 30 million in Uganda, and lack of resources, supplies, infrastructure and equipment has prevented them from providing the full package of services they are supposed to offer.<sup>122</sup> At a minimum, hospitals “provide preventive, promotive, outpatient curative, maternity, inpatient health services, emergency surgery, blood transfusion, laboratory and other general services.”<sup>123</sup> Hospitals are supposed be linked to lower level facilities and the community level to provide supervision and support; however, the HSSP II indicates that this does not always happen. The Road Map assessment found that oxytocics were in stock at 41 percent of district hospitals, while “most health units including referral hospitals

had stock-outs of key antibiotics.”<sup>124</sup> Only six of ten hospitals surveyed for the Situation Analysis had basic resuscitation equipment sterile and ready for use. Most, eight of ten, had delivery equipment sterile and ready for use.<sup>125</sup>

Despite the mandated integration of services, the quality of care provided in facilities is not always conducive to sustained interventions across the continuum of care. The Situation Analysis for Newborn Health describes the challenges:

*It is evident that the biggest gap is in fact not within policies, but in the implementation of health care programmes and service packages within the continuum of care. Appropriate resources have not been available to support effective programmes. Policies and guidelines have not been sufficiently disseminated at lower levels. The available capacity in health facilities nearest to families and communities is extremely limited, both in terms of mandate and staff skills.*<sup>126</sup>

Among the women who deliver in facilities with skilled attendance, nearly half stay less than 24 hours after birth.<sup>127</sup> Yet more than one-quarter of all newborn deaths globally occur in the first 24 hours of life.<sup>128</sup> Midwives historically focused their efforts on the mother, although newborn health has been added as a component of government EmOC training. “Management of neonates in facilities is a huge problem,” one stakeholder

The quality of care provided in facilities is not always conducive to sustained interventions across the continuum of care.

## According to Uganda's National Health Policy, 72 percent of public sector health units have monthly stockouts of any medicine tracked by the government.

says.<sup>129</sup> If facilities were acceptable to clients—less crowded, better staffed and well stocked with essential medicines—it is likely mothers would stay longer, thus improving health outcomes for themselves and their newborn babies. Private midwives report that they need updated training on neonatal care, including infection prevention and infant resuscitation, in order to understand the latest medicines and treatments.

For the majority of women who do not deliver their babies in facilities, the continuum of care may be more piecemeal. A woman might access family planning from a community-based agent, be assisted at birth by a traditional birth attendant, and have to walk five kilometers to a health center when she or her child are sick. Vital registration data are lacking, though some donors are working with the Ministry of Health to improve maternal death auditing and child health monitoring, for example through a “passport” that will record data beginning in pregnancy and continuing through childhood.

According to Uganda's National Health Policy, 72 percent of public sector health units have monthly stockouts of any medicine tracked by the government.<sup>130</sup> Stockouts affect family planning, maternal, newborn and child health supplies across the continuum of care. With access to higher level facilities limited, maternal and newborn health supplies are often not present in the lower level facilities where they have the potential to improve health outcomes for mothers and infants.<sup>131</sup> As the public sector has been unable to uphold its mandate to provide

universal access to these supplies, the private sector has grown, to the extent that many medicines are unaffordable to those who need them most.<sup>132</sup> However, the private sector is frequently better stocked than public facilities, creating a paradox for those in need: Supplies and medicines may either be unavailable where they are affordable, or unaffordable where they are available.

In one study assessing the availability of 17 essential medicines for children, 60 percent of the medicines surveyed were on the national Essential Drugs List in Uganda.<sup>133</sup> Eighty percent of those medicines were present in the standard treatment guidelines, but only 35 percent were available through the government's national procurement facility.<sup>134</sup> Ugandans were twice as likely to find one of the survey medicines in a private pharmacy as in a district hospital or primary health care clinic.<sup>135</sup> This trend may prevent lower-income women from accessing basic medicines for their children due to the increased costs of purchasing drugs from private pharmacies.<sup>136</sup>

The most recent Demographic and Health Survey reports that 36 percent of Ugandan children had received the complete regimen of vaccines recommended by the World Health Organization by the age of 12 months. The share of young children who receive no vaccines has declined to below ten percent, but supply shortages create barriers to universal coverage. Although 90 percent of young children had received initial doses of polio and diphtheria vaccines, only 60 percent had completed the

vaccine regimen, due to supply stockouts.<sup>137</sup> Vaccine programming tends to be vertical; like family planning, vaccine programs are heavily based on commodities that can be administered even in failing health systems with well-orchestrated campaigns.

Many stakeholders strongly emphasize the importance of ensuring access to family planning as the first step in improving maternal health by allowing women to determine the number and spacing of their pregnancies, and family planning services are intended to be available at every level of the health system. “The tradeoffs are such that there would be great, great returns, and the cost is little,” one stakeholder notes.<sup>138</sup> However, family planning is a particularly weak area of the continuum of care, suffering from a lack of high-level political commitment, ongoing shortages of supplies, and widespread misinformation at the community level that is compounded by women’s disempowerment. As the Road Map notes:

*Although promotion of family planning is an official government policy and is supported with both government and donor resources, there is a lack of a national consensus to practice family planning. As a consequence, many contradictory arguments emerge from political and religious leaders about the role of family planning in economic development and improved maternal and child health.*<sup>139</sup>

There is a strong need to increase access to family planning to some of the most vulnerable by increasing the provision of youth-friendly services.<sup>140</sup> In many cases, adolescent and teen-age girls in Uganda become mothers earlier than planned through unintended pregnancies. Without family planning services and supplies, they become in need of maternal, newborn and child health services across the continuum of care—while facing the associated increased risks of pregnancy and childbirth at young ages.



An advertisement in the Ministry of Health promotes family planning. (Jennifer Bergeson-Lockwood/PAI photo)

# 9

## ADVOCACY ENTRY POINTS

Like family planning, maternal health programs face challenges related to gender inequities and cultural context, compounded by failures in the supply chain, limited human resources and weak infrastructure that inhibit access to services and positive maternal health outcomes. Expanding access to supplies is a critical entry point for improvements in the overall health system.

The following recommendations were identified by stakeholders in Uganda as priority areas and entry points for future advocacy on maternal health supplies. These recommendations apply most directly to in-country advocates, but could be applicable to advocates in other countries as well.

**Strengthen the referral system.** Given the delays caused by the country's poor transportation network, stakeholders are nearly unanimous that emphasis should be placed on promoting and strengthening the services offered in facilities, including emergency obstetric care. Increasing the rate of facility-based deliveries is also seen as critical for newborn health, as use of the partograph and resuscitation equipment can avert stillbirths and neonatal death by asphyxia. Advocates can promote utilization of facilities both at the local level, through community outreach and mobilization, and among district and central governments, which can allocate resources to ensure that new and upgraded health centers and hospitals are provided with the equipment, supplies and trained staff to deliver needed services. With nearly one-third of facility-based births already occurring in the private sector, efforts to promote facility-based care must be conducted in collaboration with the private and NGO sectors.

**Actively raise awareness at the community level.** Of the “three delays” that contribute to maternal mortality, community outreach is imperative to overcome the first delay: deciding to seek treatment. Decisions about whether and when to seek health care are often made by families and husbands rather than a woman herself, so it is important for programs to stress male involvement. Advocacy efforts must target the perception that “it’s a woman’s battle,” a current advocate explains.<sup>141</sup> Civil society organizations and other advocates, such as parliamentarians, are already conducting community outreach and awareness-raising among women, men and young people about how to time and space pregnancies and the importance of skilled birth attendance; these initiatives should be strengthened. Still, as the Road Map notes, community outreach can only work in the context of broader health system strengthening: “A community based initiative would not be sufficient to reduce maternal and newborn deaths if there are no facilities with the equipment, trained staff, and supplies to deal with emergencies, or if such facilities exist but are dilapidated and badly managed.”<sup>142</sup>

**Consider new financing approaches to overcome economic barriers.** Indirect factors contribute to maternal mortality and morbidity, with connections between poverty and early childbearing and between low levels of education, traditional beliefs and low coverage of skilled attendance at birth. The voucher program implemented by Marie Stopes International Uganda through private sector providers is a promising initiative to overcome financial barriers to supplies, especially in the context of unofficial fees sometimes charged in the public sector. A large-scale national health insurance scheme, which has been proposed by the Ministry of Health, could also mitigate the

Although the existing regular annual budget line allocations for reproductive and maternal health supplies are an important first step, actual expenditures remain a small fraction of these allocations.

large costs of maternal health emergencies, but would need to extend beyond the workforce in formal sectors.

**Support and engage potential champions.** The potential and actual champions of maternal health supplies are numerous. They include professional associations such as AOGU and UPMO and other practicing health care providers, who are exposed to the challenges of maternal health care on a daily basis and could bring women themselves into the advocacy arena. Those with influence in communities, such as religious leaders, can encourage women to deliver at health facilities. Parliamentarians are described as “vibrant” and have devoted ongoing energy to maternal health. Prominent national figures, such as First Lady Janet Museveni and Queen Sylvia Nagginda Luswata of the Buganda Kingdom, have been designated ambassadors for safe motherhood and are also demonstrating increased support for family planning.<sup>143</sup> Other potential champions within the government include EARHN and its partner organization, Partners in Population and Development. In the NGO sector, an avenue for ongoing advocacy exists through the Reproductive Health Supplies Advocacy Network established by RHU. The media has also shown commitment to regularly covering maternal health issues, including policy actions.

However, the existing champions of maternal health do not always fully integrate their efforts. With multiple networks and associations already active, another dedicated coalition for maternal health supplies may not be ideal, but even more informal coordination and outreach to additional potential champions could multiply the beneficial impacts of existing advocacy programs.

**Monitor the national budget for reproductive and maternal health.** Government budgeting for maternal health, and reproductive health more broadly, remains a serious issue. Although the existing regular annual budget line allocations for reproductive and maternal health supplies are an important first step, actual expenditures remain a small fraction of these allocations, in part due to delays in the release of funding. Expanding the lead time for planning would likely help, by allowing budget approvals to be completed and releasing funds at the beginning of each fiscal year, rather than several months into it. However, more comprehensive monitoring of actual disbursements is needed. As one stakeholder asked, “If you put money for drugs [into the budget], has it gone into drugs? Have they reached the intended beneficiaries or have some been siphoned off? Have they expired?”<sup>144</sup>

Annual forecasting of need for maternal health supplies, as has been conducted for family planning commodities, could improve the planning process, especially if such data supported a more timely provision of funds.

**Effectively utilize donor resources.** As the number of development partners contributing to Uganda's health sector shrinks through the aid harmonization process, donors must work with the government to ensure that the full range of maternal health services and supplies are supported through their joint investments. Donors actively monitor the availability of family planning commodities. Although they do not typically provide vertical funding for maternal health supplies, the impact of broader sector and budget support from donors is weakened when government-purchased supplies are unavailable. Supplies should be part of the agenda of the Health Development Partners Group, the technical working group on medicines and other mechanisms for donor and government cooperation. In addition, new estimates of maternal mortality showing that a large number of maternal deaths are attributable to HIV/AIDS highlight the possibilities of integrating maternal, newborn and child health into the programming of the Global Fund to Fight AIDS, Tuberculosis and Malaria.<sup>145</sup>

**Enhance the supply chain.** The supply chain for maternal health commodities has potential failures at many levels. Streamlining the registration process for supplies manufactured overseas could increase the number of available products and manufacturers, generating lower supply costs. Annual forecasting of need for maternal health supplies, as has been conducted for family planning commodities, could improve the planning process, especially if such

data supported a more timely provision of funds to the Ministry of Health and NMS. Although maternal health supplies, unlike those for reproductive health, are not treated separately from other essential medicines in the NMS ordering process, civil servants involved in the procurement of both types of supplies could share information and forecasting data.

The attempt by the Ministry of Health and NMS to develop a standard kit of supplies for Health Centers II and III may ease the demand on staff time at lower levels, while also placing some maternal health supplies within easier reach of the women who need them. However, it will be important to ensure that the supplies are delivered regularly and in quantities that can meet facilities' changing and growing demand for supplies. In addition, the fact that JMS, which is widely regarded as well-functioning, does not stock misoprostol, MVAs or family planning products hampers efforts to reduce the full range of causes of maternal mortality.

**Prioritize family planning.** Contraceptive prevalence is very low and unsafe abortion, one of the major causes of maternal mortality and morbidity, is frequent. Some stakeholders note that family planning is often seen as contradictory to the president's pronatalist outlook, as he espouses the perceived economic benefits of a rapidly growing population. Stakeholders suggest that it is important to emphasize family planning in terms of its direct and proven links to reducing maternal mortality and to fulfilling

a fundamental right to health care. In Uganda, 41 percent of married women wish to delay or prevent pregnancy but are not using contraception—in some cases due to shortages and stockouts of supplies. To address this frequently neglected, but vital, component of maternal health and the continuum of care, the Road Map proposes improving logistics, strengthening community-based programs, diversifying method mix and promoting support for family planning in the policy realm.<sup>146</sup>

**Address the constellation of human resource issues in the public sector, including training, remuneration and workload.** This area is nearly universally cited as one of the most critical weaknesses of Uganda's health system. The government's effort to remedy shortages of health workers through the comprehensive nurse cadre is a step in the right direction, but knowledgeable providers are concerned that their midwifery training is too short, and reports from facilities indicate that workers at this level perform poorly at obstetric care. A second government program, to expand Village Health Teams in order to raise awareness of primary health care at the community level, may help increase utilization of health facilities. However, this program has not yet been fully rolled out, and with no compensation or incentives, VHT volunteers may not stay active for long.

Access to quality maternal health care, therefore, still largely relies on highly trained midwives, nurse-midwives and doctors, who are poorly paid and overworked in the public sector. Many of them also lack current training on certain maternal health supplies, which renders these products of little use even when they are available. Advocates and provider associations can push the government to make motivation and compensation of these front-line workers a top

priority, together with opportunities for ongoing and comprehensive training on the job. In addition, the government must ensure that providers are available in the rural and hard-to-staff posts where they are critically needed, perhaps by financing providers' education costs in return for a commitment to work in underserved areas.

**Strengthen the continuum of care.** Ensuring access to a variety of affordable, quality, basic life-saving supplies and medicines within the continuum of care is essential, whether a woman is seeking access to condoms or contraception to determine the timing and spacing of her children, an antibiotic to stem an infection in her infant, or oral rehydration salts to save the life of her young child. Despite the need for these medicines, they are frequently unavailable to those who need them most. The following entry points could strengthen the continuum of care model for family planning, maternal, newborn and child health supplies in Uganda:

Advocates can push the government to make motivation and compensation of front-line workers a top priority, together with opportunities for ongoing and comprehensive training on the job.

Policymakers must ensure that potentially sensitive components of the continuum of care, including family planning, do not become lost under the umbrella of a holistic approach.

- **Build support for the continuum of care across and beyond the health sector.** If managers of specific health areas are focused on competing for funding rather than prioritizing health outcomes, or programs are not able to be integrated for other political reasons, it will be more difficult to implement the continuum of care model. In addition, policymakers and programmers must ensure that potentially sensitive or oft-neglected components of the continuum of care, including family planning, do not become lost under the umbrella of a holistic approach. In monitoring budgets, it is important for disaggregated information on specific health areas to be available, even though tracking resources has become more complex as development financing shifts toward sector and budget support.

The National Development Plan identifies a lack of coordination across sectors as a cause of the failure of a previous infant and maternal mortality program. Political support must extend beyond the MOH to include other bodies with responsibility for funding and training, such as the Ministry of Finance, Planning and Economic Development and the Ministry of Education, as well as parliamentarians. Supplies should be a component of the agenda of the MOH-led Maternal and Child Health cluster, with

advocates and providers represented and/or ensured direct access to cluster members.

- **Ensure integrated policies are implemented.**

In Uganda, there are multiple strong frameworks in place that promote improvements along the continuum of care, but it often takes years for these policies to be published, and implementation of multiple disparate documents can prove challenging. Advocates are already involved in the policy development process and can help motivate the government to finalize and publish new policies in a timely manner. The suggested integration of the forthcoming implementation framework for newborn health and the child health strategy could be a step in harmonizing the policy implementation process.

- **Use supplies as an indicator to monitor implementation of successful continuum of care policies.** As more policy recommendations are based around the continuum of care, the availability of supplies and essential medicines throughout the continuum can be used as an indicator to monitor and evaluate successful implementation. Availability of supplies and essential medicines can be a marker of success to monitor policy implementation and also highlight areas in which the continuum needs to be strengthened.

- **Conserve resources through program integration, where efficient.** With limited resources available in Uganda to address the myriad significant challenges faced by the health system, conservation of resources and cost efficiency is a must. For family planning supplies alone, there is an annual gap of millions of dollars between need and available funds. Each component of the continuum of care faces unique challenges in access to supplies, but integrated programming in the right places, including through integrated logistics systems, could streamline services and increase the efficiency and effectiveness of supply chains throughout the continuum. Integrated programming can allow for greater efficiency in training, monitoring and supervision, while simultaneously increasing access to services.<sup>147</sup> One example of integration, as recommended by the newborn health situation analysis, is to integrate PMTCT and malaria services and supplies into maternal, newborn and child health programs.<sup>148</sup>

## APPENDIX 1

### POLICIES RELATED TO MATERNAL HEALTH SUPPLIES

The following policies are among those that most directly address and inform maternal health programs in Uganda and should ostensibly include references to maternal health supplies. This review does not include the policies of global partnerships or development partners, which can also affect the environment for maternal health supplies in Uganda and other countries.

#### **Essential Drugs List of Uganda (2001)**

The Essential Drugs List has reportedly been updated regularly, but the most recent version publicly available dates from 2001. The 2001 EDL, Uganda's third, was determined by the National Drug Authority's (NDA) Committee on Essential Drugs, which included officials from the NDA, Ministry of Health and Ugandan army, medical practitioners and academics from Mulago Hospital and Makerere University, and representatives from the private sector and Joint Medical Store. The list is intended "as a basis for procurement, prescribing and dispensing in the public health system and its use promoted in the private (profit and non-profit) sector." Medicines are evaluated for inclusion on the list based on efficacy, safety, quality, cost-effectiveness, and appropriateness within the local context. Medical professionals are invited to propose amendments to the EDL at any time, and the National Drug Policy mandates that the list be officially revised at least every three years. However, information about the EDL is limited, with stakeholders interviewed for this study reporting difficulties in accessing updated versions and contradictory accounts of the publication dates and the medicines included.

The 2001 list includes oxytocin for use in hospitals, though a combined injection of ergometrine and oxytocin is listed for use at Health Centers II and above. The list also includes magnesium sulfate for eclampsia at the Health Center III level and above. The list does not include misoprostol, which is a component of the World Health

Organization's Model List of Essential Medicines for Reproductive Health. Government officials report that misoprostol will be considered for the next revision of the EDL, with the support of the Ministry of Health.

#### **National Drug Policy (2002)**

Uganda's second National Drug Policy was published by the Ministry of Health following consultation with a task force comprised of government officials, public- and private-sector medical practitioners and donors. The policy includes a goal related to supplies: "to establish and maintain a secure, cost-effective drug supply system in order to ensure that required essential drugs are available and accessible to the population and that quality is maintained up to the point of use." Related to this goal, the policy establishes objectives for improved quantification, procurement, storage and distribution. The policy also promotes procurement of essential, generic drugs by the private sector to complement the public sector, and encourages local pharmaceutical manufacturing.

#### **Health Sector Strategic Plan II 2005/06-2009/10**

The stated priorities of the HSSP II are "reducing maternal and child mortality... reducing fertility; malnutrition; the burden of HIV/AIDS, Tuberculosis and Malaria; and... reducing disparities in health outcomes among the lowest and highest income quintiles." One of its key objectives is to increase the share of deliveries taking place in a facility to 50 percent; although facility-based deliveries increased significantly from the 1999-2000 baseline of 25 percent, this indicator was measured at 41 percent in 2006. The plan also targets a reduction in the maternal mortality ratio to 354 deaths per 100,000 live births and 100 percent availability of six essential medicines, some related to family planning and child health but none directly related to the major causes of maternal mortality.

The HSSP II outlines the National Minimum Health Care Package, which includes maternal and child health as one of four clusters. Its elements include “sexual reproductive health and rights, newborn health and survival, management of common childhood illnesses, expanded programme on immunization [and] nutrition.” The cluster sets quantified targets for availability of pregnancy care and safe delivery kits, contraceptives, emergency obstetric care and child medicines and vaccines, but there are no specific targets for the maternal health supplies followed in this report, nor for the reduction of unsafe abortion. Planning for the third HSSP was underway as of early 2010.

### **Road Map for Accelerating the Reduction of Maternal and Neonatal Mortality and Morbidity in Uganda 2006-2015 (2008)**

The Road Map assesses challenges in maternal and neonatal health in Uganda and presents a detailed strategic plan. It has three objectives: increasing skilled care for maternal health throughout the health system, promoting maternal health to women and communities, and strengthening family planning. The plan also includes seven priority areas, each with specific strategies: “legal and policy framework; availability, accessibility and utilization of maternal and newborn health services; human resources; allocation and distribution of resources; coordination and management; community involvement and participation; and monitoring and evaluation.” Supplies are one of many key activities of the document: “Procure and distribute standard equipment, drugs and supplies for maternal and newborn health to all Health Centres and District Hospitals, with priority to Health Centres III.” It includes an institutional framework charging an array of ministries and NGO partners with components of implementation: the Ministry of Health is responsible for national-level implementation, district-level

implementation is jointly targeted to the MOH and the Ministry of Local Government, and monitoring and evaluation is led by the Prime Minister’s Office. The Road Map is signed by President Yoweri Museveni and was launched on Safe Motherhood Day in 2008 at an event headlined by First Lady Janet Museveni. Stakeholders report that despite preparation of a separate action plan for the Road Map in 2009, its implementation is lagging.

### **National Population Policy for Social Transformation and Sustainable Development (2008)**

The National Population Policy recognizes the high burden of maternal death and disability in Uganda, and many of its strategies address maternal health. These include improvements in the health sector referral system, human resources, reproductive health budget, availability of reproductive health commodities, community awareness and utilization of maternal and child health services, male involvement and promoting the spacing of pregnancies. However, the policy does not set quantified goals or targets for these strategies.

### **Reproductive Health Commodity Security Strategic Plan 2010-2014 (2008)**

Although the commodity security policy carries a publication date of 2008, it is expected to be officially launched in 2010. The policy includes eight components with a total budget of \$137.2 million, nearly 80 percent of which is allocated to commodities. The plan assesses existing strengths and outstanding priority issues in each component. It assigns implementation of various objectives to various divisions of the Ministry of Health, local governments, the Population Secretariat, NMS and JMS, in collaboration with Parliament, additional ministries and multilateral and bilateral donors. Although the focus of the policy is on contraceptives, it incorporates commodities for emergency obstetric and

antenatal care, and these form the majority of the 28 individual supplies identified as essential for reproductive health commodity security. The group of supplies for emergency obstetric care includes oxytocin, misoprostol, magnesium sulfate and MVAs.

### **National Development Plan 2010/11-2014/15**

The National Development Plan (NDP), according to the final draft reviewed for this report, establishes targets for infant, child and maternal mortality that match those of the Millennium Development Goals, as the two development frameworks have similar completion dates. These targets are: infant mortality rate of 31 deaths per 1,000 live births, under-five mortality rate of 56 deaths per 1,000 live births, and maternal mortality ratio of 127 deaths per 100,000 live births. However, the NDP adopts a less ambitious target than its predecessor, the Poverty Eradication Action Plan (PEAP), for fertility and an only moderately improved target for contraceptive use, likely in recognition of the slow progress in these areas. While the PEAP aimed to achieve a total fertility rate of 5.4 children per woman and a contraceptive prevalence rate (CPR) of 40 percent for 2008, the NDP establishes targets of 6.0 for total fertility and 46 percent for CPR by 2014/15. The NDP also does not promote further increases in the share of deliveries that occur at facilities, leaving the target for 2015 at 40 percent, identical to the baseline level reported for 2007/08.

The NDP identifies stockouts of essential supplies, which are in turn attributed to underfunding, as a major constraint on Uganda's health system, together with delays in finalizing proposed policies, poor coordination across sectors, human resource shortages, inefficiencies and inadequate infrastructure and equipment. In addition to being hampered by low funding levels, shortages of supplies are also identified as

outcomes of the inefficiencies and infrastructure constraints on the health system. The NDP cites “problems associated with the procurement, storage and distribution of drugs,” “poor stock management” at NMS, and “only one-third of facilities offering delivery services have basic equipment and supplies for conducting normal deliveries.”<sup>149</sup> However, the interventions identified for health sector improvements do not specifically reference commodities or supplies (one intervention is described as “procurement of medical equipment”) and none of the interventions, which also include “improving access to reproductive health services in HC IIIs and HC IVs,” are quantified.

### **National Health Policy 2010-2020 (Draft—May 2009)**

A 2009 draft of Uganda's second National Health Policy notes that despite concerted efforts by the government since the end of the country's civil war, “health indicators remain poor.”<sup>150</sup> The policy describes the challenges of inadequate availability of essential medicines and supplies as well as insufficient funding. The policy objectives outlined in the draft include improved management and harmonization within the Ministry of Health and across the health system; provision of the minimum health care package; evidence-based decision-making; strengthening the role of research in policy-making; integrating health issues into the legislative process; increasing the number of health workers and improving their performance; ensuring the availability of medicines and supplies; improving the infrastructure for health; allocating sufficient financial resources; and promoting partnerships with the private sector, other government ministries, development partners and the community. The policy objective on supplies is not quantified: “Over the next 10 years GoU [the government of Uganda] shall ensure that safe, good quality medicines and health supplies are available and affordable to the population of Uganda.”<sup>151</sup>

### **Child Health Strategy (unpublished)**

In early 2010, the child health strategy was being costed and had not been finalized. It was not possible for the authors to review a draft of the strategy or to determine the extent to which it incorporates supplies, though one stakeholder reported that it would integrate newborn health. According to a government official, the Child Health Strategy and the Implementation Framework for Newborn Health may both be launched in 2010.

### **Implementation Framework for Newborn Health (unpublished)**

This framework, building on a situation analysis of newborn health in Uganda, will propose high-impact interventions related to maternal, newborn and child health. The framework was not yet finalized in early 2010 and it was not possible for the authors to review a draft or to determine the extent to which it incorporates supplies. A stakeholder involved in preparing the framework reported that it will emphasize training of providers in detecting and treating the major causes of newborn mortality by promoting skills such as infant resuscitation, including among Village Health Teams.

### **National Policy on Public Private Partnership in Health (unpublished)**

This policy has existed in draft form for several years but has not been finalized. It was not possible for the authors to review a draft or to determine the extent to which it incorporates supplies. According to a 2009 draft of the National Health Policy, it has been sent to the cabinet for approval, and some elements of implementing private-public partnerships are in place at the central level.

## APPENDIX 2

### CASE STUDY INTERVIEW SUBJECTS

Positions listed are those held at the time of interview.

**Patrick Aliganyira**

*Program Specialist, SNL*

Save the Children in Uganda

**Dr. Josaphat Byamugisha**

*Head/Chair, Department of Obstetrics/*

*Gynaecology, Makerere University*

College of Health Sciences

**Dr. Jean Chamberlain**

*Executive Director*

Save the Mothers

**Jackson Chekweko**

*Acting Executive Director*

Reproductive Health Uganda

**Jon Cooper**

*Country Director*

Marie Stopes International Uganda

**Rebecca Copeland**

*Commodity & Logistics Specialist*

USAID/Uganda

**Anthony Ddamba**

*Head, Sales and Marketing*

National Medical Stores

**Sakina Kiggundu**

*Chairperson*

Uganda Private Midwives Organization

**Dr. Godfrey Habomugisha**

*Senior Medical Officer; Reproductive Health*

*Coordinator*

Kampala City Council

**Will Hines**

*Programme Manager*

DFID Uganda

**Dr. Henry Kakande**

*Director, Technical/Deputy Chief of Party*

STRIDES for Family Health

**Moses Kamabare**

*General Manager/CEO*

National Medical Stores

**Francine Kimanuka**

*Health Specialist*

UNICEF

**Dr. Betty Kyaddondo**

*Head, Family Health Department, Population*

*Secretariat*

Eastern Africa Reproductive Health Network

**Joanita Namutebi Lwanyaga**

*Head of Quality Assurance*

Joint Medical Store

**Joslyn Meier**

*Program Associate*

EngenderHealth

**Hassan Mohtashami**

*Deputy Country Representative*

UNFPA

**Dr. Lorna Muhirwe**

*Executive Director*

Uganda Protestant Medical Bureau

**Dr. Peter Mukasa**

*Senior Medical Associate*

EngenderHealth

**Dr. Susan Mpanga Mukasa**

*Executive Director*

PACE

**Edith Ronah Mukisa**

*Country Program Manager*

EngenderHealth

**Dr. Moses Muwonge**  
*Chief Executive Officer*  
SAMASHA Medical

**Enid Mwebaza**  
*Assistant Commissioner for Nursing*  
Ministry of Health

**Barbara Nakaweesa**  
*Midwife*  
Abaita/PACE Profam Clinic

**Andrew Namonyo**  
USAID/Uganda

**Mary Namusisi**  
*Programs Coordinator*  
Uganda Private Midwives Organization

**Barbara Ndagire, Assistant RH**  
*Coordinator—Central Region*  
PACE

**Dr. Wilfred Ochan**  
*Assistant Representative*  
UNFPA

**Peter Ogwang Ogwal,**  
*Programme Officer*  
Royal Danish Embassy

**Dr. Pius Okong**  
St. Francis Nsambya Hospital

**Dr. Peter Okwero**  
*Senior Health Specialist*  
The World Bank

**Jimmy Opio**  
*General Manager*  
Joint Medical Store

**Margaret Senkaali**  
*Project Support Manager*  
Marie Stopes International Uganda

**Dr. Olive Sentumbwe-Mugisa**  
*Family Health and Population Officer*  
WHO

**David Serubiri**  
*Logistics and*  
Supplies Coordinator  
Reproductive Health Uganda

**Martha Songa**  
*PR and Communication Coordinator*  
Reproductive Health Uganda

**Richard Ssemujju**  
*Project Coordinator*  
Marie Stopes International Uganda

**Hon. Sylvia Ssinabulya**  
*Member of Parliament*  
Mityana District

**Jane Rose Waiswa**  
*Vice President*  
Uganda Private Midwives Organization

**Dr. Jennifer Wanyana**  
*Acting Assistant Commissioner for Reproductive Health*  
Ministry of Health

**Andrew Wasswa**  
*Manager Operations*  
Joint Medical Store

## APPENDIX 3

### REFERENCES

- Ahmed, K U and H Moller. 2009. "UNFPA-WHO Collaborative Initiative to Review the Current Status of Access to a Core Set of Critical, Life-Saving Maternal/Reproductive Health Medicines in Selected Countries." Presented at International Conference on Family Planning: Research and Best Practices, Kampala, 18 November.
- Department for International Development (DFID). 2004. *Reducing Maternal Deaths: Evidence and Action. A Strategy for DFID*. London: DFID.
- Duley, L and D Henderson-Smart. 2003. "Magnesium Sulphate versus Diazepam for Eclampsia." *Cochrane Database of Systematic Reviews*, Issue 4.
- Hogan, M C, K J Foreman, M Naghavi, S Y Ahn, M Wang, S M Makela, A D Lopez, R Lozano and C J L Murray. 2010. "Maternal Mortality for 181 Countries, 1980-2008: A Systematic Analysis of Progress Towards Millennium Development Goal 5." *The Lancet*.
- Horton, R. 2010. "Maternal Mortality: Surprise, Hope and Urgent Action." *The Lancet*.
- Katz, J, K P West Jr, S K Khatri, P Christian, S C LeClerq, E Kimbrough Pradhan and S Ram Shrestha. 2003. "Risk Factors for Early Infant Mortality in Sarlahi District, Nepal." *Bulletin of the World Health Organization*. 81: 717-725.
- Khan, K S, D Wojdyla, L Say, A Metin Gülmezoglu and P F A Van Look. 2006. "WHO Analysis of Causes of Maternal Death: A Systematic Review." *The Lancet*. 367: 1066-1074.
- Lawn, J E, S Cousens and J Zupan. 2005. "4 Million Neonatal Deaths: When? Where? Why?" *The Lancet* 365: 891-900.
- Leahy, E, and E Akitobi. 2009. *A Case Study of Reproductive Health Supplies in Uganda*. Washington, DC: Population Action International.
- Lirri, E. 2010. "Health Insurance: A Miracle Cure or False Hope?" *The Monitor*, 20 March. <http://allafrica.com/stories/201003220098.html>. Accessed 26 March 2010.
- Mathai, M, A Metin Gülmezoglu and S Hill. 2007. "Saving Women's Lives: Evidence-Based Recommendations for the Prevention of Postpartum Haemorrhage." *Bulletin of the World Health Organization*. 85(4): 322-323.
- Mbonye, A K, M G Mutabazi, J B Asimwe, O Sentumbwe, J Kabarangira, G Nanda and V Orinda. 2007. "Declining Maternal Mortality Ratio in Uganda: Priority Interventions to Achieve the Millennium Development Goal." *International Journal of Gynecology and Obstetrics*. 98: 285-290.
- MEASURE DHS. *Demographic and Health Surveys*. Various countries, most recent year available. <http://www.measuredhs.com/countries/start.cfm>. Accessed 21 April 2010.
- Ministry of Finance, Planning and Economic Development. 2008. *National Population Policy for Social Transformation and Sustainable Development*. Kampala: Population Secretariat.
- Ministry of Health. 2009 (draft). *National Health Policy: Reducing Poverty Through Promoting People's Health*. Kampala: Republic of Uganda.
- Ministry of Health and United Nations Population Fund (UNFPA). 2009. *The State of Midwifery Training, Service and Practice in Uganda*. Kampala: Republic of Uganda and UNFPA.

- Ministry of Health. 2008a. *Prevention and Treatment of Post Partum Haemorrhage: Clinical Guidelines for the Use of Misoprostol*. Kampala: Republic of Uganda and Venture Strategies for Health and Development.
- Ministry of Health. 2008b. *Situation Analysis of Newborn Health in Uganda: Current Status and Opportunities to Improve Care and Survival*. Kampala: Republic of Uganda, Save the Children, UNICEF and WHO.
- Ministry of Health. 2008c. *Uganda Reproductive Health Commodity Security Strategic Plan 2010-2014*. Kampala: Republic of Uganda.
- Ministry of Health. 2005. *Health Sector Strategic Plan II: 2005/06-2009/10*. Kampala: Republic of Uganda.
- Ministry of Health. 2002. *Uganda National Drug Policy*. Kampala: Republic of Uganda.
- Museveni, J K. 2009. "Keynote Address by Hon. Janet K. Museveni, Minister of State for Karamoja Region and Uganda's First Lady at the Opening of the International Conference on Family Planning." Presented at the International Conference on Family Planning: Research and Best Practices, Kampala, 15 November.
- Nagginda Luswata, S. 2008. "Gender Equality and Women's Empowerment: The Role of Cultural Leaders in the Promotion of Reproductive Health and Rights." Presented at the Sixth African Development Forum, Addis Ababa, 19-21 November.
- Nakazibwe, C. 2006. "Maternal Health Care Wins District Vote in Uganda." *Bulletin of the World Health Organization*. 84(11): 847-849.
- National Drug Authority. 2001. *Essential Drugs List for Uganda (EDLU) 2001*. Kampala: Republic of Uganda.
- National Planning Authority. 2009 (draft, 4 December). *National Development Plan 2010/11-2014/15*. Kampala: Republic of Uganda.
- The Partnership for Maternal, Newborn & Child Health. ND. "Continuum of Care." [http://www.who.int/pmnch/about/continuum\\_of\\_care/en/](http://www.who.int/pmnch/about/continuum_of_care/en/). Accessed 1 April 2010.
- Republic of Uganda. 2008. *Road Map for Accelerating the Reduction of Maternal and Neonatal Mortality and Morbidity in Uganda 2006-2015*. Kampala: Republic of Uganda.
- Republic of Uganda, World Health Organization (WHO) and Health Action International (HAI). 2004. *Uganda Medicine Pricing Survey Report*. <http://www.haiweb.org/medicineprices/surveys/200404UG/sdocs/Uganda.pdf>. Accessed 15 April 2010.
- Robertson, J, G Forte, J Trapsida and S Hill. 2009. "What Essential Medicines for Children are on the Shelf?" *Bulletin of the World Health Organization*. 87: 231-237.
- Ronsmans, C and W Graham. 2006. "Maternal Mortality: Who, When, Where, and Why." *The Lancet* 368: 1189-1200.
- Sachs, J D and J W McArthur. 2005. "The Millennium Project: A Plan for Meeting the Millennium Development Goals." *The Lancet*. 365: 347-53.
- Sarley, D, L Allain and A Akkihal. 2009. *Estimating the Global In-Country Supply Chain Costs of Meeting the MDGs by 2015*. Arlington, VA: USAID | DELIVER Project.

- Sines, E, A Tinker and J Ruben. 2006. *The Maternal-Newborn-Child Health Continuum of Care: An Effort to Save Lives*. Washington, DC: Population Reference Bureau and Save the Children.
- Ssengooba, F, S Neema, A Mbonye, O Sentumbwe and V Onama. 2003. *Maternal Health Review: Uganda*. Makerere University Institute of Public Health and Health Systems Development Programme.
- Tebajjukira, M, and I Nabusoba. 2010. "Kadaga Wants Independent Maternal Health Ministry." *The New Vision*. (1 March): 5.
- Thaddeus, S and D Maine. 1994. "Too Far to Walk: Maternal Mortality in Context." *Social Science & Medicine*. 38(8): 1091-1110.
- Uganda Bureau of Statistics (UBOS) and Macro International Inc. 2007. *Uganda Demographic and Health Survey 2006*. Calverton, Maryland: UBOS and Macro International Inc.
- United Nations. 2008. *Millennium Development Goal 8: Delivering on the Global Partnership for Achieving the Millennium Development Goals: MDG Gap Task Force Report 2008*. New York: United Nations.
- United Nations Children's Fund (UNICEF). 2008. *The State of the World's Children 2009: Maternal and Newborn Health*. New York: UNICEF.
- United Nations Development Programme Uganda. ND. "Meeting the MDGs in Uganda." <http://www.undp.or.ug/mdgs/25>. Accessed 2 April 2010.
- United Nations Development Programme Uganda. ND. *Millennium Development Goals: Uganda's Progress Report 2007*. Kampala: United Nations Development Programme Uganda.
- United Nations Population Division. 2009. *World Population Prospects: The 2008 Revision*. New York: United Nations Population Division.
- United Nations Population Fund (UNFPA). 2009. *The State of Midwifery Training, Service and Practice in Uganda: Assessment Report*. Kampala: UNFPA.
- United Nations Statistics Division. ND. "Millennium Development Goals Indicators." <http://mdgs.un.org/unsd/mdg/Data.aspx>. Accessed 2 April 2010.
- The World Bank. 2010. Logistics Performance Index. <http://info.worldbank.org/etools/trade-survey/modela.asp?countryID=145>. Accessed 13 April 2010.
- World Health Organization (WHO). 2010. *Model List of Essential Medicines, 16<sup>th</sup> List (Updated)*. Geneva: WHO.
- World Health Organization (WHO), UNICEF, UNFPA and The World Bank. 2007. *Maternal Mortality in 2005: Estimates Developed by WHO, UNICEF, UNFPA, and the World Bank*. Geneva: WHO.
- Yadav, R. 2010. "In-Country Supply Chains: The Weakest Link in the Health System." *Global Health* 5: 18-19.



## ENDNOTES

- 1 Khan, Wojdyla, Say, Metin Gülmezoglu and Van Look 2006
- 2 Department for International Development 2004, p. 7
- 3 World Health Organization, UNICEF, UNFPA and The World Bank 2007
- 4 Thaddeus and Maine 1994
- 5 Ronsmans and Graham 2006, p. 1191
- 6 World Health Organization, UNICEF, UNFPA and The World Bank 2007
- 7 Hogan, Foreman, Naghavi, Ahn, Wang, Makela, Lopez, Lozano and Murray 2010, p. 1
- 8 Ahmed and Moller 2009
- 9 Department for International Development 2004, p. 10
- 10 Uganda Bureau of Statistics and Macro International Inc. 2007
- 11 Uganda Bureau of Statistics and Macro International Inc. 2007
- 12 Ministry of Health 2008a
- 13 Mbonye, Asimwe, Sentumbwe, Kabarangira, Nanda and Orinda 2007
- 14 Ssengooba, Neema, Mbonye, Sentumbwe and Onama 2003, p. 5
- 15 Uganda Bureau of Statistics and Macro International Inc. 2007, p. 282
- 16 Hogan, Foreman, Naghavi, Ahn, Wang, Makela, Lopez, Lozano and Murray 2010
- 17 MEASURE DHS
- 18 MEASURE DHS
- 19 United Nations Population Division 2009
- 20 Interview, 2 March 2010
- 21 Uganda Bureau of Statistics and Macro International Inc. 2007
- 22 Interview, 23 February 2010
- 23 United Nations Development Programme Uganda, "MDGs in Uganda."
- 24 United Nations Statistics Division ND
- 25 United Nations Development Programme Uganda, Millennium Development Goals: Uganda's Progress Report 2007, p. 2
- 26 Sachs and McArthur 2005, p. 349
- 27 United Nations 2008
- 28 Sarley, Allain and Akkihal 2009
- 29 Interview, 2 March 2010
- 30 Interview, 23 February 2010
- 31 Interview, 2 March 2010
- 32 Interview, 26 February 2010
- 33 Ministry of Health 2009
- 34 National Planning Authority 2009
- 35 Ssengooba, Neema, Mbonye, Sentumbwe and Onama 2003, p. 9
- 36 Republic of Uganda 2008, p. 14
- 37 Interview, 25 February 2010
- 38 Mbonye, Asimwe, Sentumbwe, Kabarangira, Nanda and Orinda 2007
- 39 Republic of Uganda 2008, p. 12
- 40 Interview, 24 February 2010
- 41 United Nations Population Fund 2009
- 42 United Nations Population Fund 2009, p. 7
- 43 Interviews, 24 February 2010, 26 February 2010, 1 March 2010
- 44 Ministry of Health 2009
- 45 Republic of Uganda 2008
- 46 United Nations Population Fund 2009
- 47 National Planning Authority 2009
- 48 Ministry of Health 2009
- 49 Interview, 24 February 2010
- 50 Interview, 24 February 2010
- 51 Interview, 26 February 2010
- 52 Uganda Bureau of Statistics and Macro International Inc. 2007
- 53 Ministry of Health 2009
- 54 Interview, 1 March 2010
- 55 Interview, 1 March 2010
- 56 Mbonye, Asimwe, Sentumbwe, Kabarangira, Nanda and Orinda 2007
- 57 Republic of Uganda 2008
- 58 Interview, 26 February 2010
- 59 Mathai, Metin Gülmezoglu and Hill 2007
- 60 Ministry of Health 2008a, p. 8
- 61 Ministry of Health 2008a, p.10
- 62 Ministry of Health 2008a, p.10
- 63 Interview, 2 March 2010

- 64 Duley and Henderson-Smart 2003
- 65 Republic of Uganda 2008
- 66 Interview, 26 February 2010
- 67 Interview, 2 March 2010
- 68 Interview, 3 March 2010
- 69 Ministry of Health 2009
- 70 Dr. Francis Runimi, quoted in Lirri 2010
- 71 Interview, 2 March 2010
- 72 Interview, 25 February 2010
- 73 Ssengooba, Neema, Mbonye, Sentumbwe and Onama 2003
- 74 Leahy and Akitobi 2009
- 75 Interview, 2 March 2010
- 76 Interview, 3 March 2010
- 77 Interview, 25 February 2010
- 78 Republic of Uganda, WHO and HAI 2004
- 79 Interview, 3 March 2010
- 80 The World Bank 2010
- 81 Interview, 2 March 2010
- 82 Interview, 24 February 2010
- 83 Interview, 3 March 2010
- 84 Interview, 1 March 2010
- 85 Interview, 24 February 2010
- 86 Interview, 2 March 2010
- 87 Interview, 2 March 2010
- 88 Yadav 2010, p. 19
- 89 Interview, 3 March 2010
- 90 Order form and consumption data provided by NMS, 2 March 2010. Stock status data provided by a personal communication, 4 March 2010. NMS reports no recent distribution of MVA kits; stock status data show an average monthly consumption of one kit. Stock status data also report a much lower average monthly consumption of misoprostol (50 units) than the NMS data, which show average monthly consumption of over 2,000 units between November 2009 and February 2010.
- 91 Interview, 24 February 2010
- 92 Ssengooba, Neema, Mbonye, Sentumbwe and Onama 2003, p. 26
- 93 Personal communication, 4 March 2010
- 94 Nakazibwe 2006
- 95 Personal communication, 17 March 2010
- 96 Tebajjukira and Nabusoba 2010
- 97 The Partnership for Maternal, Newborn & Child Health
- 98 Sines, Tinker and Ruben 2006
- 99 United Nations Children's Fund 2008
- 100 Katz, West, Khatry, Christian, LeClerq, Kimbrough Pradhan and Ram Shrestha 2003
- 101 Uganda Bureau of Statistics and Macro International Inc. 2007
- 102 Ministry of Health 2008b, p. 6; Uganda Bureau of Statistics and Macro International Inc. 2007
- 103 Ministry of Health 2008b, p. 55
- 104 Ministry of Health 2008b, p. 59
- 105 Ministry of Health 2008b, p. 8
- 106 Interview, 25 February 2010
- 107 Ssengooba, Neema, Mbonye, Sentumbwe and Onama 2003, p. 1
- 108 Interview, 23 February 2010
- 109 Interview, 3 March 2010
- 110 Interview, 3 March 2010
- 111 Ministry of Health 2008c
- 112 Ministry of Health 2008b
- 113 Ministry of Health 2008b
- 114 Ministry of Health 2008b
- 115 Ministry of Health 2008b
- 116 Republic of Uganda 2008
- 117 Ministry of Health 2008b
- 118 Ministry of Health 2008b, p. 46
- 119 Ministry of Health 2008b
- 120 Ministry of Health 2008b
- 121 Ministry of Health 2008b
- 122 Ministry of Health 2005
- 123 Ministry of Health 2005, p. 18
- 124 Republic of Uganda 2008, p. 13
- 125 Ministry of Health 2008b
- 126 Ministry of Health 2008b, p. 33
- 127 Ministry of Health 2008b, p. 50
- 128 Lawn, Cousens and Zupan 2005

- 129 Interview, 1 March 2010
- 130 Ministry of Health 2009
- 131 Ministry of Health 2008b, p. 32
- 132 Ministry of Health 2009
- 133 The medicines included in the survey were identified by a group of medical practitioners and treat “priority diseases,” including asthma, diarrhea, helminthiasis, HIV, infections, malaria and tuberculosis. The medicines are included in World Health Organization model lists of essential medicines.
- 134 Robertson, Forte, Trapsida and Hill 2009
- 135 Robertson, Forte, Trapsida and Hill 2009
- 136 Higher prices are not always found in pharmacies than in public facilities, according to this study of 14 African countries; the rates vary considerably. However, the draft National Health Policy indicates prices in the private sector in Uganda are significantly higher than in the public sector (Ministry of Health 2009).
- 137 Uganda Bureau of Statistics and Macro International Inc. 2007
- 138 Interview, 2 March 2010
- 139 Republic of Uganda 2008, p. 19
- 140 Ministry of Health 2008b
- 141 Interview, 23 February 2010
- 142 Republic of Uganda 2008, p. 15
- 143 Museveni 2009, Nagginda Luswata 2008
- 144 Interview, 23 February 2010
- 145 Horton 2010
- 146 Republic of Uganda 2008, p. 27
- 147 Sines, Tinker and Ruben 2006
- 148 Ministry of Health 2008b, p. 59
- 149 National Planning Authority 2009, p. 234
- 150 Ministry of Health 2009, p. 7
- 151 Ministry of Health 2009, p. 18







# Population Action

INTERNATIONAL  
HEALTHY FAMILIES HEALTHY PLANET

1300 19th Street, NW, Second Floor  
Washington, DC 20036 USA

Tel: 202.557.3400  
Fax: 202.728.4177  
[www.populationaction.org](http://www.populationaction.org)

Email: [pai@popact.org](mailto:pai@popact.org)

Order publication online at  
[www.populationaction.org/order](http://www.populationaction.org/order)  
View report online  
[www.populationaction.org](http://www.populationaction.org)

© Population Action International, 2010.

Contents from this and accompanying materials may be reproduced provided Population Action International is acknowledged as the source.

