



Preventing Mortality from Postpartum Hemorrhage in Africa: Moving from Research to Practice

Conference Report
Entebbe, Uganda
4–7 April 2006

editors

Harshad Sanghvi
Dana Lewison

in collaboration with

Regional Centre for Quality of Health Care
East, Central and Southern African Health Community Secretariat



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Access to clinical and community
maternal, neonatal and women's health services



POPPI
Prevention of Postpartum
Hemorrhage Initiative

The ACCESS Program is the U.S. Agency for International Development's global program to improve maternal and newborn health. The ACCESS Program works to expand coverage, access and use of key maternal and newborn health services across a continuum of care from the household to the hospital—with the aim of making quality health services accessible as close to the home as possible. JHPIEGO implements the program in partnership with Save the Children, Constella Futures, the Academy for Educational Development, the American College of Nurse-Midwives and Interchurch Medical Assistance.
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ABBREVIATIONS AND ACRONYMS

ACCESS	Access to Clinical and Community Maternal, Neonatal and Women’s Health Services Program
AMTSL	active management of third stage of labor
ANC	antenatal care
BOC	basic obstetric care
BP/CR	birth preparedness/complication readiness
cc	cubic centimeter
CCT	controlled cord traction
CHW	community health worker
CI	confidence interval
COC	comprehensive obstetric care
DHC	District Health Committee
dl	deciliter
ECSA	East, Central and Southern Africa Health Community Secretariat
EmOC	emergency obstetric care
EOC	essential obstetric care
FIGO	International Federation of Gynecology and Obstetrics
FP	family planning
g	gram
HBLSS	Home-Based Life Saving Skills
ICM	International Confederation of Midwives
IEC	information, education and communication
IU	international unit
L	liter
LAM	Lactational Amenorrhea Method
LGA	Local Government Authority
mcg	microgram
MCH	maternal and child health
mL	milliliter
MMR	maternal mortality ratio
MOH	ministry of health
MSR	Maternité sans Risque
NAFDAC	National Agency for Food and Drug Administration and Control
NGO	nongovernmental organization
NHIS	National Health Insurance Scheme
NS	not significant
PMTCT	prevention of mother-to-child transmission (of HIV)
PNP	policies, norms and protocols
POPHI	Prevention of Postpartum Hemorrhage Initiative
PPH	postpartum hemorrhage
RCQHC	Regional Centre for Quality of Health Care
REDSO	Regional Economic Development Services Office
RH	reproductive health
RHC	Regional Health Committee
SBM-R	Standards-Based Management and Recognition
STG	standard treatment guidelines
TBA	traditional birth attendant
WHO	World Health Organization
USAID	United States Agency for International Development

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This conference was organized by the Access to Clinical and Community Maternal, Neonatal and Women's Health Services (ACCESS) Program in full partnership with the Regional Centre for Quality of Health Care (RCQHC), the East, Central and Southern African Health Community Secretariat (ECSA) and the Prevention of Postpartum Hemorrhage Initiative (POPPHI), in collaboration with the United States Agency for International Development (USAID)/Washington and regional offices, the Regional Economic Development Support Office (REDSO) and the West Africa Regional Program (WARP).

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RCQHC
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PREVENTING MORTALITY FROM POSTPARTUM HEMORRHAGE IN AFRICA: MOVING FROM RESEARCH TO PRACTICE

OVERVIEW

Severe bleeding after childbirth is the most common cause of maternal mortality, accounting for at least one-quarter of maternal deaths worldwide. Although it has long been known that postpartum hemorrhage (PPH) contributes to a larger proportion of maternal deaths in Africa, recent research published in *The Lancet* shows that the percentage is even higher than previously thought—ranging from 30–39% (Khan et al. 2006). Adding to the tragedy of each of these deaths is the fact that PPH can be prevented, and treated, through relatively simple and cost-effective, evidence-based interventions. In 2004, the International Federation of Gynecology and Obstetrics (FIGO) and the International Confederation of Midwives (ICM)—in collaboration with the United States Agency for International Development (USAID) Office of Health, Infectious Diseases, and Nutrition—issued a joint statement urging nations to pursue just such evidence-based practices. And since that time, even more evidence in support of practices that prevent or treat PPH has appeared.

Thus, the time has come to **renew our commitment to fighting PPH**—particularly in countries where this largely preventable and treatable condition still damages and destroys so many lives.

From 4–7 April 2006, the Access to Clinical and Community Maternal, Neonatal and Women’s Health Services (ACCESS) Program held a conference in Entebbe, Uganda, to review the latest evidence for approaches to preventing and treating PPH, and to explore strategies for scaling up interventions in the field (see **Appendix A** for the conference agenda)—in partnership with the Regional Centre for Quality of Health Care (RCQHC), the East, Central and Southern African Health Community Secretariat (ECSA) and the Prevention of Postpartum Hemorrhage Initiative (POPPHI); and in collaboration with USAID/Washington and USAID Regional Offices (Regional Economic Development Services Office [REDSO] and West Africa Regional Program [WARP]). All presentations and other sessions were conducted in both English and French, and all conference materials were also available in both languages. Almost two hundred participants, from Canada, Denmark, Haiti, India, Switzerland, the United States and the following 21 African countries, attended the conference:

Angola	Malawi
Benin	Mali
Burkina Faso	Mauritania
Cameroon	Mozambique
Democratic Republic of the Congo	Nigeria
Ethiopia	Rwanda
Ghana	Senegal
Guinea-Bissau	South Africa
Kenya	Tanzania
Madagascar	Uganda
	Zambia

Participants were from all levels and facets of global, regional and local health care arenas, including policymakers and program managers from ministries of health at national and subnational levels; researchers; midwives, nurses and physicians; faculty from medical, nursing and midwifery schools; in-service trainers; and leaders of nongovernmental and international donor organizations. Also in attendance were several representatives from the World Health Organization (WHO), United Nations Children’s Fund (UNICEF), and USAID global and regional offices and missions. (See **Appendix B** for a complete list of participants.)

The overall goal of the conference was to advance programming in Africa to prevent and treat PPH in facilities and in the community, in support of the Millennium Development Goal to reduce maternal mortality by 75% by 2015. Specific objectives of the conference were to:

- Review the evidence that supports strategies for prevention and treatment of PPH in health care and home birth settings, by skilled providers as well as by community health workers (CHWs) and family members;
- Examine best practices for implementing large-scale programs for preventing and treating PPH; and
- Develop action plans to prevent and treat PPH at facility and community levels using evidence-based approaches and programmatic best practices.

Harshad Sanghvi, Medical Director for JHPIEGO, set the tone of the meeting by echoing words of the esteemed Mahmoud Fathalla, former President of FIGO:

Women are not dying of PPH—because we *know* very well how to *prevent* PPH;

Women are not dying of PPH—because we *know* very well how to *treat* PPH;

Women are dying because we have not taken to scale simple prevention measures, we have not worked out how to take care to the most vulnerable and needy, and we have failed to empower our communities and most peripheral health workers to prevent and treat PPH.

“We are here to declare
and win the war against
PPH!”

—Joel Okullo

“Go home and demand.
Demand that all
providers learn AMTSL
skills and use them;
demand that oxytocin
be available and that it
get out to the periphery;
demand that these
interventions be
combined with
community-based
strategies. Be
demanding! It will make
a difference.”

—Deborah Armbruster

Although he extended an enthusiastic welcome to all in attendance, Dr. Sanghvi made a special appeal to the “everyday heroes who work on our front lines and for whom the problem of PPH is often a daily nightmare.” He encouraged participants to think of the conference as a market place where they could shop for skills and other useful knowledge to help form a practical basis for bringing about change in their institutions, countries and region. “We will discuss challenges, enhance our professional skills, and network,” said Dr. Sanghvi, forecasting the next several days, “but most important, we will renew our commitment and take bold steps together to prevent and treat PPH.” He also made the point that, in order to make a real difference, the collective effort of the conference must translate into the *actions* of individuals when the conference was over.

Joel Okullo, Director of RCQHC, introduced several themes that would crystallize over the days to come. While we are all eager “to speed up research to practice,” Dr. Okullo cautioned against becoming “our own stumbling blocks” and losing sight of quality in the process. He also spoke of the social determinants of health and how otherwise “good interventions are not always successful” in settings different from those in which they were conceived—specifically alluding to the “many women delivering at home” in Africa.

Representing the ACCESS Program, Director **Koki Agarwal** introduced another key theme of the conference, that of not allowing anything to stand in the way of taking action now. “We have no excuse,” said Dr. Agarwal, “not to put these solutions into the hands of providers.” On a related note, **Deborah Armbruster**, Director of the POPPHI project, advised participants to “be demanding” at the conference.

Nahed Matta, of USAID/Washington, recalled the PPH conference held in Bangkok by JHPIEGO’s Maternal and Neonatal Health Program in 2004, and expressed her desire for that effort to be mirrored here. She went on to question whether we have been too focused on comprehensive programs, or “the ideal scenario,” at the expense of specific interventions that might be very effective in the meantime. “The spotlight on PPH is appropriate,” Dr. Matta said, “because there’s so much we can do about it now and the ‘ideal scenario’ is not happening.” In closing, however, she made clear that she was not advocating vertical programming, and emphasized that “every contact is an opportunity” to provide HIV/AIDS, malaria, family planning, and other health services.

Margaret Ellis, of USAID/Uganda, began her speech with a simple equation—“Stop the bleeding, stop the death!” She went on to explain why the reality is unfortunately not as simple as that. “We know why this has not happened,” she said, identifying overburdened health systems, home births and competing demands among the main complicating factors. She also talked about the enormous unmet need for family planning in Uganda (33%) and urged participants to “consider both types

of prevention—family planning and the prevention of PPH—in the coming days.”

The Honorable Dr. **Alex Kyamugisha**, of the Uganda Ministry of Health, revealed that his own sister died of PPH “when the ergometrine ran out.” He talked about the importance of being innovative in our fight against PPH, again alluding to the prevalence of home births among African women. He then read Uganda Vice President Professor **Gilbert Bukenya**’s address to the conference participants, which cited misoprostol as a key item on his list of ways to lower the maternal mortality rate in Uganda. “We have very high expectations of you during this conference,” wrote Vice President Bukenya; “the policies that originate here will help ensure the future health of women, babies, nations.”



Source: Painting by Dr. Ono, Bandung, Indonesia.

KEYNOTE SPEECH—OVERCOMING RESISTANCE TO CHANGE: CREATING CHAMPIONS FOR CHANGE

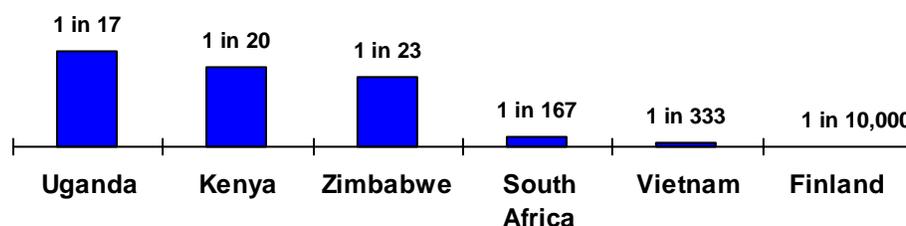
Dr. JKG Mati, Director, Institute for Reproductive Health Training and Research, Nairobi, Kenya, and formerly Professor of Obstetrics and Gynaecology, University of Nairobi, gave the keynote address.

Providing skilled attendants able to prevent, detect, and manage the major obstetric complications, together with the equipment, drugs and other supplies essential for their effective management, is the single most important factor in prevention maternal deaths.
—WHO/UNFPA/UNICEF/WB Statement, 1999

The focus of my presentation is to draw attention to the persistently high maternal mortality rates in Africa and the need to define the critical bottlenecks that have constrained our efforts over the last two decades, and which raise doubts as to whether the Millennium Development Goals are still achievable. In particular, I will refer to the challenge of resistance to change, especially with regard to adoption of evidence-based approaches to management of maternal health problems including the prevention and treatment of PPH at all levels of the health care system. We need to know in what form this resistance is, where it is, and why it exists. The goal here is to create champions for change, share lessons learned and plan the way forward. The challenge is great.

The target of Millennium Development Goal #5—improve maternal health—is to reduce maternal mortality by 75% between 1990 and 2015. Today, less than 10 years from that deadline, the majority of sub-Saharan Africa countries have yet to show a declining trend in their maternal mortality ratios. The graph below (**Figure 1**) compares the lifetime risk of dying from maternal causes in four African countries with the risk in Vietnam and Finland.

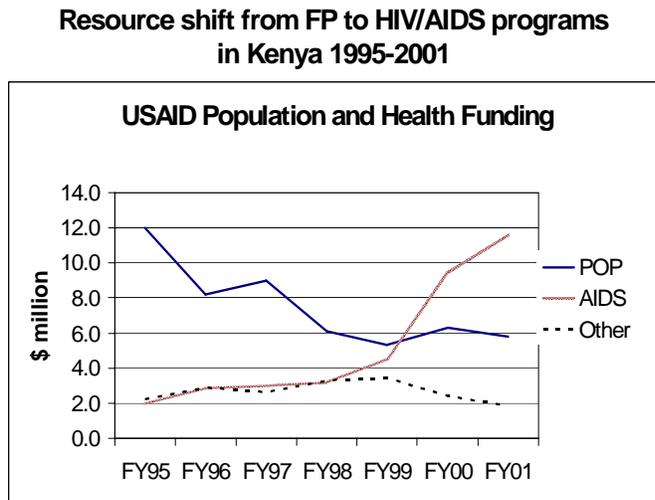
Figure 1. Lifetime Risk of Dying from Maternal Causes in Selected Countries



Source: Population Reference Bureau 2004; United Nations 2004.

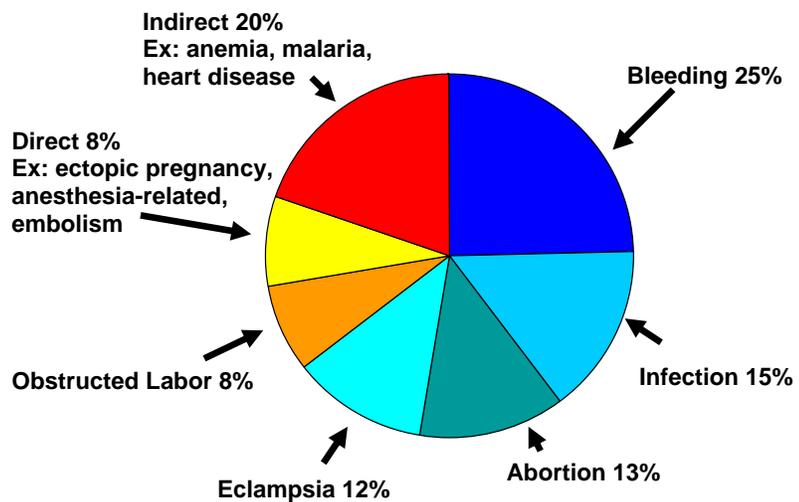
The HIV/AIDS epidemic presents a formidable challenge to reduction of maternal mortality in Africa. It has eaten into the social and economic resources of nations, resulting in a general deterioration of health care delivery systems. The shift in focus toward greater funding for AIDS (see **Figure 2**), has led to the stagnation or decline of other reproductive health programs, including family planning and other maternal health services. We must find innovative ways to tap into these funds in a way that also addresses reproductive health needs, for example, within the context of prevention of mother-to-child transmission of HIV (PMTCT).

Figure 2. An Example of Reduction in Funding for Family Planning Programs



Bleeding has been known for many years to be a major direct cause of maternal death, being responsible for approximately 25% of maternal deaths worldwide (see **Figure 3**). In fact, the incidence of bleeding may be greater than was previously thought (Khan et al. 2006). However, until recently, there has been little focus on PPH, its contribution to deaths due to bleeding, or the fact that we have the knowledge and technologies that can be used to prevent and treat it. Hence, there is a need for a special focus on PPH.

Figure 3. Worldwide Causes of Maternal Death



Source: Tinker, Koblinsky et al. 1993.

Our focus on PPH is based on the following known facts:

- Hemorrhage is a leading direct cause of maternal death; the majority of hemorrhage cases are due to PPH.
- Despite our knowledge of the risk factors, we can't predict which births will be complicated by PPH.
- Simple technologies exist for prevention and treatment of PPH; these can be taught to and used by providers at all levels of care.
- The leading causes of PPH are **uterine atony** and **lacerations of the birth canal**. This knowledge implies that we can undertake “prophylactic” actions to prevent PPH, detect PPH early and be prepared to manage it or refer the woman as appropriate.
- The proper use of the partograph to monitor labor prevents prolonged labor, an important contributor to uterine atony.
- Active management of third stage of labor (AMTSL) reduces PPH, the amount of blood loss and the need for blood transfusion.
- Attendants at all levels of care can be trained to provide AMTSL.

The above notwithstanding, it remains a major challenge to move from small studies to large-scale interventions, and to develop strategies to make this happen. Scaling up of prevention and treatment of PPH services in Africa faces considerable challenges, among them the following:

- The majority of births in the region take place outside the health care facility.
- Even when birth occurs in the health care facility, PPH can develop after the mother is discharged, which often is done within a few hours of delivery.
- There are logistical challenges, including making uterotonics available outside the health care facility, and expanding access to safe blood transfusion, including emergency transport.
- There is a critical shortage of skilled attendants at the periphery of the health system.
- Many people have ambivalent attitudes toward AMTSL and other technologies for preventing and treating PPH.
- There are still negative traditional influences and practices that hinder scale-up.

In the prevention of PPH in home births, there are both opportunities and challenges to be addressed. Opportunities include the existence of simple technologies that can be taught and applied, even at the community level, and the current focus on PPH as a major health problem.

Every attendant at birth needs to have the knowledge, skills and critical judgement needed to carry out AMTSL and access to needed supplies and equipment.

—ICM/FIGO Joint Statement

Challenges include the weak health infrastructure in many countries that constrains delivery and application of technologies; the fact that postnatal care is a neglected practice, even when births take place at the health care facility; difficulties in scaling up “targeted postpartum care,” which requires postnatal review at 48 hours, three weeks and six weeks; and the uphill task of convincing health care providers that “it can work,” that is, championing for change.

There are also policy gaps that create barriers to improving skilled attendance at births outside the health care facility. In many countries, there is no clear policy direction on how to increase access to skilled care, and whether the focus should be on changes at the institution, community or home level. Other policy gaps involve restrictions on the extended role of the nurse/midwife, for example in manual removal of the placenta, IV infusions, administering anesthesia and the like. Finally, in many countries there is no defined strategy for transitioning from traditional birth attendants (TBAs) to skilled attendant care.

In summary, lack of appropriate policies and resource allocation has perpetuated the status quo with regard to maternal mortality ratios in Africa; in other words, women are dying because countries are simply reluctant to act.

Overcoming Resistance to Change

Resistance to change in obstetric care is often encountered in linking antenatal care to delivery of services; ensuring that all women have access to skilled care instead of using the “at risk” approach; using the partograph and active management of labor; using AMTSL; and extending the roles of non-physician caregivers in certain procedures.

Resistance to change is to be found among all levels of health professionals, including obstetricians/gynecologists and midwives; medical and nursing training institutions; statutory regulatory bodies for doctors and nurses; professional societies of obstetricians/gynecologists, nurses and midwives; health management, including heads of institutions and administrators; and community members.

What are the causes of resistance to change? There is the familiar tradition: “We’ve always done it this way.” There are people’s doubts about whether innovations actually work better than the traditional practices. There is a lack of trust in data that come from outside, and consequently a need for local data. There are legal obstacles, including roles prescribed in laws and regulations. There are limited human, financial and infrastructure resources to sustain application of new practices; and there are sociocultural factors, including the status of women in society, that function as barriers to change.

“Women are not dying because of diseases we cannot treat. . . . They are dying because societies have yet to make the decision that their [women’s] lives are worth saving.”

—Mahmoud Fathalla

Creating Champions for Change

“If you are not a champion for change, be one . . . and help create another one.”
—JKG Mati

A champion for change is a person who fights, argues or speaks in support of another person or a cause. A champion is a defender, supporter, backer, advocate or guardian of the cause. We have many opportunities to create such champions:

- Pre-service training for medical, nursing and midwifery students and tutors
- Internship training
- In-service training
- Postgraduate/specialist training
- Professional associations and societies for doctors, obstetricians/gynecologists, nurses and midwives
- Health management and administration
- Women’s groups and advocates
- High-profile opinion leaders and celebrities

We have learned some valuable lessons about advocacy and the creation of champions for change. First, effective advocacy must be evidence-based; champions need research results and documented best practices to effect change. Second, the confidence of champions is strengthened by their personal exposure to practical experience, such as involvement in research networks, electives, internships, mentoring, etc. Third, overcoming resistance to change is easier where change is feasible, for example, where obstetric technologies can be adapted for use at the grass roots level by midwives.

The way forward is clear if we are to make meaningful impacts in the prevention and treatment of PPH in Africa. We must act now to:

- Scale up services for prevention and treatment of PPH, with special attention to home births.
- Review regulations to extend the role of midwives in the provision of comprehensive delivery services.
- Address critical policy issues, including access to skilled care for **all** pregnant women, strategies for transitioning from TBA to skilled attendant care, and approval of emerging effective uterotonics, especially for use in home births.

Finally, in order to push this agenda forward we must create champions of change. I hope you’ll join in this task. The challenge is great!

THE EPIDEMIOLOGY OF POSTPARTUM HEMORRHAGE

Epidemiology of Postpartum Hemorrhage

Dr. Matthews Mathai of the World Health Organization described the causes, magnitude and timing of PPH and summarized recent research findings.

More than half a million women die during pregnancy and childbirth each year, 99% of them in developing countries. Of these women, 150,000 bleed to death.

The timing of maternal deaths is generally as follows:

- 24% during pregnancy
- 16% during delivery
- 60% postpartum

More than half a million women die during pregnancy each year, 99% of them in developing countries. An estimated 150,000 of these women bleed to death.

PPH is usually defined as vaginal bleeding in excess of 500 mL following childbirth, although the general condition of the woman in labor determines the amount of blood loss that will endanger her life. PPH may occur immediately following childbirth or later, and may be a torrential loss or a steady, prolonged loss. As shown in **Table 1** below, a healthy woman can be dead within two hours of the onset of PPH if appropriate and timely interventions to save her life are not taken.

For each of the following complications, the estimated amount of time that elapses from onset of the complication to death is as follows:

Table 1. Complications and Time from Onset to Death

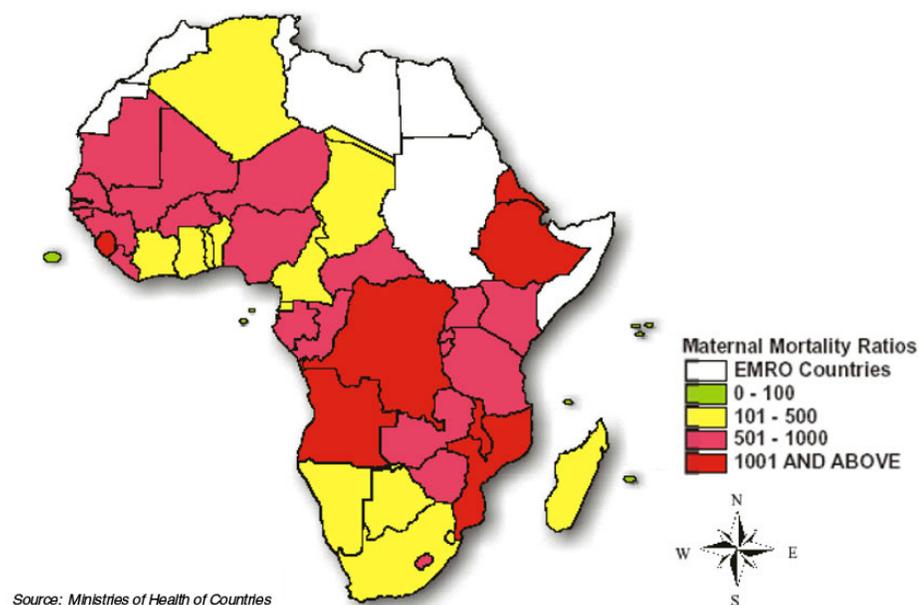
Complication	Time from Onset to Death
Severe PPH (torrential)	2 hours
Antepartum hemorrhage	12 hours
Ruptured uterus	1 day
Eclampsia	2 days
Obstructed labor	3 days
Sepsis	6 days

Clearly, PPH is a fast killer when bleeding is torrential. PPH that is slow and prolonged, however, also can kill. Whether bleeding is torrential or slow and prolonged, it is compounded when the woman has anemia, malaria or HIV/AIDS.

Although utilization of antenatal care services is generally high in Africa, skilled attendance at birth remains low, thus contributing to a high maternal mortality ratio. The latest studies published in *The Lancet* show that the percentage of deaths from hemorrhage in Africa (30–39%) is much higher than was commonly accepted (25%) (Khan et al. 2006).

Figure 4 shows maternal mortality ratios for WHO regions in Africa. Although it is 500 or below in some countries, most countries have a maternal mortality ratio above 500.

Figure 4. Maternal Mortality Ratios in the WHO African Regions, 2001



Tables 2 and 3 below, which present findings from the WHO analysis of maternal deaths published in *The Lancet* (Khan et al. 2006), show deaths from hemorrhage by region and country. One-third of deaths reported from the Africa data sets were due to hemorrhage.

Table 2. Deaths from Hemorrhage by Region

	Africa	Asia	Latin America and Caribbean	Developed Countries
Data sets	8	11	10	5
Maternal deaths	4,508	16,089	11,777	2,823
Hemorrhage	33.9% (13.3–43.6)	30.8% (5.9–48.5)	20.8% (1.1–46.9)	13.4% (4.7–34.6)
Hypertension	9.1% (3.9–21.9)	9.1% (2.0–34.3)	25.7% (7.9–52.4)	16.1% (6.7–24.3)
Sepsis	9.7% (6.3–12.6)	11.6% (0.0–13.0)	7.7% (0.0–15.1)	2.1% (0.0–5.9)

Source: Khan et al. 2006.

Table 3. Deaths from Hemorrhage in Africa, by Country

Country	Year	Maternal Deaths	MMR	Hemorrhage
DR Congo	1997	143	510	16%
Egypt	2000	585	84	30%
Senegal	2002	87	690	22%
Tanzania	1988	76	529	23%
South Africa	2002, 2003	3,121	150	10%
Zambia	1998	349	729	28%
Zimbabwe	2001	92	695	19%
MC W Africa	2001	55	334	33%

Source: Khan et al. 2006.

Risk factors do not predict PPH. More than two-thirds of women have no risk factors. Every childbirth carries risk.

Traditionally cited risk factors (high parity, multiple pregnancy, previous PPH, distended uterus, etc.) do not predict PPH well, and many women with these factors do not have PPH. More than two-thirds of women who have PPH have no identifiable risk factors. Therefore, every pregnancy should be considered to be at risk of PPH, and prevention must be offered to every woman at childbirth. Prevention and early interventions are the keys to survival.

Uterotonic drugs are not being used to prevent PPH consistently. Preliminary data from a global WHO maternal and perinatal health survey of more than 80,000 births in health facilities in seven African countries reported the use of uterotonics for one in every five births (Shah 2005).

In conclusion:

- PPH, whether fast and torrential or slow and prolonged, kills an estimated 150,000 women each year.
- PPH is compounded when the woman has anemia, malaria or HIV/AIDS.
- The percentage of deaths in Africa (30–39%) is much higher than was commonly accepted.
- Because more than two-thirds of women have no identifiable risk factors for PPH, prevention must be offered to every woman who is pregnant.
- Uterotonic drugs are not being used consistently to prevent PPH.

PREVENTING POSTPARTUM HEMORRHAGE WHERE THERE ARE SKILLED PROVIDERS

Active Management of Third Stage of Labor

Dr. Blami Dao, from the Department of Gynecology, Obstetrics and Reproductive Medicine at Souro Sanou University Teaching Hospital in Bobo Dioulasso, Burkina Faso, presented the evidence basis for active management of third stage of labor.

Prevention of PPH is an important public health issue. There are several strategies for preventing PPH, one of which is AMTSL.

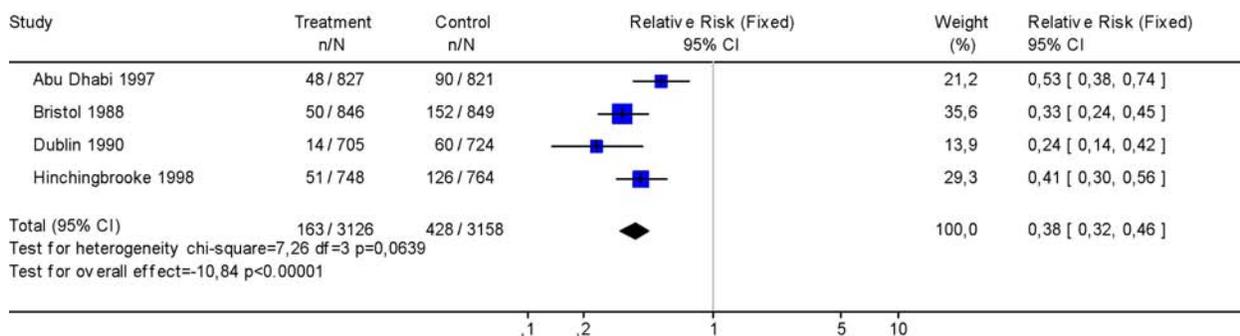
Physiologic management of third stage of labor, also known as conservative management or expectant management, involves waiting for signs of placental separation and allowing spontaneous delivery of the placenta aided by gravity.

By contrast, **active management of third stage of labor is the administration of uterotonic agents, preferably oxytocin, followed by controlled cord traction to deliver the placenta and uterine massage after the delivery of the placenta.**

Tables 4–7 show results from a meta-analysis published in *The Cochrane Database* of several key studies that compared active to physiologic management (Prendiville, Elbourne and McDonald 2000). **Table 4** shows that active management significantly reduced the risk of maternal blood loss compared to physiologic management (relative risk 0.38, 95% CI 0.32–0.46). Put another way, we need to provide 12 women with AMTSL rather than physiologic management to prevent one case of PPH.

Table 4. Comparison of Active versus Expectant Management (blood loss 500 mL or more)

Review: Active versus expectant management in the third stage of labour
 Comparison: 01 Active vs expectant management (all women)
 Outcome: 01 PPH clinically estimated blood loss greater than or equal to 500mls

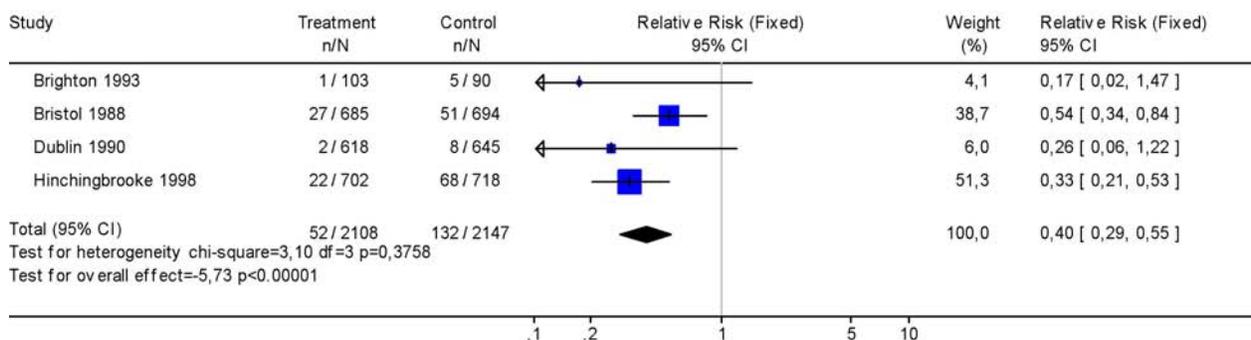


Source: Prendiville, Elbourne and McDonald 2000.

Tables 5 and 6 shows data from the same studies on maternal hemoglobin 24–48 hours after delivery and the need for blood transfusion. These findings illustrate that AMTSL significantly reduced the incidence of anemia (hemoglobin <9 g/dl) after birth, compared to physiologic management (relative risk 0.40, 95% CI 0.29–0.55), and the need for blood transfusion (relative risk 0.34, 95% CI 0.22–0.53).

Table 5. Maternal Hemoglobin Less Than 9 g/dl 24–48 Hours Postpartum

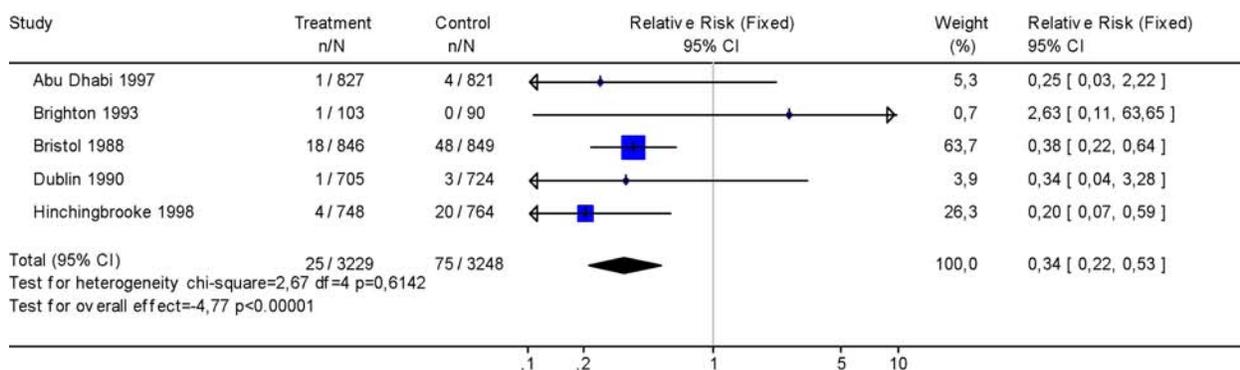
Review: Active versus expectant management in the third stage of labour
 Comparison: 01 Active vs expectant management (all women)
 Outcome: 04 Maternal Hb < 9 g/dl 24 - 48 hours post partum



Source: Prendiville, Elbourne and McDonald 2000.

Table 6. Blood Transfusion: Active versus Expectant Management of Third Stage of Labor

Review: Active versus expectant management in the third stage of labour
 Comparison: 01 Active vs expectant management (all women)
 Outcome: 05 Blood transfusion

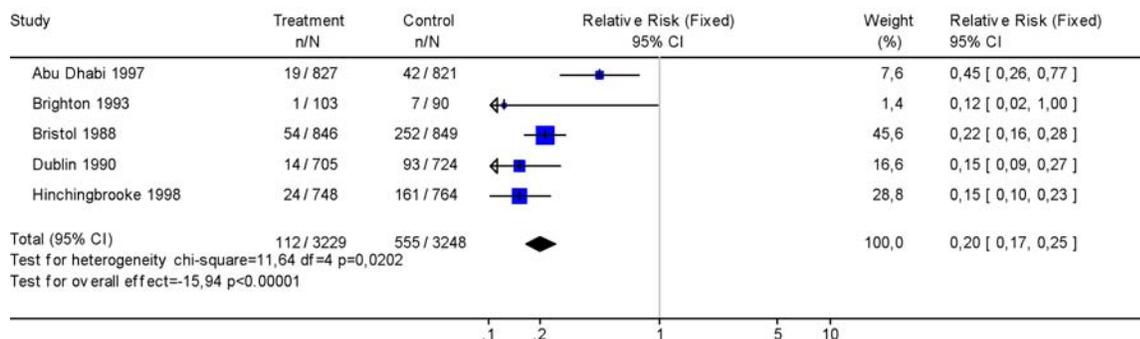


Source: Prendiville, Elbourne and McDonald 2000.

Table 7 compares the need for additional therapeutic oxytocin following active versus expectant management of third stage of labor. It shows that women who underwent AMTSL were significantly less likely to require therapeutic oxytocin than those who had passive management of labor (relative risk 0.20, 95% CI 0.17–0.25).

Table 7. Use of Oxytocics: Active versus Expectant Management of Third Stage of Labor

Review: Active versus expectant management in the third stage of labour
 Comparison: 01 Active v.s expectant management (all women)
 Outcome: 07 Therapeutic oxytocics



Source: Prendiville, Elbourne and McDonald 2000.

The data clearly demonstrate the following benefits of AMTSL:

- Less PPH (blood loss >500 mL).
- Less need for therapeutic oxytocin in the postpartum period.
- Less anemia in the postpartum period.

In addition, the meta-analysis showed that, compared to physiologic management, active management reduced the risk of prolonged third stage of labor and retained placenta.

In summary:

- There is compelling scientific evidence that AMTSL is an effective technique for preventing PPH and reducing the potential for maternal death.
- AMTSL should be included in national guidelines for safe motherhood and incorporated with training curricula in schools of nursing, midwifery and medicine.
- AMTSL should be offered to **all** women giving birth.

Overview of Uterotonic Drugs

Dr. Emmanuel Oladipo Otolorin, Regional Senior Technical Advisor, JHPIEGO/ Nigeria, gave an overview of uterotonic drugs currently available and presented data on their properties, safety, advantages, disadvantages and storage needs.

At present, the following uterotonic drugs are available:

- Injectable oxytocin, for:
 - Induction and augmentation of labor
 - Prevention of PPH using AMTSL
 - First-line drug for treatment of PPH caused by uterine atony
 - Stimulation of breastfeeding

- Injectable ergometrine and Syntometrine (combination of oxytocin and ergometrine), for:
 - AMTSL (although oxytocin is the drug of choice)
 - Second-line drug for treatment of PPH due to uterine atony
 - Treatment of postabortion bleeding
- Oral ergometrine has too little effect on blood loss after childbirth to be a good alternative to parenteral prophylactic management (de Groot 1996).
- Prostaglandin analogues, including misoprostol, for:
 - Induction of labor (ripening of cervix, inducing contractions)
 - Management of third stage of labor and its problems

COMPARISONS BETWEEN UTEROTONICS

- Injectable oxytocin versus injectable ergometrine:
 - No difference in incidence of PPH
 - Less need for manual removal of placenta with oxytocin when uterotonic was given before placental expulsion (McDonald, Prendiville and Elbourne 2003)
- Prophylactic ergometrine-oxytocin versus oxytocin:
 - Advantage: Blood loss >500 mL less frequent (McDonald, Prendiville and Elbourne 2003)
 - Disadvantages:
 - Elevated diastolic blood pressure 2.8 times more frequent
 - Vomiting 4.86 times more frequent (McDonald, Prendiville and Elbourne 2003)
- Intramuscular prostaglandins versus injectable uterotonics:
 - Advantages:
 - Mean blood loss 70 mL or less
 - Third stage 1.2 minutes shorter (Gülmezoglu et al. 2003)
 - Disadvantages:
 - Vomiting 10.7 times more often
 - Diarrhea 6.7 times more often
 - Abdominal pain 5 times more often
 - No difference in PPH, use of additional oxytocics and manual removal of placenta (Gülmezoglu et al. 2003)

In tropical climates, there is variation in the stability of uterotonics. Oxytocin is more stable than ergometrine/methylergometrine, especially with regard to light. In fact, oxytocin is not affected by light or freezing. The preferred storage is refrigeration, but oxytocin can be stored at 30°C (ambient temperature) for up to three months, depending on the manufacturer's recommendation.

Table 8 below summarizes the comparative attributes of oxytocin, ergometrine and misoprostol for prevention of PPH.

Table 8. Comparison of Uterotonics for Prevention of PPH

Consideration for PPH Prevention	Oxytocin	Ergometrine (Injection)	Misoprostol
Effectiveness	+++	++	++
Need skilled provider	Yes	Yes	No
Preparation suitable for home birth	No	No	Yes
Serious side effects	Rare	Common	Rare
Contraindications	0%	15%	0%
Heat stability	No	No	Yes
Cost	\$.10–.80	?	\$.35–.80

In summary:

- Oxytocin is the preferred drug for AMTSL, and the first-line drug for PPH caused by uterine atony.
- Ergometrine is the second-line drug for PPH, although it is associated with more serious adverse events and is heat- and light-labile.
- Misoprostol has the advantage of being inexpensive and stable at room temperature. It can be distributed effectively through community-based distribution systems.

Status of PPH Prevention in Africa: Results of a Survey in Two Countries

Alice Mutungi, Regional Centre for Quality of Health Care, Kampala, Uganda; Ominde Achola, East, Central and Southern African Health Community Secretariat (ECSA), Arusha, Tanzania; Sayoki Mfinanga, National Institute for Medical Research, Tanzania; and Ashebir Getachew Tekle-Michael, Ethiopian Society of Obstetricians and Gynecologists, shared findings from surveys of active management of third stage of labor in Ethiopia and Tanzania. They identified differences in use of ATSMML between the two countries and spoke on the challenges both countries are facing.

Ethiopia Case Study

A survey of PPH and AMTSL in Ethiopia examined facilities with at least three deliveries per day. A total of 23 health facilities in six regions were studied for three consecutive weeks. There were 286 deliveries during the survey period, and 67 health care providers were interviewed.

The survey found that AMTSL was used “correctly” in 29% of the deliveries and “adequately” in 41% of the deliveries. Although administration of oxytocin within one minute of birth is still the recognized standard for quality care, for purposes of this survey, “adequate use” was defined as administration of oxytocin within three minutes of birth.

The use of controlled cord traction, uterine massage and cord clamping was as follows:

- Controlled cord traction:
 - Correct: 70.6%
 - Incorrect (traction alone): 29.4%
- Uterine massage after delivery of the placenta:
 - Immediate only: 72.4%
 - Immediate + every 15 minutes: 9.4% (the recommended practice)
 - Never done: 18.2%
- Patterns of cord clamping:
 - Within one minute of birth: 97.6%
 - Between one and three minutes after birth: 1.2%

The survey found the following potentially harmful third stage practices: 35.7% of deliveries with fundal pressure applied; 37.8% with uterine massage following delivery of the fetus but before delivery of the placenta; 29.4% with cord traction but no support of the uterus; and 28.6% with controlled cord traction but no uterotonic after delivery of the fetus.

The survey also looked at the availability of uterotonic drugs and related issues at the 23 health facilities during the three-week survey period. Oxytocin was available at 18 of the 23 facilities, ergometrine at 21, both oxytocin and ergometrine at 16, and neither drug at two facilities.

Based on the survey results, the following recommendations were made:

- Improve drug management.
- Develop guidelines for AMTSL.
- Develop standardized, competency-based in-service and pre-service training curricula; ensure that training on AMTSL includes pharmacy personnel and addresses scientific drug quantification and storage.
- Conduct high-level advocacy, including statements on policies and adequate supplies.
- Set intervention priorities, focusing on regions with lower use of AMTSL and types of providers with low practice rates.
- Emphasize the elimination of potentially harmful practices.

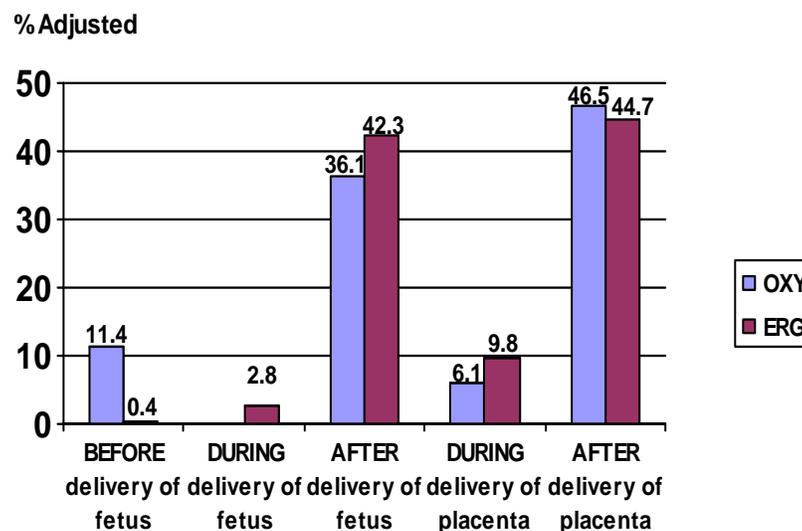
Tanzania Case Study

Both oxytocin (for induction and augmentation of labor and uterine stimulation after delivery) and ergometrine (for control of PPH after delivery) are registered on the essential drug list in Tanzania. The study described here included a total of 29 hospitals in 15 regions. Data were collected from document reviews, hospital interviews, observations of deliveries and interviews with health care providers. The basic characteristics of the deliveries observed were as follows:

- Labor was induced in 8% of the women and augmented in 10% of the women.
- Cord traction was applied in 91% of deliveries, but it was controlled by counter-traction and support to the uterus in 76% of deliveries.
- The potentially harmful practices included fundal pressure during childbirth (45% of deliveries) and uterine massage after the baby was born but before the placenta was delivered (34% of deliveries).
- Uterine massage after delivery of placenta—a good practice—occurred in 88% of deliveries.

For the best effect in AMTSL, uterotonics should be given during or immediately after the birth of the baby. In the hospitals surveyed, uterotonic drugs administered during the third stage of labor were given as follows (see **Figure 5**):

Figure 5. Administration of Uterotonic Drugs during Third Stage of Labor



Overall, oxytocin was found to be used correctly in 30.8% of deliveries in which it was administered. When ergometrine was used, it was administered correctly in 66.9% of deliveries. Correct use of AMTSL was low—in only 9% of deliveries—because most providers had missed some AMTSL steps.

The study concluded that national essential drug lists and standard treatment guidelines do not contain all components of AMTSL. About one-quarter of the facilities surveyed were storing drugs at room temperature.

Based on these findings, it is recommended that the Ministry of Health:

- Revise the national standard treatment guidelines to include all components of AMTSL according to the ICM/FIGO definition.
- Promote refresher courses and pre- and in-service training on AMTSL and drug storage.

- Ensure that oxytocin at the 10 IU dose is used at all levels for AMTSL.
- Advocate for the correct use of AMTSL throughout the country.

In summary:

- In the Ethiopia survey, AMTSL was found to be used correctly in 29% of deliveries and adequately in 41% of deliveries. Harmful third stage practices such as fundal pressure during childbirth and uterine massage before the placenta was delivered were found.
- In the Tanzania survey, oxytocin was used correctly about 31% of the time it was administered, and ergometrine was used correctly about 67% of the time. The correct use of AMTSL was low—about 9%—because providers lacked knowledge of the procedure.

Case Study: Introducing Active Management of Third Stage of Labor into Peripheral Hospitals in Zambia

Dr. Velepi Mtonga, Director of Clinical Care and Diagnostic Services, Zambia Ministry of Health; Dr. Christine Kaseba-Sata, Head of the Department of Obstetrics and Gynecology, University Teaching Hospital; and Mr. Richard Hughes, Country Director, JHPIEGO/Zambia, described the steps that have been taken to institutionalize AMTSL in Zambia and the lessons learned in the process.

Zambia has a maternal mortality ratio of 729 per 100,000 live births, and bleeding is the leading cause of maternal mortality. The total fertility rate is 5.9. Forty-three percent of deliveries occur in a health facility. More than 90% of pregnant women have at least one antenatal care visit, and more than 70% have three or more visits.

One of the first steps in introducing AMTSL was revising and strengthening midwifery and nursing education. AMTSL was integrated into pre-service curricula as routine practice, clinical practice sites were strengthened, and tutors and clinical instructors received knowledge and skills updates.

Next, AMTSL was incorporated with the various national guidelines:

- 2002: Integrated Technical Guidelines for Front Line Health Workers
- 2004: Program materials on the Prevention of Mother-to-Child Transmission of HIV
- 2004: Standard Treatment Guidelines
- 2006: National Safe Motherhood Guidelines

From 2003 to 2004, AMTSL was introduced in four districts—Lusaka, Ndola, Mufulira and Chipata—in five hospitals that serve more than 400,000 women of reproductive age, and in 14 health centers serving more than 100,000 women of reproductive age.

Table 9 shows the availability of uterotonics and the necessary storage facilities that were in place among the pilot facilities.

Table 9. Uterotonic Situation at Labor and Delivery Facilities

Oxytocin present on Labor & Delivery and maintained in cold chain	100%
Facilities reporting stock-outs of oxytocin in past 3 months	28%
Number of days of stock-outs of oxytocin among those reporting	1, 4, 7, 14, 60
Ergometrine present on Labor & Delivery	72%
Working refrigerator	89%
Spare parts for refrigerator	0%
Cool box	63%
Ice packs for maintaining cold chain	89%
Thermometer for monitoring cold chain	53%

Modest investments produced significant changes in practice in the pilot districts.

Table 10 shows the knowledge and use of AMTSL at baseline and follow-up, while **Table 11** compares skilled attendants' performance of AMTSL and infection prevention skills at baseline and follow-up. After training, 97% of providers said they had knowledge of AMTSL, and 93% reported using the procedure. Infection prevention practices improved substantially.

Table 10. Knowledge and Use of AMTSL at Baseline and Follow-Up

	Baseline (n=38)	Final (n=29)	p-value
AMTSL knowledge (definition given correctly)	18%	97%	0.0001
AMTSL used for all vaginal deliveries (self-reporting)	76%	93%	N.S.

Table 11. Comparison of AMTSL and Infection Prevention Practices at Baseline and Follow-Up

	Baseline		Final		p-value
	n	%	n	%	
Infection prevention	29	54%	29	72%	<0.001
Administration of uterotonic	31	71%	29	97%	0.008
Controlled cord traction	27	96%	29	99%	0.236
Uterine massage	31	77%	29	100%	0.006
Record keeping	31	100%	29	100%	N/A

n = number of skilled attendants observed or scored for this skill

% = proportion of skilled attendants who performed the procedure to standard

In 2004, as part of this program, a costing study was carried out in which costs were estimated based on observations and interviews with experts. Modeling the impact of routine AMTSL demonstrated the potential for significant cost savings and impact on maternal mortality. Implementing AMTSL in more than 100,000 deliveries in Zambia was estimated to

result in a net savings of more than \$145,000, and to avert a significant number of maternal deaths.

The challenges in introducing and institutionalizing AMTSL relate to the need for:

- Human resources, both skilled attendants and teachers/tutors in the pre-service setting
- Infrastructure and equipment
- Logistics systems and procurement practices
- Supervision and quality assurance

A number of valuable lessons were learned in this program. Simply putting AMTSL into the national guidelines is not sufficient. Rather, initial support for adoption and implementation is necessary, and then continuing supportive supervision is required to solidify and sustain changes. Furthermore, for a maternal health intervention like AMTSL to be successful, the health system must function effectively, and skilled attendants must be trained, supervised and motivated; available and accessible; and adequately equipped and supplied.

The Zambia experience demonstrated that AMTSL can be effectively introduced into delivery sites, even in low-resource settings. AMTSL was shown to be both life-saving and cost-saving, and should be routinely practiced, at least in all facility-based deliveries. Investments in human resources (i.e., skilled attendants), however, are needed to effectively implement and sustain AMTSL.

In summary:

- In Zambia, AMTSL was incorporated with pre-service curricula and national guidelines.
- It was then introduced in five hospitals and 14 health centers in four districts.
- After training, 97% of providers said they had knowledge of the procedure and 93% said they used the procedure.
- A costing study demonstrated that AMTSL is both a life-saving and a cost-saving procedure.

Training in Active Management of Third Stage of Labor

Mme. Aoua Zerbo from Direction de la Santé de la Famille in Burkina Faso spoke about how an innovative, competency-based training approach can produce safe and competent providers of active management of third stage of labor. She described the course content and the results and challenges of strengthening AMTSL training in Burkina Faso.

JHPIEGO's approach to training, called "mastery learning," comprises three stages:

- Knowledge update
- Standardization of skills
- Post-training follow-up

Training in AMTSL using the mastery learning approach requires the following supplies and equipment:

- Learning guide and checklist for the procedure
- Anatomic model (pelvic obstetrical model)
- Plastic model of the placenta with an umbilical cord
- Cloth model of the placenta with membranes and umbilical cord
- Straight forceps (clamp)
- Oxytocin (10 IU ampoule and 5 cc syringe)
- Consumables and infection prevention supplies

In Burkina Faso, 24% of maternal deaths are due to hemorrhage, particularly PPH. AMTSL is one important strategy that can prevent PPH.

The content of the knowledge update for AMTSL should include the concept of "best practices" and justification for their use; description of the materials needed; the three steps of the procedure; advantages of the technique; and information about how to avoid potential incidents and accidents.

Challenges encountered in Burkina Faso in using competency-based training for AMTSL included:

- Shortages of anatomic models for the number of students being trained (only three models for 81 students)
- Few competent instructors
- Shortage of coaches at the clinical sites selected for the training
- Lack of prepared training sites

In addition, the length of time allotted to training was found to be inadequate for some new students.

Plans are currently under way to incorporate AMTSL in all pre-service nursing, midwifery and medical curricula in Burkina Faso; strengthen the capacity of the training centers; advocate for the availability of oxytocin; obtain anatomic models; and increase the number of trained coaches at clinical training sites who can perform AMTSL to standard. Through these efforts, high-quality teaching of AMTSL can be achieved.

In summary:

- JHPIEGO’s mastery learning approach can be effectively used to teach AMTSL.
- Challenges encountered in using competency-based training for AMTSL in Burkina Faso included shortages of anatomic models, competent instructor and coaches, and prepared sites for clinical training.

Policy, Program and Products: Implications for Preventing Postpartum Hemorrhage in Africa

Dr. Koki Agarwal, Director of the ACCESS Program, JHPIEGO, described what countries will have to do to scale up PPH prevention and treatment programs. Her presentation focused on policy change, operational policy barriers, program implementation and challenges to be overcome.

We have the opportunity to accelerate success in the reduction of maternal mortality by putting the spotlight on PPH, the biggest maternal killer.

The household-to-hospital continuum of care works only in an enabling environment. An enabling environment means that there are sustainable policies—regarding medical norms, training, personnel, communications, organizational structures, taxes, financing, use of facilities, maintenance, vital statistics, information, supplies, transport—about health care services.

There are a number of important questions related to PPH policies that must be addressed:

- Is maternal mortality recognized as a problem?
- Do people know the contribution of PPH to the maternal mortality ratio?
- Do policymakers know that there are simple, effective solutions at the facility and community levels?
- Are there policies and guidelines that address PPH?
- Who is allowed to provide the services?
- Are uterotonic drugs needed for preventing PPH part of the essential drug list?
- Are the drugs available where needed?
- Are they available in the right formulation and strength?
- Are they available for the right price?

An effective logistics system means that the right drug is prescribed for the right reason, is available at the right time and right place, is stored at the right temperature and is available at the right price.

Cost analyses of AMTSL have shown that it is a cost-effective measure. In Guatemala, for example, the practice of AMTSL in 100,000 cases would save \$18,000 and avert 100 maternal deaths. Similarly, in Zambia, it would lead to a savings of \$145,000 and avert 467 maternal deaths.

Implementation of a PPH program requires:

- Training of skilled birth attendants in AMTSL
- Connection of the community with the facility
- Creation of a demand for prevention

Programs have the opportunity to accelerate success in reduction of maternal mortality by putting the spotlight on PPH, the biggest maternal killer.

To accelerate this success, stakeholders must:

- Recognize the problem
- Develop feasible policies and guidelines
- Incorporate evidence-based solutions into programs
- Measure progress
- Scale up programs
- Focus on prevention of PPH
- Find a policy champion
- Update standards
- Train providers
- Ensure availability of uterotonics at the most peripheral level possible
- Link with available systems and resources
- Monitor success

“We have no excuse not to put these solutions in the hands of providers.”

—Koki Agarwal

There is still much work to be done. But with solutions to the devastating problem of PPH now at hand, we must take action now!

In summary:

- The household-to-hospital continuum of care works only in an enabling environment, meaning that there are sustainable policies about health care services.
- Countries must address policy questions about maternal mortality, guidelines for PPH, service provision and availability of uterotonic drugs.
- Implementation of PPH programs requires training of skilled birth attendants, connection of communities to health care facilities and creation of a demand for prevention.

ICM/FIGO Joint Statement on Postpartum Hemorrhage

Dr. André Lalonde, International Federation of Gynecology and Obstetrics (FIGO), and Lennie Kamwendo, the Association of Malawian Midwives, presented the joint International Confederation of Midwives (ICM)/FIGO statement on PPH to demonstrate how midwives and doctors can work together to address key concerns about PPH.

The ICM/FIGO joint statement on PPH (see **Appendix C**) recognizes that PPH is a major cause of maternal death. The key elements of the joint statement are:

- The shared ICM/FIGO commitment to reduce maternal death and disability throughout the world
- Promotion of evidence-based interventions
- The importance of having AMTSL available to every childbearing woman
- The benefits of AMTSL

“Without working together, midwives and doctors stand divided. And the person who pays is the woman giving birth.”
—André Lalonde

The ICM/FIGO joint statement presents a particular challenge in Africa, where most deliveries occur in the home and skilled attendants are not available. Africa can respond to the challenge of PPH prevention by:

- Reexamining current practice; for example, midwives and doctors must recognize each other as partners working together toward a common goal, and doctors must allow midwives to extend their scope to save women’s lives
- Fostering collaborating at the national level
- Implementing joint in-service education programs for midwives and obstetricians, including joint maternal audits to ensure that PPH is managed in the same way by different cadres
- Lobbying for relevant legislation, because midwives in many countries are not allowed to administer oxytocic drugs even though there are few obstetricians available
- Allocating necessary financial resources to the prevention of PPH
- Developing and retaining human resources, at a time when many health providers are being attracted to work in developed countries
- Addressing issues concerning TBAs; each country must define its direction and policy on TBA practices

The following effects of the joint ICM/FIGO statement have already been observed:

- The understanding of AMTSL is growing.
- There is increased awareness of the evidence basis for the joint statement on PPH.
- Policy changes are already occurring; for example, Malawi is changing its policy to have oxytocin included as a first-line drug for management/prevention of PPH.

In summary:

- The joint ICM/FIGO statement on PPH recognizes that PPH is a major cause of maternal death.
- The statement has already had a positive effect on the understanding of AMTSL and policies regarding the use of oxytocin to treat PPH.

Discussion Highlights

Following are highlights from the discussions that took place after the presentations on “The Epidemiology of Postpartum Hemorrhage” and “Preventing Postpartum Hemorrhage Where There Are Skilled Providers” (as summarized on pages 10–27).

- In healthy, non-anemic women, blood loss of 500 mL may be well tolerated, but for anemic women, blood loss of even 250 mL may put them in jeopardy. The definition of PPH must take into account the effect of blood loss on the woman as well as the amount of blood lost. Any blood loss that results in altered vital signs should be considered serious, and actions should be started on suspicion of excessive blood loss.
- In considering the causes of PPH, we must remember that cervical tears can also result in significant hemorrhage. In addition, prolonged labor, which can be prevented by use of the partograph, can lead to atony and hemorrhage.
- Currently, it is not known which individual components of AMTSL work better than others, and it is unlikely that such research would receive approval from an ethics board. There was discussion about using uterine massage and controlled cord traction alone when a uterotonic is not available, but no data exist on this issue.
- Fundal massage when the placenta is still in place is known to be a harmful practice that can cause hemorrhage. Fundal massage after the placenta has been delivered is a good practice supported by some recent studies; it should be encouraged even if AMTSL is not done.
- It is generally not advisable to do controlled cord traction without first using oxytocin. In that regard, ICM/FIGO’s stance is that all midwives should learn physiologic management in addition to AMTSL to cope with situations in which uterotonics are not available.
- What we do know is that the combination of interventions that make up AMTSL works well. We should therefore use all of the components together until new research proves otherwise.
- Oxytocin should be the first-line drug for AMTSL and prevention of PPH. Unfortunately, in some countries, fake oxytocin dominates the market. We should not give up on the best drug just because fake brands are sold in some countries. Instead, we should work to ensure

proper mechanisms of distribution and purchasing through reliable, approved outlets.

- In addition to being the most effective drug for prevention of PPH, oxytocin has the advantage that it can be stored at room temperature (30°C) for up to three months if refrigeration facilities are not available. It has been shown to maintain its potency when exposed to light, and also when frozen and then thawed. In that regard, ergometrine is so labile to light and heat that its potency is always in question in the typical working conditions of labor wards in Africa, and so it should be discarded.
- Although oxytocin is not recommended for home births because it is not available in oral formulation, skilled birth attendants like midwives can give oxytocin through IV or IM injection.
- Traditional methods and medicines to prevent and control PPH are used in Africa and other parts of the world, and there are some anecdotal reports of their efficacy, but there is insufficient scientific basic for their use. In any case, if they were in widespread use and were effective, we would not have such high levels of PPH, and if the methods worked, we would not be having this conference.
- The correct timing of administering the oxytocin injection is within one minute of the birth of the baby. In the Ethiopian survey, however, when oxytocin was used within three minutes, it was considered “adequate.” In that situation, due to human resource constraints (“midwives cannot be everywhere at once”), the limit for provision of uterotonics was extended from one minute after delivery of the baby to three minutes. By contrast, in Zambia, providers are able to give the oxytocin within one minute because they are taught to have the drug drawn and ready as part of the preparation for childbirth, even in situations where only one midwife is available.
- The AMTSL program was introduced into the pre-service curriculum in Zambia before it was incorporated into the national guidelines. Starting with the pre-service curriculum was a deliberate strategy to create demand for AMTSL among a pool of providers, who would then support the development of the enabling environment. The costing study has also helped to support policy changes toward procurement of essential supplies for AMTSL, which results in cost savings. Health care facilities have been allowed to retain and use part of the 10% cost share to procure supplies when there is a stock-out in the regional stores. Furthermore, the AMTSL program, because it is not a vertical program, can be scaled up at the national level and incorporated with the national reproductive health program. The AMTSL program has leveraged resources available through the PMTCT expansion program. Also, AMTSL is being incorporated into a nationwide network of emergency obstetric care (EmOC) services, and this effort will also support rational scale-up.

PREVENTING AND TREATING POSTPARTUM HEMORRHAGE AT HOME BIRTH (WHERE THERE ARE NO SKILLED PROVIDERS)

Effectiveness of Misoprostol for Prevention of Postpartum Hemorrhage: A Review of the Global Experience

Dr. Justus Hofmeyr, Eastern Cape Department of Health, University of Witwatersrand/Fort Hare, South Africa, described the strengths and weaknesses of studies on the efficacy of misoprostol in preventing PPH, presented results of the latest meta-analysis and discussed the implications of this research for maternal health programs.

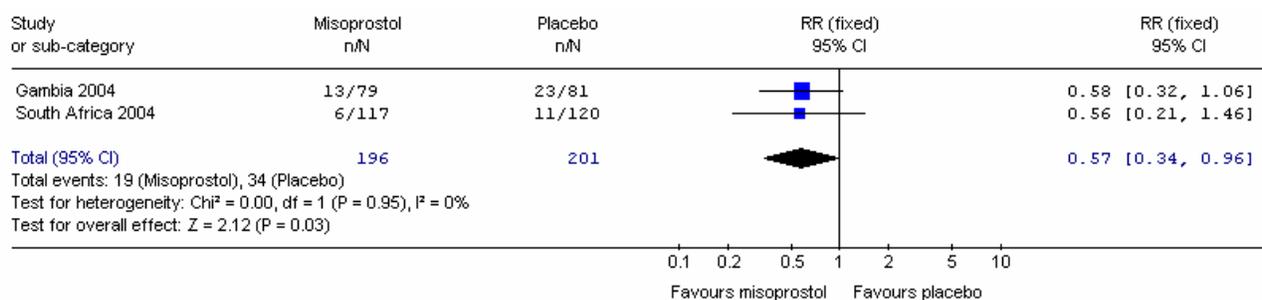
Each new medical intervention must be assessed according to the following criteria:

- Does it work?
- Is it safe?

Although no intervention is 100% safe, the benefits must be weighed against the risks at both the individual level and the public health/community level.

The speaker and his colleagues examined a number of trials that compared uterotonic drugs. Studies in the Gambia and South Africa in 2004 compared use of misoprostol versus a placebo for the treatment of PPH, in addition to routine management. The studies measured blood loss of 500 mL or more after enrollment, and found that misoprostol reduces the incidence of a large volume of blood loss (see **Table 12**) (Hofmeyr et al. 2005). The differences in the number of deaths between the two groups were not statistically significant, but are too small in number from which to draw conclusions.

Table 12. Treatment of PPH with Misoprostol versus Placebo (in addition to routine management): Measured Blood Loss 500 mL or More after Enrollment



Source: Hofmeyr et al. 2005.

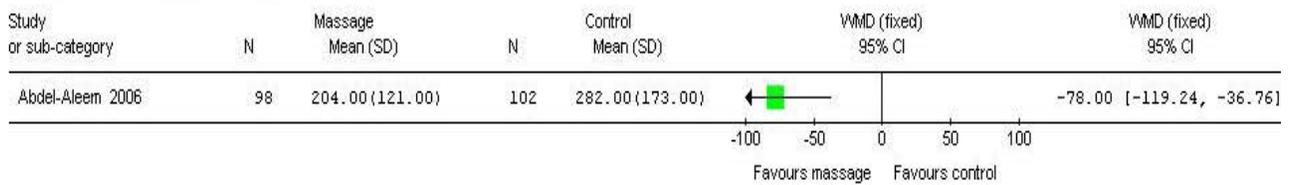
The presenter and colleagues reviewed maternal deaths in randomized trials of the use of misoprostol in the third stage of labor. They identified 32 trials in which misoprostol was used as one of the interventions for prevention of PPH and three trials in which misoprostol was used as one of the interventions for treatment of PPH. In 24 of the trials, there was no mention of maternal death, while three of the prevention trials and one of the treatment trials reported maternal deaths. The number of deaths (eight versus two) was too small to draw conclusions regarding causation (Hofmeyr and Gülmezoglu 2006).

The following conclusions were drawn from a review that was published in *The Cochrane Database* (Gülmezoglu et al. 2004):

- Oral misoprostol is less effective than injectable uterotonics (mainly oxytocin), but is more effective than doing nothing.
- Sublingual misoprostol appears to be more effective than a placebo, although additional trials are in progress.
- Blood loss is a proxy outcome; it is assumed that reduced blood loss will translate into reduced deaths.
- Prospective research is needed to measure impact of misoprostol use on overall mortality.

A study by Abdel-Aleem et al. (2006) at Assiut University Hospital, Egypt, examined the effect of uterine massage on mean blood loss, and found that persistent uterine massage after delivery of the placenta reduced the amount of blood loss and the use of additional uterotonics (see **Table 13**). Limitations of the study included the small sample size and the inability of staff to be blinded to the group allocation. Larger studies are needed to ascertain more precisely the effect of uterine massage as well as its effectiveness in the absence of injectable uterotonics.

Table 13. Uterine Massage versus Control: Mean Blood Loss (mL)



Source: Abdel-Aleem et al. 2006.

The following template (see **Table 14**) is recommended for establishing research priorities in settings where injectable uterotonics are available and in settings where they are not available:

Table 14. Template for Establishing Research Priorities

Setting	Injectable Uterotonics Available	Injectable Uterotonics Not Available
Prevention of PPH	Oxytocin	Sustained uterine massage after delivery of placenta Misoprostol
Treatment of PPH	Oxytocin Ergometrine Misoprostol	Misoprostol

In general, future research on misoprostol and uterine massage should focus on:

- Monitoring maternal deaths in all misoprostol trials and implementation programs
- Determining the lowest effective misoprostol dose (reduce risk of adverse events)
- Determining the most effective misoprostol route (Hofmeyr et al. 2005)
- Conducting studies to find out whether uterine massage after delivery of the placenta is effective alone in preventing PPH (funding will be needed to conduct these studies)

In summary:

- Studies in the Gambia and South Africa showed that misoprostol reduced the incidence of blood loss, although the number of deaths in the study and control groups was too small from which to draw conclusions regarding mortality.
- A review of 35 randomized trials of the use of misoprostol in the third stage of labor found that oral misoprostol was less effective than injectable uterotonics but more effective than using nothing.
- A study in Egypt found that persistent uterine massage after delivery of the placenta reduced the amount of blood loss and use of additional uterotonics.
- Further studies on misoprostol and uterine massage are needed.

Preventing Postpartum Hemorrhage at Primary Health Centers: Guinea-Bissau

Lars Høj, representing the Department of Obstetrics and Gynecology at Aarhus University Hospital in Denmark and the Danish Society of Obstetrics and Gynecology, described the rationale, methodology, sample size, shortcomings and results of a randomized, double-blind clinical trial of sublingual misoprostol in Guinea-Bissau. He reviewed results from other studies and reflected on the implications of these studies for PPH programs.

In 1997, Høj and colleagues conducted a prospective cohort study that followed almost 16,000 women of reproductive age in Guinea-Bissau for

approximately four years. The study registered 112 maternal deaths, which translated into a maternal mortality ratio of 800 deaths/100,000 live births. The total fertility rate was 6.5, implying that one woman in 19 suffers a pregnancy-related death. Forty-two percent of the deaths were from PPH. Of the 112 women who died, 55% died at home or on the road, 40% were never seen by a trained health care worker, and in cases of death from PPH, 52% were never seen by a trained health worker.

Between March 2003 and August 2004, Høj and colleagues conducted a randomized, double-blind trial at a local health center, Centro de Saúde de Bandim, comparing the effect of 600 mcg of sublingually administered misoprostol with a placebo after birth of the baby. Their strategy was to use AMTSL, replacing oxytocin injection with administration of three tablets of misoprostol sublingually. The women enrolled in the study received the misoprostol (330 women) or placebo (331 women) within two minutes of delivery. Blood loss was carefully measured by collecting blood-soaked drapes and pads that were then weighed on an electronic scale.

Mean blood loss was lower in the misoprostol group compared with the control group. Of the 661 women in the study, 150 (46%) in the misoprostol group and 170 (51%) in the control group had PPH of 500 mL or more (relative risk 0.87, 95% CI 0.74–1.01). The difference between the misoprostol and control groups was marked for the more severe forms of PPH, with significantly fewer women in the misoprostol group suffering from severe PPH with a blood loss of 1,000 mL or more compared to the placebo group (relative risk 0.64, 95% CI 0.44–0.94). Also, the misoprostol group had fewer instances of PPH with blood loss over 1,500 mL (relative risk 0.26, 95% CI 0.12–0.60) and a consequently greater number of near misses.

With regard to side effects, significantly more women in the misoprostol group than in the control group experienced shivering and pyrexia. There were few complaints about nausea, and few women suffered from vomiting or diarrhea in either group. Overall, most women tolerated the side effects well.

In summary:

- Sublingual misoprostol was shown to reduce the frequency of severe PPH in a randomized, double-blind clinical trial in a primary health center in Guinea-Bissau.
- More studies on the use of misoprostol outside of health facilities are warranted.
- If the drug is found to be equally beneficial and safe, sublingual misoprostol should be offered to all women in labor at the beginning of the third stage when injectable uterotonics are not available.

The difference between the misoprostol and control groups was marked for the more severe forms of PPH, with significantly fewer women in the misoprostol group suffering from severe PPH.

Preventing Postpartum Hemorrhage at Home Birth: Community-Based Approaches

Dr. Harshad Sanghvi, Medical Director, JHPIEGO, described the mounting evidence on the value of misoprostol in reducing PPH. He discussed many aspects of PPH prevention at home birth, using the Indonesia experience as an example of a successful community-based approach.

Because 50% of women give birth without a skilled attendant, the maternal health community is seeking solutions for births that occur without skilled care. Necessary elements of such a strategy are:

- Increased community awareness about PPH
- Individual education about PPH for the pregnant woman and her support persons
- Community-based distribution of misoprostol because it is effective, can be taken orally and does not deteriorate in the heat

A number of countries have experience with community-based distribution of misoprostol. Indonesia, the Gambia, Guinea-Bissau and Tanzania have completed such programs, while Pakistan, Nepal, Bangladesh, Kenya and Uganda have programs under way.

There is a mounting hierarchy of evidence about the value of misoprostol in preventing PPH:

- Clinical demonstration study: Oral misoprostol reduced the incidence of PPH to 6% (El-Refaey et al. 1997).
- Double-blind placebo controlled study: Oral misoprostol reduced the need for treatment of PPH from 8.4% to 2.8% (Hofmeyr et al. 1998).
- Rectal misoprostol versus Syntometrine for the third stage of labor study: Both resulted in similar reduction in length of the third stage, postpartum blood loss and postpartum hemoglobin, but women's blood pressure was higher with Syntometrine (Bamigboye et al. 1998).
- Oral misoprostol versus placebo study: PPH occurred in 7% of women who took oral misoprostol compared with 15% who took the placebo, and the need for therapeutic oxytocin was 16% for the misoprostol group compared with 38% for the control group (Surbek et al. 1999).
- Double-blind placebo controlled WHO multi-center study of oxytocin versus misoprostol in hospitals in eight countries: Oxytocin was preferred over misoprostol when both were available (Gülmezoglu et al. 2001).
- Double-blind controlled trial of misoprostol versus placebo in rural health centers in Guinea-Bissau: Misoprostol alone reduced severe PPH (11% versus 17%, relative risk 0.66 [0.44–0.98]) (Høj et al. 2005).

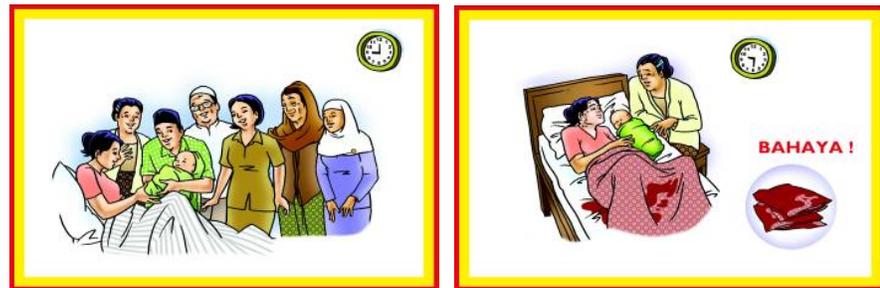
Interventions for preventing PPH in the Indonesia community-based distribution program (Sanghvi et al. 2004) were:

- Counseling about PPH by community volunteers during home visits to pregnant women
- Offering medication to prevent PPH to women who were eight months pregnant

In the Indonesia program, counseling on the following topics was offered in both the intervention and comparison areas (see **Figure 6**):

- Warning signs of dangerous bleeding
- What to do if hemorrhage occurs during or after delivery
- Where to seek emergency medical care
- The role of the midwife in AMTSL
- Use of oxytocin and common side effects

Figure 6. Tools Used for Counseling Women in Indonesia Study



The following additional information about the safe use of misoprostol was given in the intervention area (see **Figure 7**):

- Safe and correct timing in the use of misoprostol
- Risk of taking the tablet prior to delivery
- Common side effects of misoprostol
- What to do if side effects occur
- Where to go if PPH occurs even after taking the medication

Figure 7. Information about Safe Use of Misoprostol for Women in Indonesia Intervention Area



The following measures can be taken to eliminate drug misuse:

- In the distribution system:
 - Procurement done centrally
 - Repackaging and branding with safety leaflet and numbering
 - Main stock kept at nearest health center under direct control of in-charge
 - Tracking of the distribution on a weekly basis
 - Only a small number of doses with the CHW, to be replenished on turning in recruitment information
- By clients:
 - Emphasis on educating client and support persons
 - Distribution at eight months of pregnancy
 - Package with safety information
 - Retrieval of unused drug
- Discussion of other ways to eliminate drug misuses

In the Indonesia program, the combination of skilled providers using oxytocin injection and women using misoprostol distributed by the community volunteers (*kaders*) resulted in 93.7% coverage of a method of PPH prevention, compared with 76.8% (injection only) in the comparison area. There was no evidence that wide and free access to a preventive medication for PPH decreased use of skilled attendance at delivery (Sanghvi et al. 2004).

The Indonesia study demonstrated the safety, acceptability and effectiveness of the intervention:

- Safety:
 - Participants were able to repeat safety information after counseling.
 - They understood that they should seek care if excessive bleeding occurred, with or without use of the intervention drug.
 - None of the participants required referral for additional care due to increased symptoms or side effects following delivery.
- Acceptability:
 - The community accepted the trained *kader* as a provider of valuable counseling about PPH and the use of misoprostol.
 - Women understood the information provided by the *kader*, acted on it and safely took misoprostol at the correct time.
 - Women were adequately prepared to cope with increased minor discomforts that were predictable after use of misoprostol.

- Effectiveness:
 - Statistical models showed that women in the intervention area, when compared to those in the comparison area, were:
 - 25% less likely to perceive excess bleeding
 - 30% less likely to need an emergency referral to a health facility
 - 54% less likely to need an emergency referral for PPH

SUMMARY OF THE INDONESIA COMMUNITY-BASED DISTRIBUTION PROGRAM

- Safety: No woman took the medication at the wrong time.
- Acceptability: Women who used the medication said that they would recommend it and purchase the drug for future births.
- Feasibility: Community volunteers (*kaders*) successfully offered information about PPH and safely distributed the medication.
- Effectiveness: The combination of skilled providers using oxytocin and community distribution of misoprostol allowed for 94% coverage with a method to prevent PPH.

Source: Sanghvi et al. 2004.

Experience to date has shown that community-based distribution of misoprostol is suitable for countries or regions where a large proportion of births are not attended by skilled providers. It is also suitable for areas with an existing network of community workers or volunteers who are willing to visit all pregnant women—this element is critical. Once introduction is successful in a small area, the following elements are needed for expanding the program:

- National level commitment for scale-up
- Sufficient investment in training and supervision
- Monitoring of progress
- Availability of training and counseling materials, program implementation guides, evaluation tools and posters

Issues that will need to be addressed in introducing a community-based distribution program are:

- Approval for introduction on a small scale
- Registration of misoprostol and/or authorization by the appropriate regulatory body for use to prevent PPH
- Approval for distribution by trained community workers/volunteers
- Home distribution versus outreach distribution
- Distribution by TBAs versus community health volunteers
- The potential for misuse of the drug for illegal purposes, although there was no misuse among the 999 women in the Indonesia program who received the drug; misuse can be reduced by:
 - Treating the drug as a controlled substance
 - Distributing during eighth month of pregnancy

In summary:

- There is mounting evidence from a number of clinical trials that misoprostol can prevent PPH.
- Misoprostol is appropriate for community-based distribution because it is effective, can be taken orally and does not lose its effect in the heat.
- Community-based distribution of misoprostol in Indonesia and other countries has been shown to be a safe, acceptable and effective intervention.

Innovative Treatment Approaches: Options at Home Birth

Dr. Ndola Prata, from the School of Public Health, University of California at Berkeley, described promising approaches for recognizing and treating PPH at home birth. She described a study conducted in Tanzania, reviewed results from other studies and reflected on their implications for other programs.

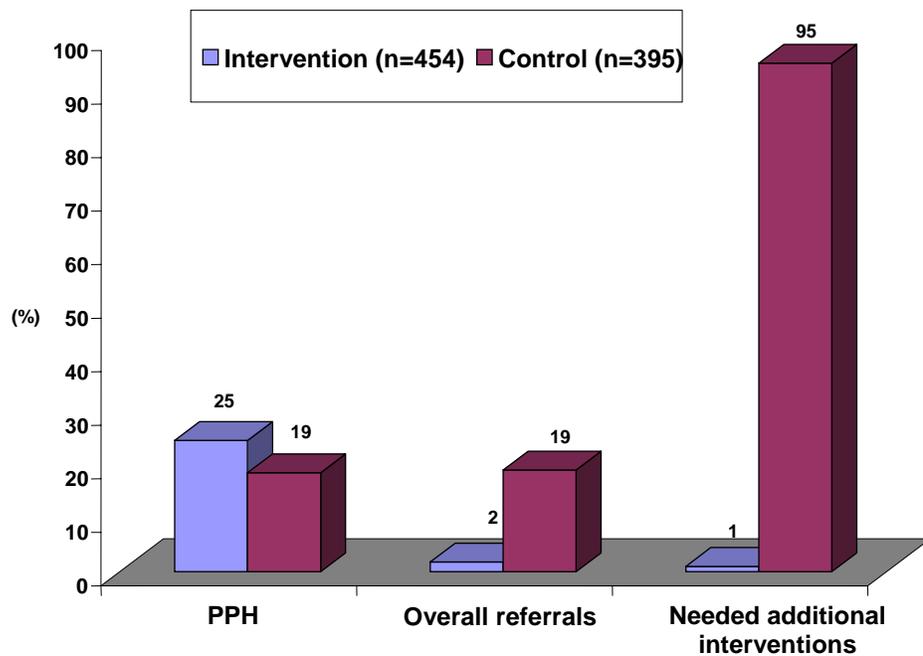
A field intervention trial was conducted in Kigoma, Tanzania, to:

- Determine the safety of household management of PPH with 100 mcg of misoprostol
- Assess the reduction in referrals as a result of the administration of misoprostol
- Assess the need for additional interventions

As part of the study, TBAs were trained to identify PPH (blood loss greater than 500 mL) and follow the study protocol. Blood loss measurement was standardized using the *kanga*, a local garment. The TBAs in the intervention area administered five tablets of misoprostol rectally after establishing PPH, and then referred women 20–30 minutes after administering misoprostol if no significant change in blood loss was observed. TBAs in non-intervention areas referred women to the nearest facility after establishing PPH.

As shown in **Figure 8** below, a total of 454 women in the intervention area and 395 women in the non-intervention area were eligible for the study. One hundred eleven women in the intervention area and 73 in the non-intervention area experienced PPH. Fewer than 2% of the women with PPH in the intervention area were referred, compared with 19% in the non-intervention area. Furthermore, of those referred, 1% from the intervention area and 95% from the non-intervention area needed additional interventions due to PPH (for IV fluids, blood transfusion, manual removal of the placenta, repair of tears, hysterectomy and other medical care).

Figure 8. Incidence of PPH at Home Birth



Source: Prata et al. 2005.

Administration of misoprostol is a simple intervention that can be used successfully at home birth.

This study demonstrated that administration of misoprostol is a simple technology that can be easily taught and used successfully at home birth by all levels of providers.

In conclusion, PPH programs in general can benefit from the use of misoprostol to manage PPH because misoprostol:

- Is a relatively inexpensive prostaglandin analogue
- Offers alternative routes of administration
- Is easy to store and remains stable in field conditions
- Can be administered to patients easily and quickly
- Is relatively safe and effective
- Can be easily used when skilled attendants are not available

In summary:

- In a field intervention study in Tanzania, TBAs received training in PPH.
- Those who had received training administered misoprostol and then referred women as necessary.
- The study showed that administration of misoprostol is a simple intervention that can be used successfully at home birth.

Cost-Effectiveness of Misoprostol to Treat Postpartum Hemorrhage

Sarah Bradley, from The Johns Hopkins University Bloomberg School of Public Health, presented findings on the cost-effectiveness of treatment of PPH with misoprostol at home birth, reviewed results from other studies and suggested implications for programs where home births attended by traditional birth attendants (TBAs) are the norm.

Misoprostol administered by TBAs trained to recognize PPH could be a cost-effective way to save lives, but economic evaluations of this approach have not yet been carried out.

The author and her colleagues conducted a cost-effectiveness analysis by applying estimates of the incidence of PPH from the Kigoma trial (Prata et al. 2005) to: a) a hypothetical cohort of 10,000 women giving birth with standard treatment (referral by TBA to hospital after blood loss ≥ 500 mL); and b) a hypothetical cohort of 10,000 women giving birth attended by TBAs who would be trained to recognize PPH and administer misoprostol rectally when blood loss was ≥ 500 mL. The analysis examined the costs of the medication, TBA training, salaries, hospitalization, transport, IV fluids and blood transfusions.

The authors concluded that, per 10,000 births, the misoprostol strategy could save 1,647 women from facing severe PPH, and could also save \$115,336 in fees for transport, hospitalization, IV therapy and blood transfusions.

Table 15 below shows the results of misoprostol versus standard care. Each model was analyzed for baseline, low and high assumptions that represented a range of costs, PPH incidence and effectiveness of misoprostol. Because the misoprostol strategy would prevent severe disease as well as save lives and money, it is said to “dominate” the standard approach in which TBAs refer a woman with PPH to the hospital.

Table 15. Results of Misoprostol Use versus Standard Care

	Severe PPH (> 750 mL)	Severe PPHs Averted	Costs per 10,000 Births	Change in Cost	Incremental Cost-Effectiveness Ratio
Baseline					
Standard care	1,823	0	\$138,982		N/A
Misoprostol	176	1,647	\$23,647	-\$115,335	Dominates
Low End					
Standard care	900	0	\$19,725	0	N/A
Misoprostol	90	810	\$5,284	-\$13,991	Dominates
High End					
Standard care	3,240	0	\$1,856,986	0	N/A
Misoprostol	500	2,920	\$293,394	-\$1,563,592	Dominates

In conclusion, in areas where TBA-attended home births are the norm, training of TBAs to administer misoprostol for controlling PPH has the potential both to save millions of dollars and to improve maternal health and survival.

In summary:

- A cost-effective analysis applied estimates of the incidence of PPH to two hypothetical cohorts of women giving birth: one cohort receiving standard treatment and one attended by TBAs who had been trained to administer misoprostol.
- Costs of training, medications, blood transfusion, transport and the like were also analyzed.
- It was concluded that the misoprostol strategy could save 1,647 women from facing severe PPH and could save \$115,336 in fees.
- Because the misoprostol strategy would prevent disease and save lives and money, it is considered to “dominate” the standard approach in which TBAs refer women with PPH to hospitals.

Home-Based Life Saving Skills: Preventing and Managing Postpartum Hemorrhage at the Home and Community Level

Diana Beck, representing the ACCESS Program and the American College of Nurse-Midwives, described promising approaches for preventing PPH at home birth.

Home-based life saving skills (HBLSS) is a family and community intervention aimed at improving responsiveness to childbirth complications occurring at home. The audience for this intervention is the home birth team, comprising pregnant women, their family caregivers, home birth attendants and community members. The focus and purpose of the intervention is:

- Prevention of problems
- Recognition of problems
- Home-based first aid
- Planning for emergency care
- Referral

HBLSS respects and builds upon existing behaviors, traditional wisdom, and evidence-based maternal and child health practices.

Twelve topics in three categories are covered in HBLSS:

- Basic topics: introduction, woman and baby problems, prevention of problems, referral
- Woman topics: too much bleeding, sickness with pain and fever, birth delay, pregnancy swelling/fits, too many children
- Baby topics: trouble breathing at birth, born too small, baby is sick

The essential elements of the HBLSS training approach are that it:

- Is skills-based
- Is designed for non- or low-literate participants
- Works toward safe, acceptable, feasible practices for the home setting

HBLSS interventions are:

- Based on current obstetric practices
- Based on a negotiation process ensuring that interventions are culturally acceptable
- Explained in a series of picture steps, kept by the family, that show the life-threatening problems that can occur and the interventions that can/should be taken

Referral, one of the purposes of HBLSS, is a call for help—help with transport, care and money. The average estimated interval from onset of antepartum hemorrhage to death is 12 hours, and from onset of PPH to death is only two hours. Birth preparedness can shorten the time needed for referral and obtaining necessary care. A study in Uttar Pradesh, India, one year after implementation of a birth planning program, found that 81.9% of participants saved money for emergency transportation during childbirth, 76.8% planned their transport arrangements and 77.5% identified a referral facility for use (Fullerton, Killian and Gass 2005).

“Because of this program, our lives are saved and we save the people’s lives too. My mother died in labor. The cause was retained placenta and bleeding. She didn’t go to the hospital. But we know all these things. I hope nobody will die of these problems anymore.”
—Focus group discussion

For slow bleeding, HBLSS directs the caregiver to “rub the womb to keep the womb hard.” This step follows the FIGO recommendation to perform routine massage of the uterus after delivery of the placenta (ICM and FIGO 2003). A small study in Assiut, Egypt (Abdel-Aleem et al. 2006) showed a mean decrease in blood loss of 78 mL when the uterus was massaged every 10 minutes for 60 minutes in conjunction with AMTSL, compared with AMTSL alone. Larger studies are needed to confirm the effect of uterine massage on hemorrhage. Another HBLSS technique for treating slow bleeding is external bimanual compression of the uterus, “holding the womb with two hands.”

In conclusion, the results of HBLSS are very encouraging, although the indicators have not adequately captured what may be the most important result of this intervention—collective and individual empowerment of the women, their families and communities. There is good evidence of transfer and retention of learning, as well as use of the skills in the home when PPH occurs. What is needed now is a rigorous trial to look at the outcomes of this innovation.

In summary:

- HBLSS is a family and community intervention to improve responsiveness to complications of childbirth occurring at home, including referral.

- The intervention builds upon existing behaviors, traditional wisdom and evidence-based practices.
- HBLSS cover basic topics, topics related to the woman and topics related to the baby.
- The training approach is designed for non- or low-literate participants.

Discussion Summary

Following are highlights of the discussions that took place after the presentations on “Preventing and Treating Postpartum Hemorrhage at Home Birth (Where There Are No Skilled Providers)” (as summarized on pages 29–42).

- There was discussion about how to ensure the correct timing for using misoprostol, and whether the delayed effect of misoprostol presents a problem. It is recommended that the woman take misoprostol immediately after birth of the baby. In Indonesia, a woman typically says a prayer right after delivery, so women were advised to take the misoprostol immediately after saying the prayer. Even though misoprostol takes a few minutes to act, it acts in time to stop the bleeding in women who are at risk of dying from PPH.
- The large, WHO multi-center study in hospital settings showed that oxytocin as part of AMTSL is somewhat better than misoprostol as part of AMTSL. Other studies show that, where AMTSL is not possible, misoprostol alone is effective in reducing PPH.
- A more comprehensive role for CHWs in efforts to prevent and treat PPH is needed; “they have a lot to contribute.” When they are available, we should use them to promote skilled attendance at birth. CHWs should also be used to deliver key messages about family planning.
- How can we prevent governments from viewing home distribution of misoprostol as an easy solution to the problem of PPH, one that de-emphasizes the importance of using skilled attendants? This is a realistic concern, but the benefits outweigh the risks. “We should have great faith in women and put the solutions in their hands, because there will always be cases in which women are unable to reach a skilled provider. The one person who will always be present at the birth is the woman. For this reason, she should be the one who has the misoprostol.” According to a recent WHO study, even if we expand our development of skilled providers dramatically, it will take a minimum of 25 years, in some places 50 or 60 years, to have skilled care at all births.
- In the Indonesia study intervention area, as a result of the PPH community intervention that also emphasized use of skilled providers, births with midwives increased significantly. In addition, the total proportion of births in which a uterotonic was available

The one person who will always be present at the birth is the woman. For this reason, she should be the one who has the misoprostol.

reached 94%, something that would have been impossible if only a skilled provider had been used.

- Skilled attendance at every birth is still the goal, but we have the technology to start saving lives now by putting solutions in the hands of the women giving birth at home and those attending them.
- There was discussion about the appropriate role of TBAs and home-based care in the context of PPH. Efforts to strengthen home-based care are to be applauded, but women should still go to the health center for postpartum and newborn care. How do we link home-based care to the health center, especially in countries where there are no CHWs? In the Kigoma intervention, fewer women who had PPH and were treated at home with misoprostol needed to be referred for further care, but it is important that women in this situation receive postpartum care after delivery, even when there are no complications. There was also discussion of the perception that by training TBAs, we are decreasing demand for skilled care, when the reality is that they can be trained to be a link between traditional and skilled care.
- Motivating community volunteers was discussed. The trust and respect they receive from the communities is their motivation. Because they are the first to see the woman, we must work with them if we want to save women's lives. TBAs and CHWs have something to contribute, but the focus should be on training midwives, because they have the critical diagnostic acumen and other skills needed to prevent and treat PPH.
- The correct dosage of misoprostol for treating PPH was clarified. For treatment of PPH, 800–1,000 mcg of misoprostol is the correct dosage, whereas for prevention of PPH, 400–600 mcg of misoprostol is the correct dosage. It was pointed out that 1,000 mcg is too high for the sublingual route but acceptable when administered rectally. The sublingual route is the “route of choice,” but with much lower doses of misoprostol.
- Packing the uterus and using tamponade before transferring a woman with PPH was discussed. The uterus should never be packed with gauze because it prevents contraction and hides bleeding and thus can worsen the woman's condition. Packing impedes (but does not stop) the flow of blood, causing the uterine cavity to fill with blood and preventing uterine retraction. On the other hand, hydrostatic tamponade seems to work but has not yet been tested at the community level.

REGISTERING MISOPROSTOL

January 2006: Nigeria, which has 10% of the world's maternal deaths, became the first country to register misoprostol for PPH.

There are eight basic steps that a country can follow to make misoprostol legally available:

1. Make the case for misoprostol to the country's decision-makers: Misoprostol is an effective drug for controlling PPH, demonstrated in more than 100 published studies. Hold a policy meeting to talk about the issues and build consensus.
2. Find partners for implementation. You will need a manufacturer. Although the drug is still made by Pfizer, it is also manufactured in the southern hemisphere (in China and Egypt, for example). The manufacturer will officially submit the regulatory application.
3. Evaluate potential distribution channels, either through the public or private sector. Choose a distribution channel that can reach beyond cities to the rural areas and is committed to keeping the price low. A "hybrid" solution in which both sectors are involved has the greatest chance to achieve a broad reach.
4. Obtain regulatory approval from the appropriate regulatory agency in the country. This depends largely on the dossier about the drug and manufacturing process that the manufacturer has submitted.

Obtaining approval for misoprostol's original indication, treatment of stomach ulcers, is typically easiest, but not registering it specifically for PPH may limit the ability to market and legally use the drug for that purpose.

5. Apply to have misoprostol added to the country's essential drug list. This may help speed up regulatory approval and sometimes even reduce or eliminate import fees, which can substantially lower the cost to the woman. WHO added misoprostol to its Essential Drug List in June 2005.
6. If the country has a national drug policy, suggest that it be updated with the current policy/approval status of misoprostol.
7. Once misoprostol is registered and available, let people know. Spread the word where women congregate and receive care, where deliveries take place and where deaths occur. Develop informational tools and marketing campaigns.
8. Monitor the effectiveness of the program. Knowledge about program effectiveness will inform future decisions about policy and distribution.

Adapted from: Musinguzi J and Holden M. 2006. Obtaining Registration of Misoprostol for Use in Prevention and Treatment of PPH. Skills Session 6. Presentation at "Preventing Postpartum Hemorrhage in Africa: Moving from Research to Practice" conference, Entebbe, Uganda, 4–7 April. (See page 60.)

TREATMENT OF POSTPARTUM HEMORRHAGE

Addressing the Challenges of Treating Postpartum Hemorrhage: First Interventions

Dr. André Lalonde, representing the International Federation of Gynecology and Obstetrics (FIGO), spoke on interventions that are possible for treating PPH at peripheral sites. He described the urgency of rapidly initiating treatment, various medical and surgical approaches, and potential innovations and how they can become more widely used.

"I am going to fetch a new baby. The journey is dangerous and I may not return. . . ."

—Common saying of Tanzanian women nearing time of delivery

As more time elapses between the point of severe shock and the start of resuscitation, the percentage of surviving patients decreases. The "golden hour" is the time in which resuscitation must begin in order to achieve maximum survival.

PPH has played a well-known role in history. Shah Jahan of India had 14 children with his wife, the Empress Mumtaz. When she died from PPH in 1630, he ordered that the most beautiful tomb on earth be built for her—the Taj Mahal. In the same century, Queen Ulrika Eleanora of Sweden had a different approach to the devastating problem of PPH. When women who were close to her died in childbirth, she mandated that one or two women from each town come to the capital for midwifery training, thereby transforming the maternal mortality situation in the country. Yet the serious problem of PPH remains today.

Caregivers can use the following interventions effectively at home birth:

- Refer to a job aid, such as a simple picture available in a delivery kit.
- Have the woman empty her bladder.
- Massage the woman's uterus after delivery of placenta.
- Call for help.
- Administer oxytocin or misoprostol.
- Transfer the woman as needed.

At the clinic level, the following EmOC interventions can be used by the midwife or nurse:

- Position the patient correctly.
- Have the patient urinate or catheterize her.
- Do a pelvic exam to detect tears.
- Remove retained placenta or placental fragments.
- Do bimanual compression of the uterus.
- Administer oxytocics/prostaglandins.

At the next level, the hospital level, the following interventions can be used:

- Refer to HAEMO or other job aid.
- Resuscitate (call for help, position, use IVs, shock pants, plus or minus tamponade).
- Catheterize/empty bladder.
- Do bimanual compression of uterus.
- Examine vagina and cervix for tears.
- Administer uterotonic drugs.

- Use intrauterine hydrostatic tamponade or shock pants.
- Perform conservative surgery (e.g., brace suture or B-Lynch technique for control of PPH).
- If possible, consider transfer to the next level if no blood is available.

Recommended steps for managing PPH are:

- Assessment of the fundus to determine whether the uterus is contracted
- Bimanual compression of the uterus
- Administration of oxytocin (5 units IV bolus; 20 units per L of normal saline IV at 60 drops/minute; 10 units intramyometrial given transabdominally)

There is no need for routine manual exploration. It presents risks for infection and hemorrhage and can be painful for the woman.

Innovations that may be effective in treating PPH are:

- The SOS Bakri Tamponade Balloon Catheter, which is easy to place and monitor; simplifies the control of bleeding, potentially avoiding the need for hysterectomy; and rapidly achieves tamponade within the uterine cavity
- A plastic urinary catheter tied by sterile suture material to a rubber glove; this device can be attached to a syringe and filled with up to 2 L of fluid
- An anti-shock garment, which reverses shock by returning blood to the vital organs, thereby restoring consciousness, pulse and blood pressure, slowing blood flow to the lower body and decreasing bleeding

In conclusion, caregivers at all levels of the health system must:

- Be prepared.
- Practice prevention of PPH.
- Assess blood loss.
- Assess maternal status.
- Resuscitate the woman vigorously and appropriately.
- Diagnose the cause of the bleeding.
- Treat the cause of PPH.

In summary:

- There are a variety of interventions to treat PPH that can be used effectively at home birth, the clinic level and the hospital level.
- The recommended steps for managing PPH are assessment of the fundus, bimanual compression and administration of oxytocin.
- Innovations such as the intrauterine hydrostatic tamponade or anti-shock garments may also be effective.

“I have lost three wives to the bleeding problem after birth. I am thankful that we now have Razia trained in the community who has more knowledge and medication to help with my new wife.”
—Afghan father, Nimruz province, 2003

Addressing the Challenges of Treating Postpartum Hemorrhage: Expanding Emergency Obstetric Care

Dr. Harshad Sanghvi, Medical Director, JHPIEGO, presented the clinical interventions for PPH, including those that can be effective where there are no skilled providers. He compared the unmet need for emergency obstetric care (EmOC) services in different countries and regions, and described behavior change interventions that have been shown to be effective.

The following clinical interventions can be used to treat PPH (see **Figures 9–12**).

Basic EmOC:

- Management of shock
- Uterotonics
- Bimanual compression
- Suturing of lacerations
- Aortic compression
- Manual removal of placenta

Comprehensive EmOC (in addition to basic interventions):

- Uterine artery ligation
- B-Lynch procedure
- Hysterectomy
- Blood transfusion

Figure 9. Controlled Cord Traction with Counter-Traction on the Uterus

(A procedure frequently used as part of AMTSL, also useful for removing retained placenta)

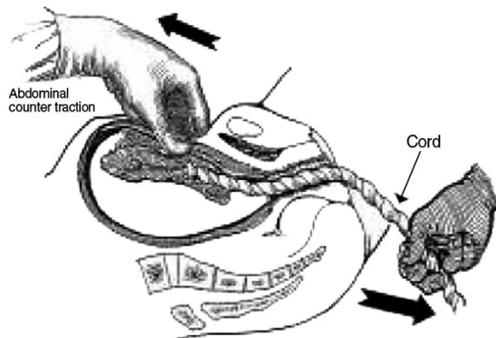


Figure 10. Manual Removal of Placenta



Figure 11. Bimanual Internal Compression of the Uterus

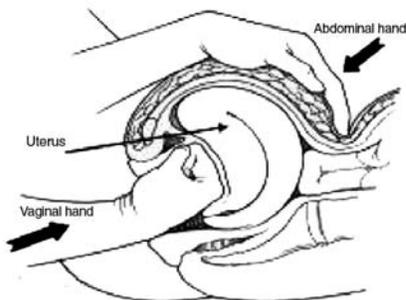
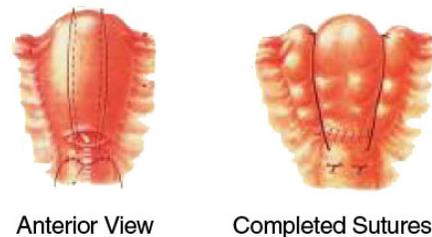


Figure 12. B-Lynch Procedure



One innovative treatment of PPH is hydrostatic tamponade using a condom or other latex balloon (see **Figure 13**). This treatment has a number of advantages:

- Easily available
- Latex quite resistant to pressure
- Inexpensive
- Quick to assemble
- Rapid results

Figure 13. Inflated Condom Attached to Catheter for Introduction into Uterus



In hydrostatic tamponade, a condom (or balloon) attached to a rubber catheter is introduced into the uterus under aseptic conditions. The condom is inflated with between 250 and 500 mL of normal saline. When bleeding is reduced, the clinician stops further inflation and folds and ties the outer end of the catheter to maintain pressure. Oxytocin infusion is continued for 24 hours. The condom is kept in the uterine cavity for 24 hours, and then deflated gradually over two hours and removed (Akhter, Begum and Kabir 2005).

The following integrated interventions can be effective where there are no skilled providers:

- Periodic home visits by community health volunteers
- Pregnancy and birth registration, with estimation of birth date
- Birth preparedness and complication readiness plans
- Iron, folate and micronutrient supplements and food distribution
- Deworming treatments
- Intermittent preventive treatment of malaria

- Distribution and use of clean birth kits
- PPH education and misoprostol distribution
- Vitamin A and iodine programs in affected areas
- Breastfeeding support
- Postpartum contraception
- Aspirin and calcium supplements (to prevent pregnancy-induced hypertension)
- Treatment of newborn infections

The underlying principle of EmOC is the need for speed: “A great many women depend on our decisions.”

The major problem in low-resource settings is the lack of basic EmOC services. Setting up these services closer to where the people live can have a bigger impact than hospitals can, because hospitals are often too far away from people’s homes. **Table 16** below shows the degree of met need for basic and comprehensive EmOC services by region (*International Journal of Gynecology and Obstetrics* 2002–2004).

Table 16. Met Need for EmOC Services: Comparison of Africa, Asia and Latin America and the Caribbean (LAC)

Need Met For:	Africa	Asia	LAC
Basic EmOC facilities: 4 facilities per 500,000 population	6–35%	5–76%	0–53%
Comprehensive EmOC: 1 facility per 500,000 population	122–193%	31–304%	164–242%
% Met need for obstetric complication	8–23%	5–19%	19–92%
Maternal mortality ratio: deaths per 100,000 live births	690–1,100	380–740	150–450

Source: *International Journal of Gynecology and Obstetrics* 2002–2004.

In Africa, the goal of having four basic EmOC facilities per 500,000 population has been achieved only to a level of 6–35%, whereas the goal of having one comprehensive EmOC facility per 500,000 population has been exceeded (122–193%). Only 8–23% of women who have obstetric complications get care, demonstrating that we need more basic facilities.

A 2004 assessment of EmOC in Uganda found that there were four basic facilities per 500,000 inhabitants. Although Uganda needs 200 such facilities overall, it has only 30. By contrast, there is one comprehensive EmOC facility per 500,000 population; in this case, the country needs 49 comprehensive facilities but has 53 (Orinda et al. 2005).

A survey of proposed supervisors of EmOC in Uganda revealed the following key skills gaps among the respondents (see **Table 17**):

Table 17. Percentage of Proposed Supervisors Who Say They Are Not Confident or Have Not Performed a Skill

EmOC Clinical Skill	% Not Confident or Never Performed Skill
Birth preparedness and complication readiness counseling	53%
Management of severe pre-eclampsia/eclampsia	47%
Management of malaria in pregnancy	33%
Monitoring of labor using the partograph	40%
Management of shock	53%
Bimanual compression	47%
Manual removal of the placenta	33%
Repair of cervical tear	47%
Vacuum extraction	40%

Source: Bluestone and Sanghvi 2005.

In conclusion, the following components must be present in order to save the lives of women and their babies:

- Expanded basic EmOC
- Policies that favor care provision at homes and peripheral centers
- Skilled caregivers (midwives) deployed in the community
- A package of care for home births provided by community volunteers
- Pre-service education that produces providers competent to provide care independently
- Focused, goal-oriented antenatal and postpartum care
- Emphasis on key areas such as hemorrhage
- Sustained investment by professional associations, governments and donors

In summary:

- There is still unmet need for basic EmOC facilities throughout Africa, Asia, and Latin America and the Caribbean.
- The major problem in low-resource settings in Africa is the lack of basic EmOC services.
- Assessments in Uganda found that the number of basic EmOC facilities was substantially lower than the number needed for the population, and that supervisors of EmOC had many gaps in key EmOC skills.
- To save lives, expanded basic EmOC is needed, along with effective policies, community-based services, pre-service education, focused antenatal and postpartum care, emphasis on key areas such as hemorrhage, and sustained investment by stakeholders and donors.

Postpartum Contraception Options, Including Options for Women with Life-Threatening Complications

Catharine McKaig, Project Director, ACCESS-FP, explained why family planning is crucial to the health of women who have recently given birth, including those who have had major obstetric complications. She spoke on the rationale for postpartum family planning, contraceptive options for specific situations, and the need to decrease missed opportunities for offering postpartum family planning.

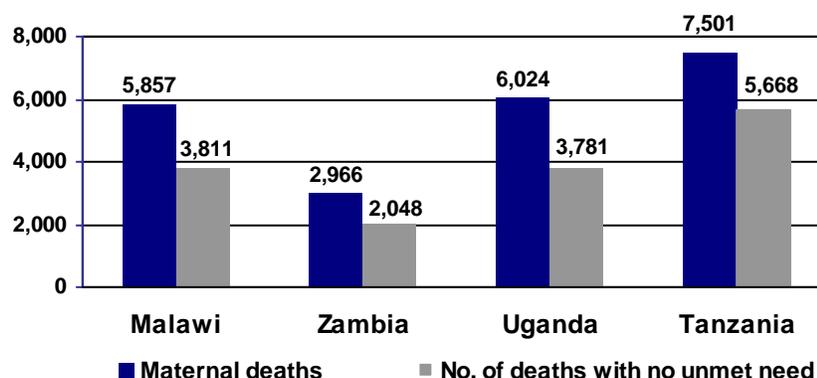
Postpartum family planning (FP) is important because:

- There is unmet need: 92–97% of women do not want another child within two years of giving birth, but 40% of these women have an unmet need for FP in the first year postpartum.
- FP reduces unintended pregnancies.
- Birth spacing has positive effects on newborn health outcomes and maternal health.

Longer birth intervals are an important factor in improving infant health.

The possible benefits of eliminating unmet need for FP in four African countries are shown in **Figure 14**. With expanded access to and availability of family planning and birth spacing, it is possible that approximately 32% of maternal deaths would be avoided and 7,040 maternal lives would be saved.

Figure 14. Number of Maternal Deaths with and without Unmet Need for Family Planning (1996–2003)



Sources: Data Online for Population, Health & Nutrition (DOLPHN), Demographic and Health Surveys (DHS) and Population Health and Nutrition Information (PHNI) Web sites.

Longer birth intervals are an important factor in improving infant health, because the mother can breastfeed her last baby and provide more care, food and attention to her other children and her husband. Babies who are weaned early are at higher risk for dangerous infections. New research shows that children born less than two years after a previous birth are two and half times more likely to die than children born three to five years after a previous birth. Short birth intervals also decrease the survival chances of the preceding child (Rutstein 2005).

A review of nine descriptive studies on postpartum women and FP found the following common themes:

- The majority of women want to delay the next birth for two years.
- Postpartum women want to space or limit births.
- Women are concerned about infant health.
- There is a trend toward natural methods of FP.
- There is confusion about breastfeeding and the return to fertility.
- Husbands' opinions matter.
- Contraceptive knowledge and past use matter.

A review of 13 studies, primarily facility-based, showed that successful postpartum FP interventions:

- Work across the continuum of care and extend it—from the antenatal period, through birth, the immediate postpartum and extended postpartum periods
- Make FP information and services available on-site; when services are integrated, FP use increases
- Integrate the Lactational Amenorrhea Method (LAM); discussion of return to fertility facilitates the transition to modern methods
- Offer a choice of contraceptives; the greater the contraceptive choice, the greater the use of postpartum FP

The following contraceptive methods are appropriate in the extended postpartum period for breastfeeding women (see **Table 18**):

Table 18. First-, Second- and Third-Choice Contraceptive Methods for Breastfeeding Women

First-Choice Methods: Do not interfere with breastfeeding and are safe to use any time after birth	Second-Choice Methods: Contain the hormone progestin	Third-Choice Methods: Contain the hormone estrogen
Lactational amenorrhea method (LAM) Condoms Diaphragm IUD (non-hormonal) Vasectomy Tubal ligation	Mini-pill Progestin-only injectables (e.g., Depo-Provera®) Implants (e.g., Norplant®)	Combined oral contraceptives Combined injectables Contraceptive patch Vaginal ring

Adapted from: Stephenson and MacDonald 2005.

In summary, for women with life-threatening complications:

- Good counseling is critical.
- A range of methods must be available to ensure choice.
- Birth spacing is important.

Missed opportunities fall into three basic categories:

- Women not in contact with or marginal to the health system
- Women in the system but not served
- Women transitioning from LAM or using exclusive breastfeeding as a FP method

Postpartum FP must meet the challenge, and take advantage of these missed opportunities in order to save lives and improve newborn and maternal health outcomes.

Discussion Summary

Following are highlights of the discussion that took place following the presentations on “Treatment of Postpartum Hemorrhage” (as summarized on pages 45–53).

- Providers in Nigeria are being trained to include a fourth stage of delivery, which is very important in screening for PPH and initiating treatment if necessary. We often forget that there is a fourth stage of labor. The provider should put the baby on the mother’s breast after delivery so that she or he can take care of the mother.
- The unmet need for EmOC in African health facilities is real, but in many cases hospitals do have the capacity to provide EmOC. Nevertheless, we cannot depend on our current EmOC facilities to respond to women’s needs. In the case of PPH, we have to place the emphasis on preventing PPH and responding to the emergency.

Supporting Programs to Prevent Mortality from PPH: Panel of Donors and Technical Assistance Agencies

The message is that people should not wait for assistance to come to them. Be proactive and look for assistance, and start moving forward while waiting for funding.

Representatives from donor and technical assistance agencies made brief presentations that described their organizations, discussed programs in which maternal and neonatal health and PPH are the priorities, and described how countries and programs can seek their assistance.

United States Agency for International Development (USAID) (www.usaid.gov)

USAID has supported many initiatives to address PPH. Currently, USAID’s major maternal health projects and lead organizations are:

- ACCESS/JHPIEGO
- POPPHI/PATH
- Initiative for Maternal Mortality Programme Assessment (IMMPACT)/University of Aberdeen
- The Health Research Program (HARP)/The Johns Hopkins University
- Child Survival and Health Grants Program (CSHGP)
- A2Z (USAID Micronutrient and Child Blindness Project)/Academy for Educational Development

- Food and Nutritional Assistance Project (FANTA)/Academy for Educational Development
- Quality Assurance/Workforce Development Project (QAWD)/University Research Corporation
- Partners for Health Reform Plus (PHR)/Abt Associates
- Rational Pharmaceutical Management/Management Sciences for Health (MSH)
- HealthTech/PATH
- Policy/Futures Group
- MEASURE/DHS, MACRO
- MEASURE/EVAL-UNC
- EngenderHealth
- Centers for Disease Control and Prevention (CDC)
- World Health Organization (WHO)

To improve maternal and newborn survival in Africa, USAID has undertaken the following programs and activities:

- Country programs: addressing family planning, maternal and newborn health, obstetric fistula, malaria and prevention of mother-to-child transmission of HIV, health systems
- Collaboration with WHO/Regional Office for Africa on the Africa Roadmap Initiative
- Regional programs: REDSO/WARP, RCQHC, ECSA
- White Ribbon Alliance
- Research: Quality Assurance Workforce Development Project, Initiative for Maternal Mortality Programme Assessment

Following are other agencies' initiatives to address PPH:

World Health Organization (www.who.int)

- Development of guidelines and standards in collaboration with other organizations
- Development of modules for midwifery training
- Reproductive health research and systematic review
- Technical assistance to ministries of health (MOHs)
- Assistance in adapting training materials and strengthening systems
- Scale-up of best practices

United Nations Children's Fund (UNICEF) (www.unicef.org)

- Focus on newborn care, integrated with maternal health initiatives
- Support for EmOC work in maternal death audit
- Africa-wide child survival initiative

East, Central and Southern African (ECSA) Health Community Secretariat (www.crhcs.or.tz)

- Dissemination of best practices in preventing PPH
- Institutionalization of maternal mortality audits
- Initiation of FP and PMTCT services
- Information, communication and dissemination

Regional Centre for Quality of Health Care (RCQHC)
(www.rcqhc.org)

- Inclusion of PPH in educational materials
- Needs assessment in PPH in neighboring countries

United Nations Population Fund (UNFPA) (www.unfpa.org)

- Targeting of 45 African countries to help them achieve Millennium Development Goals
- Work in FP, obstetric fistula, reproductive health/HIV integration and PMTCT
- Increased commitment to reduce maternal mortality

EngenderHealth (www.engenderhealth.org)

- Involvement in global working group to implement AMTSL
- Development of training curriculum “Men as Partners”
- Quality improvement
- Client-Oriented, Provider-Efficient (COPE) assessment technique

IntraHealth International (www.intrahealth.org)

- Introduction of AMTSL in Ethiopia, Benin and Mali, with plans to introduce in Senegal and Rwanda
- Development of training modules, job aids and posters

Family Care International (FCI) (www.familycareintl.org)

- Projects in adolescent health and safe motherhood
- Support to implementation of AMTSL in collaboration with UNITY Health Project

Population Council (www.popcouncil.org)

- Operational research, particularly in focused antenatal care and adolescent reproductive health
- Policy development and dissemination
- Collaboration with MOHs and WHO to improve the quality of service delivery

Management Sciences for Health/Rational Pharmaceutical Management Plus (www.msh.org)

- Work with POPPHI
- Facility assessment in PPH in two countries
- Work with Project AWARE in commodity security plan
- Assessment and development of pharmaceutical systems

American College of Nurse-Midwives (ACNM) (www.acnm.org)

- A partner in the ACCESS Program
- Training in life-saving skills in EmOC
- First to introduce AMTSL and develop AMTSL training materials

Prevention of Postpartum Hemorrhage Initiative (POPPHI)
(www.pphprevention.org)

- Partnership with Research Triangle Institute and EngenderHealth and work with FIGO and ICM
- Support to identify and expand programs to prevent PPH
- Support to small grants to initiate programs to prevent PPH
- Development of educational materials, tool kits and CD-ROMs
- Collection and dissemination of best practices

Interchurch Medical Assistance (IMA) (www.interchurch.org)

- A partner in the ACCESS Program
- Work in remote areas
- Ensuring procurement of medical equipment and medicine to faith-based organizations
- Work with partners in strengthening health zones and developing capacities
- Work with MOHs and WHO in service availability mapping
- Provision of medicines and supplies in case of natural disaster

Venture Strategies for Health and Development
(www.venturestrategies.org)

- Initiation of low-cost strategies (misoprostol) to support PPH programs
- Assistance to register misoprostol in countries and support operational research
- Donation of misoprostol

JHPIEGO (www.jhpiego.org)

- Lead partner in the ACCESS Program
- Provision of support in service delivery and capacity building in family planning, maternal and child health, and HIV/AIDS
- Special interest in policy, advocacy and development of tools
- Transferring research to practice and scale-up
- Development of evidence-based materials, advocacy tools and service delivery guidelines
- Development of “champions for change” worldwide

THE PPH CONFERENCE MARKET PLACE

The Market Place, held on the second day of the conference, was an opportunity for participants to observe procedures and learn new skills. It was also an opportunity to discuss critical issues in depth, clarify concerns and doubts, and share ideas in a smaller group setting. Following are highlights of key issues that were raised in each of the seven skills labs.

Skills Lab #1: Active Management of the Third Stage of Labor

The purpose of this session was to:

- Demonstrate the components of AMTSL; and
- Help clinicians understand how to integrate the components with the birth process.

Anatomic models (childbirth simulator, newborn doll, cloth placenta and membranes), appropriate infection prevention equipment and other supplies were used in this skills lab to enable participants to “walk through” each step with the type of equipment available at their own sites. They also had the opportunity to practice communicating with the “woman” about the procedure and ensuring that essential newborn care was maintained.

Participants discussed the following questions:

- Correct timing of the oxytocin injection
- Correct placement of the hands during controlled cord traction and counter-traction to the uterus
- How to proceed if the placenta is not delivered in the first contraction
- How “solo” providers should handle the care of both mother and baby

It was evident that some participants had not performed AMTSL because they lacked correct information about it. Many left the session with a new understanding of the procedure and voiced a commitment to increase the use of AMTSL where they work.

Skills Lab #2: Basic Procedures for Treatment of PPH

Four important skills for treating PPH—aortic compression, manual removal of the placenta, bimanual compression of the uterus and suturing of cervical tears—were demonstrated using anatomic models, including an innovative model for cervical tears. A number of questions about treating PPH and performing the individual skills were addressed:

- Treatment of PPH due to atonic uterus: The sequence of interventions for treating PPH if the placenta is not retained should be: 1) administration of uterotonics; 2) uterine massage; and 3) aortic compression and/or bimanual compression. The role of injection of oxytocin into the umbilical vein or myometrium for retained placenta is under investigation.
- Aortic compression: There are no contraindications for this procedure, although it works better in slimmer patients. Perform this procedure until the bleeding has stopped; it should be performed even during transfer and referral.
- Bimanual compression of the uterus: Perform this procedure until the bleeding has stopped; it should be performed even during transfer and referral. External compression of the uterus with two hands has been advocated, but its efficacy is not certain.
- Manual removal of the placenta:
 - Always give uterotonic (oxytocin) IM or IV, as well as prophylactic antibiotics.
 - The standard definition of retained placenta is 30 minutes, but intervention may have to be done earlier if the woman is bleeding.
- Suturing of cervical tears should be possible at basic emergency obstetric care sites.

Skills Lab #3: Innovations in Treatment of PPH

Participants viewed and discussed demonstrations of innovative treatments. The participants expressed interest in incorporating training in innovative techniques with other PPH training and continuing medical education. They also were interested in taking part in larger studies of these innovations that may be carried out in their clinical settings.

A demonstration of uterine tamponade highlighted the following issues:

- A condom is used over a simple urinary bladder catheter to inflate the postpartum uterus.
- It is recommended that all women undergoing uterine tamponade receive antibiotic prophylaxis.
- Current experience is limited to use for 24 hours; shorter durations have not been tried.
- Other inflated devices such as balloons and gloves have been tried.

Skills Lab #4: Infection Prevention and Safe Injections

Through discussion, demonstrations and pictorial exercises, selected infection prevention and injection safety procedures were addressed. The need for all institutions to make infection prevention standards and

guidelines available, and to ensure that the following infection prevention practices are carried out according to the standards, was emphasized.

- Disposal of waste after normal childbirth, including segregation of waste at the point of generation
- Reprocessing of instruments
- Preparation of chlorine solution
- Processes for decontamination, cleaning, sterilization and high-level disinfection

Skills Lab #5: Ensuring Efficient Supply and Storage of Uterotonics: Pharmaceutical Management Issues in Prevention of PPH

The following issues related to uterotonics were explored:

- Quality assurance for uterotonics is a challenge, and must be done through appropriate supplier selection, quality control laboratories and continual post-distribution surveillance in-country.
- Uterotonics should be integrated with existing medicine distribution systems that ensure cold chain.
- The recommended “room temperature” for storage of oxytocin should be specified as 25–30°C.
- Local manufacture of uterotonics (e.g., as in Nigeria) should be encouraged as a way to increase availability of affordable uterotonics.
- Pharmacists, pharmacy attendants and supply/procurement officers play an important role in ensuring successful implementation of AMTSL, through contributing technical expertise concerning efficacy, stability and quality of uterotonics.
- Misoprostol (Vagiprost®) has been “registered” for off-label use in Kenya; but there is no policy on this. Nigeria has also registered misoprostol for use at tertiary level only.
- Findings from studies on AMTSL in Tanzania and Ethiopia highlight problems with inventory management for uterotonics (e.g., stock-outs of up to four months and over-stocks of six months); these call for efforts at national and international levels to improve supply management.
- In Mali, all medicines on the essential medicines list are tax-exempt, thus enabling greater accessibility to essential medicines. Other countries where this exemption does not already exist may need to consider instituting it.
- In countries where uterotonics are not included on the essential medicines list, efforts should be intensified to have them included.
- Advocacy for AMTSL is necessary to ensure appropriate government support for implementation and budgetary allocation.

Skills Lab #6: Obtaining Registration of Misoprostol for Use in Prevention and Treatment of PPH

In this session, the presenters explained that in June 2005 WHO added misoprostol to its Essential Medicines List, which describes the drug as a complementary oxytocic. That there are more than 100 published papers on the clinical effectiveness of misoprostol was discussed. See page 44 for the eight basic steps for registering misoprostol in a country.

Skills Lab #7: Social Mobilization

Participants did role playing in which they represented policymakers, facilities, providers, community members, families and individual women. The role play scenario involved a district hospital administrator bringing a group together in response to the death of the Prime Minister's wife in childbirth. The participants were asked to agree on a common goal or issue and describe steps they would take to raise the level of awareness and increase actions to improve maternal health. Participants came to the following conclusions as a result of their role play experiences:

- Different segments of the community have different interests and priorities. It is important therefore to agree on a common goal.
- TBAs and midwives must come together and put aside any mistrust and competition.
- We have to show communities that not solving the problem of PPH has negative economic, political, social and personal implications.
- The problem of PPH may not be a catalyst for change. It must be presented in a way that makes it relevant.
- Political solutions may be long-term ones, so we need to do something now.
- We need to figure out now how best to collaborate and what we need to mobilize to prevent PPH.

CONCURRENT SMALL GROUP DISCUSSIONS

Following are the results of participants' brainstorming sessions on two broad topics: 1) the challenges and potential solutions to promoting and scaling up use of active management of the third stage of labor; and 2) the challenges and potential solutions to promoting community interventions for the prevention of PPH.

Group 1: Promoting and Scaling up Active Management of the Third Stage of Labor

Addressing Policy, Ensuring Availability of Uterotonics and Monitoring Progress

General policy recommendations:

- Conduct advocacy to ensure that policymakers and decision-makers understand the issues.
- Integrate AMTSL with reproductive policy and ensure that it is routinely practiced for all births with skilled attendants.
- Include oxytocin as the first-line drug on essential medicines lists.
- Prioritize training of the front-line providers in country training strategies.
- Standardize training content for AMTSL.
- Include training in AMTSL as part of EmOC training whenever possible.

Policy recommendations concerning uterotonic drugs:

- Update the standard treatment guidelines.
- Integrate or piggy-back oxytocin into the existing cold chain system or use an alternative system to ensure cold chain.
- Update drug management policies and training for pharmaceutical managers and pharmacists.
- Link pharmacists and clinicians to ensure availability of oxytocin where needed.
- Ensure that high-quality data are available for adequate procurement and distribution.
- Establish reproductive health and AMTSL drug security plans.
- Ensure that program managers are informed about AMTSL.

Monitoring:

- Note use of AMTSL in patient's chart, on partograph, and/or in the delivery book or log.
- Monitor availability of oxytocin and number of stock-outs per year.
- Observe births and use of AMTSL to monitor quality (random checks or supervisory visits).
- Use indicators such as percentage of providers trained in AMTSL, level of provider and client satisfaction with AMTSL, percentage of

women receiving AMTSL and percentage decrease in number of PPH cases.

Role of regional organizations in expanding use of AMTSL:

- Provide high-level advocacy and funding for training.
- Support professional organizations and countries to expand use of AMTSL.
- Identify best practices for scaling up.

Ensuring Active Management of the Third Stage of Labor for All: Delivering the Service

The following actions that can help overcome the barriers to service delivery were discussed:

- Address shortages of human resources:
 - Build knowledge and skills through education and training.
 - Improve working conditions.
 - Create and strengthen professional associations.
 - Strengthen supervision.
- Solve the problem of shortages of drugs and supplies:
 - Conduct training in logistics management.
 - Increase funding for commodities.
 - Increase collaboration between end user and supplier.
 - Ensure accurate record keeping.
- Address the lack of policies and guidelines:
 - Conduct advocacy on AMTSL and use of oxytocin.
 - Revise essential medicines lists.
 - Revise national policies and guidelines so that emergency drugs can be procured directly.
 - Decentralize drug distribution.
 - Shift tasks among cadres.
- Strengthen infrastructure:
 - Upgrade lower level health care facilities.
 - Obtain funding to invest in infrastructure.
 - Improve transportation and roads.
- Improve monitoring and evaluation:
 - Develop indicators.
 - Promote regular supervisory visits.

- Support women and the community:
 - Increase knowledge and demand.
 - Promote birth preparedness and complication readiness in communities and provider training.
 - Upgrade transport and decrease distance to services.
 - Improve decision-making.
 - Increase funding.

Training and Supportive Supervision for Active Management of the Third Stage of Labor

- Conduct needs assessment of:
 - Policies
 - Provider knowledge, attitudes and skills
 - Logistics of oxytocin use
 - Supply chain of commodities
 - Available curricula, learning materials and equipment
 - Facility infrastructure
- After needs assessment:
 - Compile and analyze results and disseminate them.
 - Develop action plans.
 - Identify providers to be trained.
 - Revise training materials.
 - Roll out a pilot program.
 - Evaluate and identify gaps.
 - Revise the program.
 - Expand the program to other areas.
 - Monitor and supervise.
 - Conduct training of trainers.
- Overcome barriers to improving training and supportive supervision:
 - Achieve buy-in at high level.
 - Invest in human resources, equipment and supplies.
 - Develop policies and standard treatment guidelines.
 - Address negative attitudes.
 - Create an enabling environment.
- Take action:
 - Strengthen provider knowledge and skills.
 - Strengthen supervision.

Group 2: Promoting Community Interventions to Prevent PPH

Addressing Policy, Ensuring Availability of Misoprostol and Monitoring Progress

- Identify key advocates.
- Use data, research and evidence (much of the evidence is available in this report) to influence policymakers.

- Disseminate new research results on misoprostol to health professionals.
- Create political commitment to promote misoprostol among various cadres.
- Involve high-level leaders, key stakeholders and donors.
- Promote involvement and support of professional associations, academics and international agencies.
- Identify an indigenous pharmaceutical company.
- Identify private sector champions.
- Use evidence and examples from other agencies and corporations in Africa.
- Engage clinicians, national regulatory bodies and government officials in policy dialogue to create consensus.
- Consider making the drug available in one pilot district.
- Use community health workers to distribute misoprostol and supervise its use at home birth.
- Reform health policies that influence use of misoprostol in health facilities.
- Ensure that misoprostol is available at the lowest level of the health care system.
- Explore the role of religious groups with regard to resistance or fears associated with misoprostol.

Community Education and Distribution of Misoprostol

- Communities can be part of the supervision and monitoring of misoprostol use.
- Training in the use of misoprostol must be accessible to non-literate community members.
- Training must be done at least annually in order to refresh learning and mobilize community health workers and volunteers.
- Guidelines for how to maintain an effective distribution system for misoprostol are needed.

Training and Supportive Supervision for Community Interventions

- There are many challenges to training and supervising community volunteers in distributing misoprostol, including:
 - Developing the relevant content of the training
 - Shortening the duration of training
 - Overcoming language barriers and low literacy levels of the trainees
 - Addressing issues related to motivation, attrition and resistance to change
 - Achieving community acceptance of the volunteers
 - Overcoming geographic barriers
 - Increasing availability of trainers, training materials and supplies
 - Achieving sustainability of the training

- The training content should include the following topics:
 - Timing of administering/distributing misoprostol to pregnant women
 - Description of the drug and its effects
 - PPH and other causes of maternal mortality
 - Determining duration of pregnancy
 - When to refer
 - Route of administration and dosage
 - Stock management
 - Side effects and benefits
 - Monitoring and retrieval when drug is not used
 - Counseling messages for the family
 - Demonstration of use of the drug
 - Communication with community leaders
 - Mechanisms for costing and accounting
 - Record keeping and reporting
 - Schedule and structure of supervision
 - Identification of PPH
 - Birth preparedness and complication readiness
 - System for reporting on the delivery
 - Referral for postnatal care
 - Roles and responsibilities of all persons involved
 - Tools for identifying and tracking pregnant women

Many excellent training materials on the prevention of PPH are available. Programs should consider adapting existing materials to meet their specific needs rather than expending scarce resources to develop new ones.

KEY COMMITMENTS FROM COUNTRY REPRESENTATIVES

Representatives from each country team presented their action plans for preventing mortality from PPH. **Table 19** summarizes key actions that country team members have committed to champion upon return to their respective countries. ACCESS will follow up with participants to document their progress toward meeting these commitments. Selected detailed country action plans are presented in **Appendix D**.

Table 19. Key Commitments Regarding Prevention of Postpartum Hemorrhage, by Country

Country	Key Commitments
Angola	<ul style="list-style-type: none"> • Advocate with stakeholders for comprehensive and innovative interventions for PPH prevention and treatment. • Conduct needs assessment on availability and quality of AMTSL. • Train health personnel in AMTSL and comprehensive interventions for PPH prevention and treatment. • Include oxytocin and misoprostol in essential drug list as first-line drugs for AMTSL. • Develop tools and strengthen mechanisms for continual monitoring, supervision and evaluation. • Raise awareness in community about PPH and danger signs.
Benin	<ul style="list-style-type: none"> • Disseminate policy document. • Train providers in AMTSL. • Plan supervision and update training of supervisors. • Make emergency kits available in all community maternities. • Provide adequate supply of protective clothing, and encourage providers to use it during deliveries. • Raise awareness of communities of PPH and train CHWs in birth preparedness/ complication readiness (BP/CR).
Burkina Faso	<ul style="list-style-type: none"> • Advocate for including AMTSL in policies, norms and protocols (PNP). • Implement subsidy for births and EmOC. • Strengthen training of providers, including use of uterotonic drugs. • Raise awareness of community about danger signs of PPH and their right to quality services. • Increase the number of CHWs trained in BP/CR.
Cameroon	<ul style="list-style-type: none"> • Advocate for inclusion of AMTSL in national policies and service guidelines. • Advocate to add misoprostol to essential drug list and allow distribution by CHWs. • Train and supervise staff (in-service and pre-service training) in AMTSL, including proper use of uterotonic drugs. • Train CHWs in prevention of PPH. • Educate community about danger signs of PPH and need for blood donation.
Democratic Republic of Congo	<ul style="list-style-type: none"> • Adopt national AMTSL protocol. • Create pilot committee to promote prevention of PPH at community level.
Ethiopia	<ul style="list-style-type: none"> • Train trainers in AMTSL. • Develop AMTSL job aids. • Increase use of AMTSL at institutional births.

Country	Key Commitments
Ghana	<ul style="list-style-type: none"> • Advocate for “skilled attendance at birth for all” to be theme for the next national Safe Motherhood Week celebrations. • Update and disseminate protocol for AMTSL recommending oxytocin as first-line drug. • Advocate for registration of misoprostol, including for treatment of PPH. • Continue advocacy to address all factors that hamper access to skilled attendance at birth.
Guinea-Bissau	<ul style="list-style-type: none"> • Advocate with stakeholders for comprehensive and innovative interventions for PPH prevention and treatment. • Conduct needs assessment on availability and quality of AMTSL. • Train health personnel in AMTSL and comprehensive interventions for PPH prevention and treatment. • Include oxytocin and misoprostol in essential drug list as first-line drugs for AMTSL. • Develop tools and strengthen mechanisms for continual monitoring, supervision and evaluation. • Raise awareness in community about PPH and danger signs.
Kenya	<ul style="list-style-type: none"> • Register misoprostol for prevention and treatment of PPH. • Develop operational standards for PPH and AMTSL. • Conduct clinical skills updates and on-the-job training. • Educate communities about PPH and the need for community transport plans.
Madagascar	<ul style="list-style-type: none"> • Revise PNP to include AMTSL. • Provide oxytocin as an essential drug, and advocate for use of misoprostol. • Working in a pilot zone, train providers in AMTSL and update knowledge of PPH and skills of CHWs. • Use existing health mutual network to finance care of emergencies. • Raise community awareness of PPH and importance of establishing a transport system and plans for emergencies.
Malawi	<ul style="list-style-type: none"> • Make oxytocin first-line drug for AMTSL and introduce misoprostol for treatment of PPH. • Advocate for wider scope of practice for skilled birth attendants in treatment of PPH. • Strengthen logistics management system and pre-service and in-service training for treatment of PPH.
Mali	<ul style="list-style-type: none"> • Train regional providers in use of uterotonic drugs. • Update knowledge of pharmacists and those in charge of management and storage of uterotonic drugs. • Address regulatory problems related to distribution of misoprostol by CHWs. • Increase in two provinces the number of trained CHWs who understand PPH. • Educate communities about danger signs of PPH.
Mauritania	<ul style="list-style-type: none"> • Propose revision of Norms and Procedures to include AMTSL. • Make available birthing kits, cesarean sections and a system for care of the indigent. • Make uterotonic drugs regularly available in sufficient quantity. • Conduct national training of trainers in AMTSL. • Educate communities about danger signs of PPH.

Country	Key Commitments
Mozambique	<ul style="list-style-type: none"> • Advocate with stakeholders for comprehensive and innovative interventions for PPH prevention and treatment. • Conduct needs assessment on availability and quality of AMTSL. • Train health personnel in AMTSL and comprehensive interventions for PPH prevention and treatment. • Include oxytocin and misoprostol in essential drug list as first-line drugs for AMTSL. • Develop tools and strengthen mechanisms for continual monitoring, supervision and evaluation. • Raise awareness in community about PPH and danger signs.
Nigeria	<ul style="list-style-type: none"> • Review policies and guidelines to update information on AMTSL. • Alert National Agency for Food and Drug Administration and Control about fake uterotonic drugs. • Develop guidelines and protocols for AMTSL by midwives and doctors. • Pilot test use of misoprostol for management of PPH in home births in three states.
Rwanda	<ul style="list-style-type: none"> • Advocate to add oxytocin to list of essential drugs. • Advocate for development and dissemination of PPH care and treatment protocols. • Integrate AMTSL into services at two sites, and meet with five private clinics about PPH. • Ensure management at district pharmacies to avoid stock-outs of uterotonic drugs. • Educate communities about PPH.
Senegal	<ul style="list-style-type: none"> • Advocate for adequate equipment and appropriate distribution of essential drugs such as uterotonic drugs. • Create health mutuals. • Advocate for better planning and more funds to protect maternal and child health at local level.
Tanzania	<ul style="list-style-type: none"> • Advocate for including AMTSL using oxytocin in national policies and guidelines. • Revise training curricula and conduct training workshops to increase number of providers trained in AMTSL. • Standardize storage and logistics of uterotonic drugs. • Provide supportive supervision to ensure that AMTSL is practiced correctly.
Uganda	<ul style="list-style-type: none"> • Review and update policies and guidelines with current information on AMTSL. • Conduct situation analysis on the practice of AMTSL, and bridge the gap. • Carry out supportive supervision and modeling of AMTSL, beginning in seven districts.
Zambia	<ul style="list-style-type: none"> • Conduct training in AMTSL and management of PPH. • Register misoprostol and pilot test its use at the community level in one district. • Strengthen emergency preparedness. • Strengthen infection prevention practices, especially use of personal protective equipment during deliveries. • Engage the community in prevention and management of PPH.

HIGHLIGHTS AND SUMMARY OF PROGRAM PRIORITIES

Let's Get It Started: Summary and Call to Action

This conference is the beginning of a journey . . . for us and for her. Are we committed to making her journey safe?

PPH accounts for more maternal deaths in Africa than previously thought—about 34%.

“Spotlighting PPH is appropriate because it is the main cause of maternal mortality, and it’s so preventable.”
—Nahed Matta

Consensus Points

Active Management of Third Stage of Labor

- AMTSL is the right of every woman in childbirth.
- We must facilitate its use wherever there is a skilled provider by ensuring availability of appropriate uterotonics and training.

Prevention and Treatment of PPH

- We cannot afford not to prevent and treat PPH—preventing PPH saves money and lives.
- Preventing maternal mortality from PPH is first and foremost about achieving coverage.
- If we do not achieve near universal coverage, we will not make an impact on mortality.
- We must choose a strategy that is feasible and affordable for achieving coverage.

Translating Research to Practice

- The research done to date must be translated into programs, practice and results.
- There is sufficient evidence to act now!

Use of Misoprostol

- Misoprostol is effective in preventing and treating PPH, and appropriate for use where there are no skilled providers.
- To make this intervention available, countries must develop a strategy based on their needs and lessons learned from pilot studies.
- Safety and other data must be rigorously monitored.

Skilled Attendance at Birth

- We must develop and implement a plan to transition from births assisted by TBAs to universal skilled care at the community level.

Improving Emergency Obstetric Care

- There is a critical need for improving emergency care, especially basic emergency care, while introducing new innovations that make transfer safer—such as hydrostatic tamponade and anti-shock garments.

Call to Action

- Convincing colleagues and stakeholders involves science, art, cajoling and diplomacy. We must be prepared for rejection, but persist and be champions! We must think big, start small, be creative and, most important, ACT NOW!

APPENDIX A CONFERENCE AGENDA

PREVENTING MORTALITY FROM POSTPARTUM HEMORRHAGE IN AFRICA: MOVING FROM RESEARCH TO PRACTICE 4–7 April 2006, Entebbe, Uganda

TUESDAY, 4 APRIL 2006

- 1:00–5:00 **Registration**
- 2:00–4:00 **Meeting of speakers, facilitators, chairpersons, moderators, country team leaders and rapporteurs**
- Session 1 **Opening Session**
- 5:30–6:20 **Welcome**
Harshad Sanghvi (JHPIEGO, USA)
Joel Okullo (RCQHC, Uganda)
Ominde Achola (ECSA, Tanzania)
Koki Agarwal (ACCESS Program, USA)
Deborah Armbruster (POPPHI, USA)
Nahed Matta (USAID/Washington)
Margaret Ellis (USAID/Uganda)
Anthony Mbonye (Department of Community Health, Uganda)
Guest of Honor: Alex Kyamugisha, Minister of State for Health, Uganda, representing Professor Gilbert Bukenya, Vice President of Uganda
- 6:20–6:50 **Keynote address**
Overcoming resistance to change: Creating champions for change
Japheth Mati (Institute for Reproductive Health Training and Research, Kenya)
- 6:50–7:00 **Vote of thanks**
- 7:00 **Dinner**

WEDNESDAY, 5 APRIL 2006

- 8:00–8:30 **Introduction, objectives of conference, agenda and expected products**
Harshad Sanghvi (JHPIEGO, USA)
- Session 2 **Preventing Postpartum Hemorrhage Where There Are Skilled Providers**
Chairperson: *Henrietta Odoi-Agyarko (Ghana Health Services)*
Rapporteur: *Sarla Chand (ACCESS Program, USA)*
- 8:30–8:50 **Epidemiology of Postpartum Hemorrhage**
Matthews Mathai (WHO/Geneva)

- 8:50–9:10** **Active management of third stage of labor (AMTSL)**
Blami Dao (Souro Sanou Hospital, Burkina Faso)
- 9:10–9:30** **Overview of uterotonic drugs**
Emmanuel Otolorin (JHPIEGO/Nigeria)
- 9:30–10:00** **Discussion**
- 10:00–10:30** **Tea/coffee break**
- Session 3** **Preventing Postpartum Hemorrhage Where There Are Skilled Providers**
- Rapporteur:** *Martha Appiagyei (JHPIEGO/Ghana)*
- 10:30–11:10** **Status of PPH prevention in Africa: Results of a survey in two countries**
Alice Mutungi (RCQHC, Uganda)
Ominde Achola (ECSA, Tanzania)
Sayoki Mfinanga (National Institute for Medical Research, Tanzania)
Ashebir Getachew Tekle-Michael (Ethiopian Society of Obstetricians and Gynecologists)
- 11:10–11:30** **Introducing active management of third stage of labor into peripheral hospitals in Zambia**
Velepi Mtonga (MOH, Zambia)
Christine Kaseba-Sata (University Teaching Hospital, Zambia)
Richard Hughes (JHPIEGO/Zambia)
- 11:30–11:50** **Training in active management of third stage of labor**
Aoua Zerbo (Direction de la santé de la famille, Burkina Faso)
- 11:50–12:10** **Policy, program and products: Implications for preventing postpartum hemorrhage in Africa**
Koki Agarwal (ACCESS Program, USA)
- 12:10–12:30** **ICM/FIGO joint statement on postpartum hemorrhage**
André Lalonde (FIGO, Canada)
Lennie Kammendo (Association of Malawian Midwives)
- 12:30–1:00** **Discussion**
- 1:00–2:00** **Lunch**
- Session 4** **PPH Market Place**
- 2:00–5:00** **Concurrent demonstrations and discussions**
- Skills Lab #1: AMTSL**
Patricia Gomez (ACCESS Program, USA) and Aoua Zerbo (Direction de la santé de la famille, Burkina Faso)

Skills Lab #2: Basic procedures for treatment of PPH

Zahida Qureshi (University of Nairobi, Kenya) and Blami Dao (Souro Sanou Hospital, Burkina Faso)

Skills Lab #3: Innovations in treatment of PPH

Sylvia Deganus (Ghana Health Services) and Ashlesha Patel (Cook County Hospital, USA)

Skills Lab #4: Infection prevention and safe injections

Lunab Ncube (JHPIEGO/South Africa), Dorothy Andere (JHPIEGO/Kenya) and Martha Ndblovu (JHPIEGO/Zambia)

Skills Lab #5: Ensuring efficient supply and storage of uterotonics:

Pharmaceutical management issues in prevention of PPH

Bannet Ndyanabangi (MSH-RPM Plus, USA) and Emmanuel Nfor (MSH-RPM Plus, USA)

Skills Lab #6: Obtaining registration of misoprostol for use in prevention and treatment of PPH

Jotham Musinguzi (Ministry of Finance and Economic Planning, Uganda) and Melodie Holden (Venture Strategies for Health and Development, USA)

Skills Lab #7: Social mobilization

Nancy Russell (Constella Futures, ACCESS Program, Tanzania) and Joseph de Graft-Johnson (ACCESS Program, USA)

5:00–6:00 **First country team meeting**

6:30–8:00 **Reception among displays and posters: Country efforts at preventing PPH**

THURSDAY, 6 APRIL 2006

8:15–8:30 **Review of prior day**
Harshad Sanghvi (JHPIEGO, USA)

Session 5 **Preventing and Treating Postpartum Hemorrhage at Home Birth (Where There Are No Skilled Providers)**

Chairperson: *Mojisola Odeku (MOH, Nigeria)*

Rapporteur: *Melodie Holden (Venture Strategies for Health and Development, USA)*

8:30–9:00 **Effectiveness of misoprostol for prevention of postpartum hemorrhage: A review of the global experience**
Justus Hofmeyr (Eastern Cape Dept. of Health, University of Witwatersrand, South Africa)

9:00–9:30 **Preventing postpartum hemorrhage at primary health centers: Guinea-Bissau**
Lars Høj (Aarhus University Hospital, Danish Society of Obstetrics and Gynecology, Denmark)

9:30–10:00 **Preventing postpartum hemorrhage at home birth: Community-based approaches**
Harshad Sanghvi (JHPIEGO, USA)

10:00–10:30 **Discussion**

- 10:30–11:00** **Tea/coffee break**
- Session 6** **Preventing and Treating Postpartum Hemorrhage at Home Birth (Where There Are No Skilled Providers)**
- Chairperson:** *Christine Kaseba-Sata (University Teaching Hospital, Zambia)*
Rapporteur: *Emmanuel Rwamushajja (JHPIEGO/Tanzania)*
- 11:00–11:30** **Innovative treatment approaches: Options at home birth**
Ndola Prata (University of California at Berkeley, USA)
- 11:30–12:00** **Cost-effectiveness of misoprostol to control postpartum hemorrhage**
Sarah Bradley (Johns Hopkins University, USA)
- 12:00–12:30** **Home-based life saving skills: Preventing and managing postpartum hemorrhage at the home and community level**
Diana Beck (ACCESS Program, USA)
- 12:30–1:00** **Discussion**
- 1:00–2:00** **Lunch**
- Session 7** **Small Group Discussions**
- 2:00–3:30** **Concurrent small group discussions**
- Promoting and scaling up AMTSL**
Addressing policy, ensuring availability of uterotonics and monitoring progress
(Deborah Armbruster, POPPHI, USA)
Ensuring AMTSL for all: Delivering the service *(Pius Okong, St. Francis Hospital, Uganda)*
Training and supportive supervision for AMTSL *(Patricia Gomez, ACCESS Program, USA)*
- Promoting community interventions to prevent PPH**
Addressing policy, ensuring availability of misoprostol and monitoring progress
(Ndola Prata, University of California at Berkeley, USA)
Community education and distribution of misoprostol *(Ashlesha Patel, Cook County Hospital, USA)*
Training and supportive supervision for community interventions *(Joseph de Graft-Johnson, ACCESS Program, USA)*
- 3:30–4:00** **Tea/coffee break**
- 4:00–5:30** **Second meeting of country teams**

FRIDAY, 7 APRIL 2006

- 8:15–8:30** **Review of prior day**
Harshad Sanghvi (JHPIEGO, USA)

- Session 8 Treatment of Postpartum Hemorrhage**
- Chairperson:** *Veronica Reis (JHPIEGO/Mozambique)*
Rapporteur: *Mariama Barry (JHPIEGO/Madagascar)*
- 8:30–8:50 Addressing the challenges of treating postpartum hemorrhage: First interventions**
André Lalonde (FIGO, Canada)
- 8:50–9:10 Addressing the challenges of treating PPH: Expanding emergency obstetric care**
Harshad Sanghvi (JHPIEGO, USA)
- 9:10–9:30 Postpartum contraception options, including options for women with life-threatening complications**
Catharine McKaig (ACCESS-FP Program, USA)
- 9:30–10:00 Discussion**
- 10:00–10:30 Tea/coffee break**
- Session 9 Supporting Programs to Prevent Mortality from Postpartum Hemorrhage**
- Chairperson:** *Pamela Lynam (JHPIEGO/Kenya)*
Rapporteur: *Tsigné Pleah (JHPIEGO, USA)*
- 10:30–12:00 Panel of donors and technical assistance agencies**
- 12:00–1:00 Development of action items and third meeting of country teams**
- 1:00–2:00 Lunch**
- Session 10 Country Actions**
- Chairperson:** *Alice Mutungi (RCQHC, Uganda)*
Rapporteur: *Rebecca Chase (JHPIEGO, USA)*
- 2:30–4:00 Presentation of country actions**
- Session 11 Closing**
- 4:00–4:15 Summary and call to action**
Patricia Gomez (ACCESS Program, USA)
- 4:15–4:30 Closing remarks**
Subhi Mebdi (USAID/Washington)
Harshad Sanghvi (JHPIEGO, USA)
- 4:30 High tea and farewell**

APPENDIX B

CONFERENCE PARTICIPANTS

ANGOLA

Ernesto Afonso, Angolan Council of Christian Churches/Christian Medical Commission
Isabel Lemos Gomes, MOH
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BENIN

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CAMEROON

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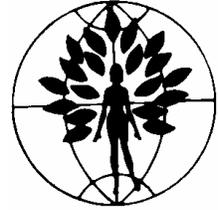
USA *(continued)*

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APPENDIX C



Joint Statement Management of the Third Stage of Labour to Prevent Post-partum Haemorrhage

International Confederation of Midwives (ICM)
International Federation of Gynaecologists and Obstetricians (FIGO)

ICM and FIGO are key partners in global Safe Motherhood efforts to reduce maternal death and disability in the world. Their mission statements share a common commitment in promoting the health, human rights and well-being of all women, most especially those at greatest risk for death and disability associated with childbearing. FIGO and ICM promote evidence-based, effective interventions that, when used properly with informed consent, can reduce the incidence of maternal mortality and morbidity in the world.

Severe bleeding is the single most important cause of maternal death worldwide. More than half of all maternal deaths occur within 24 hours of delivery, mostly from excessive bleeding. Every pregnant woman may face life-threatening blood loss at the time of delivery; women with anaemia are particularly vulnerable since they may not tolerate even moderate amounts of blood loss. Every woman needs to be closely observed and, if needed, stabilized during the immediate post-partum period.

Upon review of the available evidence, FIGO and ICM agree that active management of the third stage of labour is proven to reduce the incidence of post-partum haemorrhage, the quantity of blood loss, and the use of blood transfusion.

Active management of the third stage of labour should be offered to women since it reduces the incidence of post-partum haemorrhage due to uterine atony.

Active management of the third stage of labour consists of interventions designed to facilitate the delivery of the placenta by increasing uterine contractions and to prevent PPH by averting uterine atony. The usual components include:

- Administration of uterotonic agents
- Controlled cord traction
- Uterine massage after delivery of the placenta, as appropriate.

Every attendant at birth needs to have the knowledge, skills and critical judgment needed to carry out active management of the third stage of labour and access to needed supplies and equipment.

In this regard, national professional associations have an important and collaborative role to play in:

- Advocacy for skilled care at birth;
- Dissemination of this statement to all members of the organisation and facilitation of its implementation;
- Public education about the need for adequate prevention and treatment of post-partum haemorrhage;
- Publication of the statement in national midwifery, obstetric and medical journals, newsletters and websites;
- Address legislative and other barriers that impede the prevention and treatment of post-partum haemorrhage;
- Incorporation of active management of the third stage of labour in national standards and clinical guidelines, as appropriate;
- Incorporation of active management of the third stage into pre-service and in-service curricula for all skilled birth attendants;
- Working with national pharmaceutical regulatory agencies, policymakers and donors to assure that adequate supplies of uterotonics and injection equipment are available.

MANAGEMENT OF THE THIRD STAGE OF LABOUR TO PREVENT POST-PARTUM HAEMORRHAGE

HOW TO USE UTEROTONIC AGENTS

- Within one minute of the delivery of the baby, palpate the abdomen to rule out the presence of an additional baby(s) and give oxytocin 10 units IM. Oxytocin is preferred over other uterotonic drugs because it is effective 2–3 minutes after injection, has minimal side effects and can be used in all women.
- If oxytocin is not available, other uterotonics can be used such as: ergometrine 0.2 mg IM, syntometrine (1 ampoule) IM or misoprostol 400–600 mcg orally. Oral administration of misoprostol should be reserved for situations when safe administration and/or appropriate storage conditions for injectable oxytocin and ergot alkaloids are not possible.
- Uterotonics require proper storage:
 - Ergometrine: 2–8°C and protect from light and from freezing.
 - Misoprostol: room temperature, in a closed container.
 - Oxytocin: 15–30°C, protect from freezing.
- Counselling on the side effects of these drugs should be given.

Warning! Do not give ergometrine or syntometrine (because it contains ergometrine) to women with pre-eclampsia, eclampsia or high blood pressure.

HOW TO DO CONTROLLED CORD TRACTION

- Clamp the cord close to the perineum (once pulsation stops in a healthy newborn) and hold in one hand.
- Place the other hand just above the woman's pubic bone and stabilize the uterus by applying counter-pressure during controlled cord traction.
- Keep slight tension on the cord and await a strong uterine contraction (2–3 minutes).
- With the strong uterine contraction, encourage the mother to push and very gently pull downward on the cord to deliver the placenta. Continue to apply counter-pressure to the uterus.
- If the placenta does not descend during 30–40 seconds of controlled cord traction do not continue to pull on the cord:
 - Gently hold the cord and wait until the uterus is well contracted again;
 - With the next contraction, repeat controlled cord traction with counter-pressure.

Never apply cord traction (pull) without applying counter traction (push) above the pubic bone on a well-contracted uterus.

- As the placenta delivers, hold the placenta in two hands and gently turn it until the membranes are twisted. Slowly pull to complete the delivery.
- If the membranes tear, gently examine the upper vagina and cervix wearing sterile/disinfected gloves and use a sponge forceps to remove any pieces of membrane that are present.
- Look carefully at the placenta to be sure none of it is missing. If a portion of the maternal surface is missing or there are torn membranes with vessels, suspect retained placenta fragments and take appropriate action (ref Managing Complications in Pregnancy and Childbirth).

HOW TO DO UTERINE MASSAGE

- Immediately massage the fundus of the uterus until the uterus is contracted.
- Palpate for a contracted uterus every 15 minutes and repeat uterine massage as needed during the first 2 hours.
- Ensure that the uterus does not become relaxed (soft) after you stop uterine massage.

**In all of the above actions, explain the procedures and actions to the woman and her family.
Continue to provide support and reassurance throughout.**

References:

WHO, UNFPA, UNICEF, World Bank. Managing Complications in Pregnancy and Childbirth. WHO/RHR/00.7, 2000.

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Prendiville WJ, Elbourne D, McDonald S. Active vs. expectant management in the third stage of labour. In: The Cochrane Library, Issue 3, 2003. Oxford: Update Software.

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APPENDIX D SELECTED COUNTRY ACTION PLANS

Action Plan: BENIN

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
I. Policy and Advocacy				
<ul style="list-style-type: none"> Standards for AMTSL are included in policies and national service directives 	<ul style="list-style-type: none"> AMTSL is part of policies and national service directives 	<ul style="list-style-type: none"> Produce and disseminate policy document 	<ul style="list-style-type: none"> Disseminate policy document in two states 	<ul style="list-style-type: none"> Continue dissemination to other states
II. Service Delivery				
<ul style="list-style-type: none"> Skilled providers attend births 	<ul style="list-style-type: none"> 65% of births are attended by a skilled provider 	<ul style="list-style-type: none"> Trained and competent staff 	<ul style="list-style-type: none"> Advocate for recruitment of competent staff 	<ul style="list-style-type: none"> Provide maternities with competent staff
III. Training/Supervision/Logistics				
<ul style="list-style-type: none"> Providers are trained in AMTSL (update training) 	<ul style="list-style-type: none"> 37% of providers are trained in and conducting AMTSL 	<ul style="list-style-type: none"> Financing for expansion of AMTSL and training materials 	<ul style="list-style-type: none"> Train 15% of providers in AMTSL Advocate for training materials 	<ul style="list-style-type: none"> Continue expansion of AMTSL
<ul style="list-style-type: none"> Supervision tools and directives contain AMTSL 	<ul style="list-style-type: none"> Supervision tools and posters are developed 	<ul style="list-style-type: none"> Delay in supervision 	<ul style="list-style-type: none"> Ensure supervision of sites that have not yet been supervised 	<ul style="list-style-type: none"> Plan supervision and update training of supervisors
IV. Community Education and Social Mobilization				
<ul style="list-style-type: none"> Community is involved in management of facilities (hospital and community management committees) 	<ul style="list-style-type: none"> Community representatives are involved in management of health centers 	<ul style="list-style-type: none"> Alert community representatives to need for birth plan and awareness of danger signs 	<ul style="list-style-type: none"> The EEZ heighten awareness of their community representatives 	<ul style="list-style-type: none"> Continue to heighten awareness with expansion of AMTSL
<ul style="list-style-type: none"> Emergencies are treated before patients/families pay for drugs/equipment 	<ul style="list-style-type: none"> Kits are available in hospitals for emergencies 	<ul style="list-style-type: none"> Inadequate number of emergency kits in health centers 	<ul style="list-style-type: none"> Make emergency kits available in all community maternities 	<ul style="list-style-type: none"> Expand the experiment of health mutuals currently in progress
<ul style="list-style-type: none"> High expectation of quality in community 	<ul style="list-style-type: none"> Not all of the maternities have qualified staff 	<ul style="list-style-type: none"> Community wants free maternity care 	<ul style="list-style-type: none"> Advocate for free cesarean sections 	

NOTE: Key action plans for all countries that participated in the conference are summarized in Table 19 on pages 66–68.

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH Without a Competent Health Care Provider: Misoprostol				
I. Policy and Advocacy				
• Offer AMTSL at all births in maternities	• AMTSL offered by trained providers in maternities	• Not all providers trained in AMTSL	• Train 15% of providers in AMTSL	• Train all providers in maternities
II. Service Delivery				
• An effective referral system is in place in case of complication	• Referral system is in place and EmOC is free	• Communication is difficult	• Provide all maternities with mobile phone connected to referral hospital	• Install a fixed telephone • Advocate for aerial communication network
III. Training/Supervision/Logistics				
• CHWs trained and supervised in BP/CR	• In progress	• Train CHWs in birth preparedness	• Train 150 CHWs	• Continue training of CHWs
IV. Community Education and Social Mobilization				
• Community is aware of PPH and can recognize danger signs	• Communities are being educated about PPH and danger signs	• Appropriate training aids (e.g., cassettes, posters, counseling booklets)	• Advocate for development of training aids	• Develop training aids • Continue to raise community awareness
• Villages have savings plans for emergencies	• Health mutuals exist in some health areas	• Consider pilot test to develop savings plans	• Implement pilot test	• Disseminate and expand emergency savings plans
Treatment of PPH				
II. Service Delivery				
• Providers wear protective clothing during births, particularly with PPH clients	• Protective clothing available in some maternities	• Inadequate supply of protective clothing in maternities	• Provide adequate supply of protective clothing, and encourage providers to use it	• All providers in maternities have protective clothing and use it during deliveries

Action Plan: BURKINA FASO

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
I. Policy and Advocacy				
<ul style="list-style-type: none"> Maternal health is a high priority 	<ul style="list-style-type: none"> Maternal health is a high priority 	<ul style="list-style-type: none"> Inadequate number of trained and competent providers 	<ul style="list-style-type: none"> Advocate for increased recruitment and training of competent providers 	<ul style="list-style-type: none"> Implement a plan to accelerate reduction of maternal and neonatal mortality
<ul style="list-style-type: none"> Standards for AMTSL are included in national service policies 	<ul style="list-style-type: none"> Standards for AMTSL are not included in national service policies 	<ul style="list-style-type: none"> PNP not revised 	<ul style="list-style-type: none"> Advocate for including AMTSL in PNP 	<ul style="list-style-type: none"> Revise PNP by including AMTSL
II. Service Delivery				
<ul style="list-style-type: none"> Births are attended by a competent provider 	<ul style="list-style-type: none"> 40% of births are attended by a competent provider 	<ul style="list-style-type: none"> Weak use of health services 	<ul style="list-style-type: none"> Implement subsidy for births and EmOC Begin social mobilization activities 	<ul style="list-style-type: none"> Reorient the role of village birth attendants Strengthen training of qualified providers
<ul style="list-style-type: none"> Uterotonic drugs are used at all births 	<ul style="list-style-type: none"> Uterotonic drugs are used at 5% of all births 	<ul style="list-style-type: none"> Providers not trained in use of uterotonic drugs Large number of home births 	<ul style="list-style-type: none"> Continue update training in health districts 	<ul style="list-style-type: none"> Include use of uterotonic drugs in pre-service training Continue update training
III. Training/Supervision/Logistics				
<ul style="list-style-type: none"> Providers are trained in and practicing AMTSL 	<ul style="list-style-type: none"> 5% of providers are trained in AMTSL 	<ul style="list-style-type: none"> All providers need to be trained in AMTSL 	<ul style="list-style-type: none"> Conduct training courses specified in the health action plans 	<ul style="list-style-type: none"> Conduct training courses scheduled in the health action plans
<ul style="list-style-type: none"> Tools and supervision directives include AMTSL 	<ul style="list-style-type: none"> Tools and supervision directives do not include AMTSL 	<ul style="list-style-type: none"> PNP does not include AMTSL 	<ul style="list-style-type: none"> Advocate for including AMTSL in PNP 	<ul style="list-style-type: none"> Revise tools and supervision directives to include AMTSL
<ul style="list-style-type: none"> Facilities have protocols and adequate supply of uterotonic drugs and equipment 	<ul style="list-style-type: none"> 10% of facilities have protocols and adequate supply of uterotonic drugs and equipment 	<ul style="list-style-type: none"> Uterotonic drugs not provided in first-level health facilities 	<ul style="list-style-type: none"> Advocate for revision of PNP Hold national meeting for consensus 	<ul style="list-style-type: none"> Scale up introduction of uterotonic drugs in health care facilities

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
IV. Community Education and Social Mobilization				
<ul style="list-style-type: none"> The community is involved in management of health facilities (management committees) 	<ul style="list-style-type: none"> 40% of health facilities have a management committee that is actually involved 	<ul style="list-style-type: none"> Inadequate application of provisions of Bamako Initiative, which recommends involvement of communities in management of health care facilities 	<ul style="list-style-type: none"> Develop a communication plan 	<ul style="list-style-type: none"> Strengthen capacity of communities to become involved in management of health care facilities
<ul style="list-style-type: none"> Emergency cases are treated before requiring patients and families to pay for drugs or equipment 	<ul style="list-style-type: none"> Emergency cases are not treated without prepayment 	<ul style="list-style-type: none"> Inadequate application of decision to provide care without prepayment 	<ul style="list-style-type: none"> Advocate for support for births and EmOC 	<ul style="list-style-type: none"> Continue support for births and EmOC
<ul style="list-style-type: none"> Communities can expect high-quality services 	<ul style="list-style-type: none"> Communities do not currently expect high-quality services 	<ul style="list-style-type: none"> Community not oriented toward idea of quality services 	<ul style="list-style-type: none"> Raise awareness within communities 	<ul style="list-style-type: none"> Orient communities to idea of quality service Raise awareness of community about their right to quality service
<ul style="list-style-type: none"> CHWs are trained and supervised to counsel on BP/CR 	<ul style="list-style-type: none"> Very few CHWs are currently trained 	<ul style="list-style-type: none"> Supplementary training and follow-up 	<ul style="list-style-type: none"> Increase the number of trained CHWs in at least two districts 	<ul style="list-style-type: none"> Train all CHWs in at least 50% of districts
<ul style="list-style-type: none"> Communities recognize the danger of PPH 	<ul style="list-style-type: none"> A very small proportion of population is aware of dangers of PPH 	<ul style="list-style-type: none"> Inadequate training and awareness of community members 	<ul style="list-style-type: none"> Produce at least 10,000 posters showing danger signs of PPH 	<ul style="list-style-type: none"> Continue awareness campaigns through various channels (e.g., media)

Action Plan: CAMEROON

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
I. Policy and Advocacy				
<ul style="list-style-type: none"> Maternal health is a high national priority 	<ul style="list-style-type: none"> Maternal health, although a high priority, lacks financing and visibility 	<ul style="list-style-type: none"> Funding and increased visibility for maternal health 	<ul style="list-style-type: none"> Implement national day to combat maternal mortality 	<ul style="list-style-type: none"> Implement national day to combat maternal mortality Create an institutional day
<ul style="list-style-type: none"> Standards for AMTSL are included in national policies and service guidelines 	<ul style="list-style-type: none"> Standards for AMTSL not included in national policy document, but are included in latest teaching module for EmOC 	<ul style="list-style-type: none"> Update national policy document 	<ul style="list-style-type: none"> Advocate with Department of Family Health 	<ul style="list-style-type: none"> Advocate with Department of Family Health
II. Service Delivery				
<ul style="list-style-type: none"> Births are attended by a skilled provider 	<ul style="list-style-type: none"> 61% of births are attended by a skilled provider, but there are disparities between regions 	<ul style="list-style-type: none"> Persuade more women to use services 	<ul style="list-style-type: none"> Create community awareness to promote use of services 	<ul style="list-style-type: none"> Increase community awareness to promote use of services
<ul style="list-style-type: none"> Uterotonic drugs are used at all births 	<ul style="list-style-type: none"> All births take place in a health care facility 	<ul style="list-style-type: none"> AMTSL not systematically used 	<ul style="list-style-type: none"> Take advantage of upcoming forums to make health care workers aware of proper use of uterotonic drugs 	<ul style="list-style-type: none"> Take advantage of upcoming forums to make health care workers aware of proper use of uterotonic drugs
III. Training/Supervision/Logistics				
<ul style="list-style-type: none"> Trained providers practice AMTSL 	<ul style="list-style-type: none"> Percentage of trained providers practicing AMTSL is not known 	<ul style="list-style-type: none"> Supervise providers trained in AMTSL 	<ul style="list-style-type: none"> Train and supervise staff (in-service and pre-service training) 	<ul style="list-style-type: none"> Continue supervision
<ul style="list-style-type: none"> Facilities have protocols and an adequate supply of uterotonic drugs and equipment 	<ul style="list-style-type: none"> Percentage of facilities with protocols and supply of uterotonic drugs and equipment is not known Oxytocin sometimes unavailable 	<ul style="list-style-type: none"> Gather information about situation in facilities 	<ul style="list-style-type: none"> Initiate a letter to the Public Health Officer 	<ul style="list-style-type: none"> Determine situation in facilities

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
IV. Community Education and Social Mobilization				
<ul style="list-style-type: none"> Community has high expectations for quality 	<ul style="list-style-type: none"> Communities expect high-quality services 	<ul style="list-style-type: none"> Improve quality of services 	<ul style="list-style-type: none"> Supervise providers in facilities where team members practice 	<ul style="list-style-type: none"> Supervise providers in facilities where team members practice
Prevention of PPH Without a Competent Health Care Provider: Misoprostol				
I. Policy and Advocacy				
<ul style="list-style-type: none"> Offer AMTSL to all women, regardless of where they give birth 	<ul style="list-style-type: none"> Policy does not plan for AMTSL 	<ul style="list-style-type: none"> Update PNP 	<ul style="list-style-type: none"> Raise awareness in Department of Family Health of need to update PNP (Child Survival and Safe Motherhood [CSSM]) 	<ul style="list-style-type: none"> Conduct a workshop to update PNP
<ul style="list-style-type: none"> Misoprostol is added to list of essential drugs for prevention of PPH 	<ul style="list-style-type: none"> Misoprostol is not on list of essential drugs Misoprostol currently used for maturation of cervix 	<ul style="list-style-type: none"> Add misoprostol to list of essential drugs 	<ul style="list-style-type: none"> Raise awareness of Department of Family Health of need to update PNP (CSSM) 	<ul style="list-style-type: none"> Add misoprostol to list of essential drugs
III. Training/Supervision/Logistics				
<ul style="list-style-type: none"> CHWs are included in prevention of PPH 	<ul style="list-style-type: none"> CHWs are not trained in prevention of PPH 	<ul style="list-style-type: none"> Train CHWs in PPH 	<ul style="list-style-type: none"> Include prevention of PPH in guide for local communicators and provincial rural centers in Adamaoua province as a pilot test 	<ul style="list-style-type: none"> Expand training of CHWs to three other provinces
<ul style="list-style-type: none"> Misoprostol is available in clearly marked packets ready for use by CHWs 	<ul style="list-style-type: none"> Packaging of misoprostol is not provided for by national policy 	<ul style="list-style-type: none"> Add misoprostol to list of essential drugs 	<ul style="list-style-type: none"> Raise awareness of Department of Family Health of need to update PNP (CSSM) 	<ul style="list-style-type: none"> Add misoprostol to list of essential drugs

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH Without a Competent Health Care Provider: Misoprostol				
IV. Community Education and Social Mobilization				
<ul style="list-style-type: none"> Community is aware of how to recognize danger signs of PPH 	<ul style="list-style-type: none"> Community awareness activities are being conducted in some provinces 	<ul style="list-style-type: none"> Inadequate financial support 	<ul style="list-style-type: none"> Hold educational discussions in communities 	<ul style="list-style-type: none"> Expand efforts to raise awareness to three other provinces
<ul style="list-style-type: none"> Villages have a plan and method of savings for emergencies 	<ul style="list-style-type: none"> Percentage of villages with method of savings and plans for emergencies is unknown 	<ul style="list-style-type: none"> Assess percentage of villages with savings plans for emergencies 	<ul style="list-style-type: none"> Conduct a mailing in name of Department of Family Health or DPSP (CSSM) 	<ul style="list-style-type: none"> Develop a list of villages with established savings plans for emergencies
Treatment of PPH				
I. Policy and Advocacy				
<ul style="list-style-type: none"> Support for decentralization of treatment of PPH exists down to lowest level 	<ul style="list-style-type: none"> No support for decentralization of treatment of PPH 	<ul style="list-style-type: none"> Update PNP 	<ul style="list-style-type: none"> Raise awareness in Department of Family Health of need to update PNP (CSSM) 	<ul style="list-style-type: none"> Conduct a workshop to update PNP
II. Service Delivery				
<ul style="list-style-type: none"> Facilities provide complete care and have capacity for blood transfusion 	<ul style="list-style-type: none"> All central, provincial and district hospitals provide complete care and have facilities for blood transfusion 	<ul style="list-style-type: none"> Recruit voluntary blood donors 	<ul style="list-style-type: none"> Raise community awareness during educational discussions 	
<ul style="list-style-type: none"> Service providers wear protective clothing during births, particularly for PPH cases 	<ul style="list-style-type: none"> IP precaution is not systematic in all health care facilities 	<ul style="list-style-type: none"> Staff unaware of need for protective clothing Necessary protective equipment sometimes unavailable 	<ul style="list-style-type: none"> Raise awareness of health care staff in facilities of members of the delegation 	<ul style="list-style-type: none"> Advocate with Directorate of Organization of Healthcare and Technology (CSSM, Department of Family Health)

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Treatment of PPH				
III. Training/Supervision/Logistics				
<ul style="list-style-type: none"> Providers have knowledge and skills to treat PPH 	<ul style="list-style-type: none"> Percentage of providers who have knowledge and skills to treat PPH is not known; a survey is currently in progress 	<ul style="list-style-type: none"> Complete survey and analyze results 	<ul style="list-style-type: none"> Train health care personnel in facilities of members of the delegation 	
<ul style="list-style-type: none"> Adequate blood is provided by blood banks 	<ul style="list-style-type: none"> Blood banks are frequently out of blood 	<ul style="list-style-type: none"> Recruit voluntary blood donors 	<ul style="list-style-type: none"> Raise community awareness during educational discussions 	<ul style="list-style-type: none"> Raise community awareness during educational discussions
IV. Community Education and Social Mobilization				
<ul style="list-style-type: none"> Social services exist for the indigent to cover cost of treating PPH 	<ul style="list-style-type: none"> Social security does not exist; welfare funds make it possible to care for obstetric complications in some communities 	<ul style="list-style-type: none"> Establish a social security system 		<ul style="list-style-type: none"> Encourage women to create welfare funds to take care of PPH cases (ABOS)
<ul style="list-style-type: none"> All communities conduct campaigns to collect blood 	<ul style="list-style-type: none"> Some communities conduct campaigns to collect blood 	<ul style="list-style-type: none"> Encourage other communities to conduct campaigns to collect blood 	<ul style="list-style-type: none"> Raise awareness of community members 	<ul style="list-style-type: none"> Raise awareness of community members
<ul style="list-style-type: none"> Transport for emergency cases is available and accessible 	<ul style="list-style-type: none"> There are regions that are cut off and inaccessible at certain times of the year 	<ul style="list-style-type: none"> Organize transportation for emergency cases or create "waiting houses" for women from remote areas 	<ul style="list-style-type: none"> Train staff and communities in preparing birth plans in pilot zones (Adamaoua) 	<ul style="list-style-type: none"> Train staff and communities in preparing birth plans in pilot zones

Action Plan: DEMOCRATIC REPUBLIC OF CONGO

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
I. Policy and Advocacy				
<ul style="list-style-type: none"> • Norms and protocols are revised and include AMTSL 	<ul style="list-style-type: none"> • AMTSL is not integrated within national norms and protocols 	<ul style="list-style-type: none"> • Integrate AMTSL in all health care facilities 	<ul style="list-style-type: none"> • Report on conference to MOH Secretary General • Adapt protocols for AMTSL • Adopt national AMTSL protocol 	<ul style="list-style-type: none"> • Encourage advocacy by MOH with partners for promotion of PPH prevention
II. Service Delivery				
<ul style="list-style-type: none"> • All providers in target zones are trained in AMTSL 	<ul style="list-style-type: none"> • Knowledge of AMTSL is weak 	<ul style="list-style-type: none"> • Reinforce skills of providers 	<ul style="list-style-type: none"> • Report on conference to MOH Secretary General • Identify pilot zones and trainers to be trained 	<ul style="list-style-type: none"> • Encourage advocacy by MOH with partners for promotion of PPH prevention
<ul style="list-style-type: none"> • Uterotonic drugs are available in health care facilities 	<ul style="list-style-type: none"> • Uterotonic drugs reserved for referral facilities • Frequent stock outs of uterotonic drugs 	<ul style="list-style-type: none"> • Regular supply of uterotonic drugs in facilities, according to new norms 	<ul style="list-style-type: none"> • Update needs assessment 	<ul style="list-style-type: none"> • Advocate with MOH, Government and partners to mobilize resources and reduce costs
III. Training/Supervision/Logistics				
<ul style="list-style-type: none"> • Misoprostol is available in community for prevention of PPH 	<ul style="list-style-type: none"> • Misoprostol is not used as a uterotonic drug 	<ul style="list-style-type: none"> • Acceptance of use of misoprostol for AMTSL in community 	<ul style="list-style-type: none"> • Create pilot committee to promote prevention of PPH at community level • Hold preparatory meetings for advocacy activities 	<ul style="list-style-type: none"> • Encourage advocacy by MOH with partners for use of misoprostol for AMTSL in community • Conduct pilot studies
Treatment of PPH				
I. Community Education and Social Mobilization				
<ul style="list-style-type: none"> • Community organizations involved in prompt referral of obstetric emergencies in all target zones 	<ul style="list-style-type: none"> • Lack of knowledge of danger signs • Referral of obstetric emergencies often delayed 	<ul style="list-style-type: none"> • Strengthen skills and capacities • Organize for prompt transfer of emergencies 	<ul style="list-style-type: none"> • Discuss strategies for community participation in promoting key practices for referral of emergencies 	<ul style="list-style-type: none"> • Conduct training

Action Plan: ETHIOPIA

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
I. Policy and Advocacy				
<ul style="list-style-type: none"> National Standard Treatment Guidelines (STG) available in all public health institutions 	<ul style="list-style-type: none"> STG is available but not disseminated 	<ul style="list-style-type: none"> Disseminate and implement STG 	<ul style="list-style-type: none"> Distribute STG to all health and training institutions Distribute individual copies to 25% of midwives 	<ul style="list-style-type: none"> Distribute individual copies to all midwives and nurses
<ul style="list-style-type: none"> AMTSL is included in all national pre-service and in-service training curricula 	<ul style="list-style-type: none"> AMTSL is not included in national curricula 	<ul style="list-style-type: none"> Include AMTSL in all national pre-service and in-service training curricula 	<ul style="list-style-type: none"> Train trainers from three midwifery, four nursing and three medical schools 	<ul style="list-style-type: none"> Train trainers from all midwifery, nursing and medical schools
II. Service Delivery				
<ul style="list-style-type: none"> All births in facilities receive AMTSL 	<ul style="list-style-type: none"> AMTSL is practiced in 29% of institutional births 	<ul style="list-style-type: none"> AMTSL not used in 71% of institutional births 	<ul style="list-style-type: none"> Increase use of AMTSL to 35% of institutional births 	<ul style="list-style-type: none"> Increase use of AMTSL to 60% of institutional births
<ul style="list-style-type: none"> All service delivery sites have AMTSL job aids on site 	<ul style="list-style-type: none"> Only 4% of service delivery sites have AMTSL job aids 	<ul style="list-style-type: none"> 96% of service delivery sites do not have AMTSL job aids 	<ul style="list-style-type: none"> Develop AMTSL job aids Distribute job aids to 50% of institutions with delivery services 	<ul style="list-style-type: none"> Develop AMTSL job aids Distribute job aids to 90% of institutions with delivery services
III. Training/Supervision/Logistics				
<ul style="list-style-type: none"> All providers are trained in AMTSL 	<ul style="list-style-type: none"> Only 11% of providers are trained in AMTSL 	<ul style="list-style-type: none"> 89% of providers not trained in AMTSL 	<ul style="list-style-type: none"> Obtain small grant funds to train 100 providers 	<ul style="list-style-type: none"> Train all midwives and 25% of nurses

Action Plan: GHANA

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
I. Policy and Advocacy				
<ul style="list-style-type: none"> Policy and programs exist that ensure a skilled provider is present at all births 	<ul style="list-style-type: none"> Although supportive policies exist, only 47% of women have access to skilled attendance at birth Financial, medical, geographic and socio-cultural barriers to skilled attendance at birth still exist 	<ul style="list-style-type: none"> 53% of women give birth without a skilled provider Lack of information on barriers to use of skilled attendance at all levels 	<ul style="list-style-type: none"> Advocate for “skilled attendance at birth for all” to be the theme for the national Safe Motherhood Week celebrations Collect data on reasons for non-use of skilled attendance at birth at all levels 	<ul style="list-style-type: none"> Continue advocacy to address all factors that hamper access to skilled attendance at birth
II. Service Delivery				
<ul style="list-style-type: none"> AMTSL is practiced at all births attended by a skilled provider 	<ul style="list-style-type: none"> Not all women who give birth with a skilled provider receive AMTSL AMTSL is not always provided correctly Current AMTSL protocol includes oxytocin or ergometrine at delivery of anterior shoulder 	<ul style="list-style-type: none"> Lack of information on number of women who receive AMTSL Lack of information on number of women who receive correct AMTSL Oxytocin not first-line drug in current protocol 	<ul style="list-style-type: none"> Perform quick baseline survey to determine number of women who receive AMTSL Update and disseminate new protocol for AMTSL recommending oxytocin as first-line drug administered after delivery of baby(ies) 	<ul style="list-style-type: none"> Establish monitoring system to provide information on number of women receiving AMTSL using oxytocin
III. Training/Supervision/Logistics				
<ul style="list-style-type: none"> All practicing midwives are skilled in providing AMTSL by 2010 All pre-service and in-service safe motherhood trainings in labor and delivery for doctors and midwives include AMTSL using oxytocin 	<ul style="list-style-type: none"> 500 of 2,082 practicing midwives have received in-service training on AMTSL Current safe motherhood in-service training manuals specify oxytocin or ergot for AMTSL 	<ul style="list-style-type: none"> Lack of information on number of practicing midwives not trained in AMTSL 	<ul style="list-style-type: none"> Conduct quick assessment of training needs for AMTSL at all facility levels Update safe motherhood training manuals and trainers in use of oxytocin for AMTSL 	<ul style="list-style-type: none"> Conduct in-service training for all midwives lacking skills in AMTSL

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
III. Training/Supervision/Logistics (continued)				
<ul style="list-style-type: none"> All practicing midwives and doctors are given regular supportive supervision Standardized supervision guides for AMTSL are available and used 	<ul style="list-style-type: none"> Not all providers are supervised regularly for AMTSL skills Standard supervisory guide is based on old protocol using oxytocin and ergot for AMTSL Lack of information on use of supervisory guide for AMTSL 	<ul style="list-style-type: none"> Lack of information on service providers supervised in AMTSL Supervisory guide for AMTSL is out of date Lack of information on use of supervisory guide for AMTSL 	<ul style="list-style-type: none"> Encourage facilities at all levels to report on supervisory coverage for service providers on AMTSL Review and update supervisory guide for AMTSL 	<ul style="list-style-type: none"> Encourage district, regional and national levels to regularly review supervisory data as part of evaluation of quality of labor and delivery care
<ul style="list-style-type: none"> All facilities providing BOC and COC have full complement of logistics, equipment and supplies for AMTSL by 2010 	<ul style="list-style-type: none"> National information on availability of oxytocin in labor and delivery units is based on 2002 service provider survey Information on procurement and use of oxytocics is not used to monitor AMTSL 	<ul style="list-style-type: none"> Lack of current information on availability and use of oxytocin for AMTSL RH National Annual reports on logistics do not include information on procurement and use of oxytocics 	<ul style="list-style-type: none"> Revise monthly midwifery returns to include data on number of women receiving oxytocin for AMTSL Include information on procurement and use of oxytocin in RH annual reports 	<ul style="list-style-type: none"> Reports of low use of oxytocics in AMTSL are investigated and addressed by facilities
IV. Community Education and Social Mobilization				
<ul style="list-style-type: none"> Women, families and communities are educated and supported to ensure that pregnant women seek and receive skilled attendance at birth 	<ul style="list-style-type: none"> Community mobilization for skilled attendance at birth is weak in most communities There is documented information in-country of successful community mobilization strategies to support pregnant women 	<ul style="list-style-type: none"> Community mobilization strategies targeted to skilled attendance at birth Limited use or replication of successful community mobilization strategies 	<ul style="list-style-type: none"> Review IEC protocols to include community role in BP/CR Review protocol on IEC and counseling at antenatal care (ANC) to include counseling of support persons for BP/CR at all levels Adapt and use Home-Based Life Saving Skills manual 	<ul style="list-style-type: none"> Develop policies that promote sharing of information on PPH-related maternal deaths with community leaders and members to address community-related factors and issues Promote dissemination of best practices in community mobilization for pregnant women (e.g., Wassa West)

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
IV. Community Education and Social Mobilization (continued)				
<ul style="list-style-type: none"> Community members are included and play active roles in management of facilities providing BOC and COC 	<ul style="list-style-type: none"> Policies exist that recommend inclusion of community members on hospital boards, and in district (DHC) and regional health committees (RHC) Some facilities include private care providers in audit committee 	<ul style="list-style-type: none"> Community members on boards, DHC and RHC are not involved in all decisions relating to BOC/COC Community members not involved in facility-based maternal death audits involving cases with community-related factors 	<ul style="list-style-type: none"> Ensure participation of community members on management boards/teams at all levels in discussions relating to maternal care and deaths Involve community members in maternal deaths audits (on cases of PPH) with community-related contributory factors 	
Treatment of PPH				
I. Policy and Advocacy				
<ul style="list-style-type: none"> Policy and programs exist that ensure that all women in Ghana with PPH have access to quality COC 	<ul style="list-style-type: none"> Policy states that all births and delivery-related complications are free Policy standards and protocols exist for PPH management at all levels Current protocol was developed in 1998 and is out of date; protocol is under review Financial, medical, geographic and socio-cultural barriers exist that limit access to COC 	<ul style="list-style-type: none"> Policy not always followed (e.g., in teaching hospitals) Policy does not include misoprostol or newer treatment methods (e.g., anti-shock garments, condom tamponade, surgical methods) Lack of information on extent to which various barriers contribute to limited access to COC in cases of PPH at all levels 	<ul style="list-style-type: none"> Advocate for all COC facilities to adhere to policy Advocate for registration of misoprostol, including for PPH treatment Revise PPH management protocols to include use of misoprostol at all levels Revise protocols to include newer treatment procedures at all levels Collate and analyze audit data to determine extent to which various factors limit access to COC in cases of PPH 	<ul style="list-style-type: none"> Continue advocacy to address all factors that hamper access to COC Disseminate revised protocols to all levels

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Treatment of PPH				
I. Policy and Advocacy (continued)				
	<ul style="list-style-type: none"> National Health Insurance Scheme (NHIS) package covers delivery-related complications, including PPH 	<ul style="list-style-type: none"> 80% of Ghanaians have not registered and are therefore ineligible for NHIS 	<ul style="list-style-type: none"> Advocate for NHIS education and/or registration of pregnant women attending ANC 	<ul style="list-style-type: none"> Advocate for NHIS education and/or registration of pregnant women attending ANC
III. Service Delivery				
<ul style="list-style-type: none"> All women with PPH receive quality COC, according to stated national protocols, at all levels 	<ul style="list-style-type: none"> Coverage of COC with blood transfusion service is 80% Audit reports show poor adherence to protocol for PPH management Current policy includes provision of ergot tablets at community level for treatment of PPH 	<ul style="list-style-type: none"> 20% of women still lack access to COC Gaps exist in correct use of uterotonic drugs, IV fluids and patient monitoring and interpersonal skills Misoprostol not included for community-level treatment 	<ul style="list-style-type: none"> Conduct updates on PPH management treatments and technologies for professional organizations (Ghana Registered Midwives Association, Society of Obstetricians and Gynecologists of Ghana) and health managers Develop and promote use of job aids to facilitate adherence to protocols Develop a protocol for using misoprostol to manage PPH Advocate for provision of misoprostol to Community-based Health Planning and Services (CHPS) care providers for emergency use at community level 	<ul style="list-style-type: none"> Provide COC services in accordance with national goals of one COC facility per 200,000 population Continue in-service training to improve PPH management skills Include effective newer treatments and technologies in treatment protocols at all levels
<ul style="list-style-type: none"> Universal IP precautions are used in management of all cases with PPH 	<ul style="list-style-type: none"> Only some protective items are used by care providers (gloves, aprons) 	<ul style="list-style-type: none"> Inadequacies still exist in IP in many labor/delivery and theater facilities 	<ul style="list-style-type: none"> Develop and disseminate job aids on universal precautions for labor and delivery areas 	

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Treatment of PPH				
III. Training/Supervision/Logistics				
<ul style="list-style-type: none"> • All practicing midwives are skilled in management of PPH • All pre-service and in-service safe motherhood training programs for doctors and midwives include competency-based management of shock and PPH • All practicing service providers receive in-service update training at least once every 3 years 	<ul style="list-style-type: none"> • Since 2001, 500 of 2,082 practicing midwives received in-service training in PPH management, including manual removal of placenta, IV fluid resuscitation, and repair of vaginal and cervical tears • Current safe motherhood pre-service and in-service training does not adequately include competency-based training for manual removal of placenta • Current in-service training updates are irregular and not conducted according to policy for all providers • Newer technologies are not included in training manuals 	<ul style="list-style-type: none"> • Information on practicing midwives not trained in PPH management is not available • Data are not available on current training needs of service providers 	<ul style="list-style-type: none"> • Conduct quick assessment of training needs for Life Saving Skills at all facility levels • Review and update safe motherhood training manuals and trainers in newer PPH management technologies and treatments • Ensure trainings are competency-based 	<ul style="list-style-type: none"> • Conduct in-service training for all midwives lacking skills in AMTSL
<ul style="list-style-type: none"> • All practicing midwives and doctors are given regular supportive supervision • Standardized supervision guides to assess emergency preparedness for PPH are available 	<ul style="list-style-type: none"> • Service providers providing life saving skills (e.g., manual removal of placenta, repair of tears) are not all adequately supervised • Standard supervisory guide is available to evaluate emergency preparedness for PPH (availability on site of emergency PPH kit) 	<ul style="list-style-type: none"> • Lack of information on service providers supervised in PPH management • Lack of information on effective use of supervisory guide for improving site emergency preparedness for PPH 	<ul style="list-style-type: none"> • Encourage facilities at all levels to report on supervisory coverage for providers in relation to improving quality of care for obstetric emergencies, including PPH • Review and update supervisory guide for emergency preparedness to include availability of misoprostol and newer technologies 	<ul style="list-style-type: none"> • Encourage district, regional and national levels to regularly review supervisory data as part of evaluation of quality of care

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Treatment of PPH				
III. Training/Supervision/Logistics (continued)				
<ul style="list-style-type: none"> All facilities providing BOC/COC have full complement of logistics, equipment and supplies, including blood for transfusion 	<ul style="list-style-type: none"> Current national data indicate 119 blood transfusion centers exist in all 10 regions of country Not all COC facilities have blood transfusion service Shortage of blood is a perennial problem Some facilities promote blood donation for ANC clients 	<ul style="list-style-type: none"> Not clear how many facilities providing COC have no blood transfusion service Majority of blood supply obtained by replacement donation Not all facilities promote donation for ANC clients 	<ul style="list-style-type: none"> Advocate to promote mass blood donation for pregnant mothers Encourage ANC donation at all facilities as part of BP/CR plan 	<ul style="list-style-type: none"> Advocate for blood transfusion facilities at all COC centers
IV. Community Education and Social Mobilization				
<ul style="list-style-type: none"> Women, families and communities are educated to give support and to ensure that a woman with PPH promptly seeks and receives skilled care 	<ul style="list-style-type: none"> Community mobilization and support for women with PPH is weak, often resulting in delays in seeking care Although existing policy addresses financial barriers to seeking prompt care for obstetric emergencies, there are still some financial barriers 	<ul style="list-style-type: none"> Many hospitals still have major financial barriers to EmOC Women and their families do not adequately plan for labor, birth or emergencies 	<ul style="list-style-type: none"> Advocate with health care managers to promote fee-free access to EmOC Update IEC protocols to include promotion of enhanced community roles in BP/CR Review protocol on IEC and counseling at ANC to include counseling of support persons for BP/CR at all levels 	<ul style="list-style-type: none"> Develop policies that promote sharing of information on PPH-related maternal deaths with community leaders and members to address community-related factors Promote dissemination of best practices in community mobilization for pregnant women (e.g., Wassa West experience)

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Treatment of PPH				
IV. Community Education and Social Mobilization (continued)				
<ul style="list-style-type: none"> Community support and participation in blood donation drives 	<ul style="list-style-type: none"> Many communities members still refuse to donate blood for various reasons 	<ul style="list-style-type: none"> Community members on boards, DHC and RHC not involved in all decisions relating to BOC/COC Community members not involved in maternal death audits involving cases with community-related factors 	<ul style="list-style-type: none"> Ensure community members on management boards/teams at all levels participate in discussions on issues relating to maternal care and deaths Involve community members in maternal death audits on cases of PPH with community-related contributory factors 	
<ul style="list-style-type: none"> All women have prompt access to emergency transport when obstetric emergencies arise 	<ul style="list-style-type: none"> Second delay is still a major cause of maternal death from PPH 	<ul style="list-style-type: none"> Lack of information on extent of second delay as cause of maternal death from PPH 	<ul style="list-style-type: none"> Review audit data at all levels to determine extent of second delay Disseminate findings to community leaders to solicit their help Encourage involvement of transportation plan in all BP/CR planning 	<ul style="list-style-type: none"> Encourage district assembly involvement in addressing second delay (e.g., ambulance service, road network) Work with community leaders and organizations (e.g., chiefs, Queen mothers, Ghana Private Road Transport Union) to develop an acceptable and sustainable emergency transport service (e.g., community ambulance schemes)

Action Plan: MADAGASCAR

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
I. Policy and Advocacy				
<ul style="list-style-type: none"> • AMTSL is included in National RH Policy and roadmap for Maternité sans Risque (MSR) • Standards of care for third stage of labor are included in national policies and service directives 	<ul style="list-style-type: none"> • Current policy for basic and EmOC and neonatal care does not include AMTSL • There are no standards for management of third stage of labor 	<ul style="list-style-type: none"> • Include AMTSL in roadmap for MSR and PNP documents 	<ul style="list-style-type: none"> • Revise PNP to include AMTSL 	<ul style="list-style-type: none"> • Hold workshop to disseminate PNP in each region
II. Service Delivery				
<ul style="list-style-type: none"> • Births are attended by a competent provider 	<ul style="list-style-type: none"> • Not all births are attended by a provider competent in AMTSL 	<ul style="list-style-type: none"> • Skilled provider competent in AMTSL at every birth 	<ul style="list-style-type: none"> • Train providers in the pilot zone in AMTSL 	<ul style="list-style-type: none"> • Scale up in selected health facilities
<ul style="list-style-type: none"> • Uterotonic drugs are used at every birth 	<ul style="list-style-type: none"> • Oxytocin is not used systematically at every birth 	<ul style="list-style-type: none"> • Adequate system of logistics for uterotonic drugs 	<ul style="list-style-type: none"> • Make uterotonic drugs available in health facilities in pilot zone 	<ul style="list-style-type: none"> • Scale up in other selected health facilities
III. Training/Supervision/Logistics				
<ul style="list-style-type: none"> • All providers are trained in AMTSL 	<ul style="list-style-type: none"> • Curriculum for normal labor approved and included in pre-service training course at national level, but does not have AMTSL 	<ul style="list-style-type: none"> • Untrained service providers exist in all health facilities 	<ul style="list-style-type: none"> • Revise/develop training curriculum • Train providers in health centers and maternities in pilot zone 	<ul style="list-style-type: none"> • Show donors the need to finance training in normal labor, including AMTSL • Extend to 22 other regions
IV. Community Education and Social Mobilization				
<ul style="list-style-type: none"> • Community systems exist for referral of complications due to PPH 	<ul style="list-style-type: none"> • No plan for BP/CR or financial support for emergencies • Health mutuels do not cover all communes 	<ul style="list-style-type: none"> • Community plan for transport and finance of emergency cases in pilot zone 	<ul style="list-style-type: none"> • Experiment with the model in selected exemplary communities 	<ul style="list-style-type: none"> • Ensure monitoring and expansion of the model

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH Without a Competent Health Care Provider: Misoprostol				
I. Service Delivery				
<ul style="list-style-type: none"> CHWs (e.g., TBAs) are trained and supervised to counsel on BP/CR and what to do in case of PPH 	<ul style="list-style-type: none"> CHWs are alerted to danger signs but not on what to do in case of PPH 	<ul style="list-style-type: none"> Supplementary training Formative supervision 	<ul style="list-style-type: none"> Update knowledge of PPH and skills of CHWs in pilot zone 	<ul style="list-style-type: none"> Scale up in selected communities
II. Community Education and Social Mobilization				
<ul style="list-style-type: none"> Community is aware of PPH and can recognize danger signs 	<ul style="list-style-type: none"> Lack of knowledge and awareness of PPH in communities 	<ul style="list-style-type: none"> Lack of knowledge and awareness in communities 	<ul style="list-style-type: none"> Create a radio campaign 	<ul style="list-style-type: none"> Health care workers and service providers at the facilities in the pilot zone conduct information sessions about PPH danger signs and what to do
Treatment of PPH				
I. Policy and Advocacy				
<ul style="list-style-type: none"> Decentralization of PPH treatment at lowest level 	<ul style="list-style-type: none"> AMTSL not included in current policy 	<ul style="list-style-type: none"> Integrate AMTSL into policy 	<ul style="list-style-type: none"> Advocate with MOH Revise policy 	<ul style="list-style-type: none"> Disseminate to regions and districts
<ul style="list-style-type: none"> Uterotonic drugs are available and providers are capable of administering them 	<ul style="list-style-type: none"> Misoprostol has not been approved Oxytocin is not on list of essential drugs 	<ul style="list-style-type: none"> Make misoprostol and oxytocin available in public sector 	<ul style="list-style-type: none"> Advocate for use of misoprostol for AMTSL Provide oxytocin as an essential drug 	<ul style="list-style-type: none"> Ensure safety of drugs for AMTSL
<ul style="list-style-type: none"> Efforts to improve quality are supported by policies 	<ul style="list-style-type: none"> Quality of services is not always adequate in all health facilities 	<ul style="list-style-type: none"> Quality assurance system 	<ul style="list-style-type: none"> Develop performance standards for AMTSL 	<ul style="list-style-type: none"> Introduce Standards-Based Management and Recognition (SBM-R)
II. Service Delivery				
<ul style="list-style-type: none"> Providers wear protective clothing during births, especially with PPH clients 	<ul style="list-style-type: none"> Protective clothing lacking in health centers 	<ul style="list-style-type: none"> Lack of availability of protective clothing and bleach in health facilities 	<ul style="list-style-type: none"> Evaluate needs for protective clothing Make protective clothing available in pilot zone 	<ul style="list-style-type: none"> Scale up in selected health care facilities

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Treatment of PPH				
III. Training/Supervision/Logistics				
<ul style="list-style-type: none"> All providers have knowledge and skills to treat PPH 	<ul style="list-style-type: none"> Curriculum for normal labor is approved and part of pre-service training program at national level, but it does not include AMTSL 	<ul style="list-style-type: none"> Untrained service providers are in all health care facilities 	<ul style="list-style-type: none"> Revise/develop training curriculum Train providers at basic health care centers and maternities in pilot zone 	<ul style="list-style-type: none"> Explain to donors the need to finance training in normal labor and AMTSL Expand to the other 22 regions
IV. Community Education and Social Mobilization				
<ul style="list-style-type: none"> A social security network exists for the indigent to cover the cost of treating PPH 	<ul style="list-style-type: none"> Health mutuals do not cover all communes 	<ul style="list-style-type: none"> Community financing of emergency obstetric cases 	<ul style="list-style-type: none"> Use existing health mutual network to finance care of emergencies 	<ul style="list-style-type: none"> Scale up in intervention zones
<ul style="list-style-type: none"> Transport for emergency cases is available and accessible 	<ul style="list-style-type: none"> No system for emergency transport exists 	<ul style="list-style-type: none"> Reliable system of transport within community 	<ul style="list-style-type: none"> Alert community to importance of establishing a transport system, and of community solidarity Prepare a plan for transport of emergency cases at the community level 	<ul style="list-style-type: none"> Scale up in intervention zones

Action Plan: MALAWI

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Treatment of PPH				
I. Policy and Advocacy				
<ul style="list-style-type: none"> • Oxytocin is first-line drug for AMTSL • Misoprostol is introduced for PPH treatment 	<ul style="list-style-type: none"> • Syntometrine is first-line drug for AMTSL • Misoprostol is not used for PPH treatment 	<ul style="list-style-type: none"> • Update guidelines for treatment of PPH in accordance with new evidence-based standards 	<ul style="list-style-type: none"> • Share action plan with key stakeholders • Advocate for policy change by MOH to make oxytocin first-line drug for AMTSL and ensure its availability • Establish communication with MOH, Pharmacy, Medicines and Poisons Board about misoprostol 	<ul style="list-style-type: none"> • Advocate for evidence-based research on misoprostol for treatment of PPH • Establish communication with Venture Strategies
<ul style="list-style-type: none"> • Expanded scope of practice for skilled attendants at birth in treatment of PPH 	<ul style="list-style-type: none"> • Registered midwives, intern medical officers and clinical officers are not allowed to repair cervical tears 	<ul style="list-style-type: none"> • Registered nurse midwives, intern medical officers and clinical officers allowed to repair cervical tears 	<ul style="list-style-type: none"> • Co-opt medical council representative into PPH country team • Lobby regulatory bodies to include repair of cervical tears by registered nurse midwives, intern medical officers and clinical officers within scope of their training and practice 	<ul style="list-style-type: none"> • Monitor and evaluate with regulatory bodies on change of policy

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Treatment of PPH				
II. Training/Supervision/Logistics				
<ul style="list-style-type: none"> Pre-service and in-service training on treatment of PPH is strengthened 	<ul style="list-style-type: none"> Registered nurse midwives know how to do bimanual compression and manual removal of placenta, but they are not doing it Nurses Midwives Council includes AMTSL, bimanual compression and manual removal of placenta in 2004 syllabi for nurse midwife technicians and enrolled midwives Clinical officers' pre-service program does not adequately address all skills required in treatment of PPH Medical officers trained in manual removal of placenta and repair of cervical tears during internship, but little is known about their practice 	<ul style="list-style-type: none"> Practicing nurse midwife technicians and enrolled midwives not trained on AMTSL, bimanual compression or manual removal of placenta Clinical officers have inadequate skills for treatment of PPH Review and revise training In-service training, practice and supervision 	<ul style="list-style-type: none"> Review internal/ external assessment by WHO, and address findings Review pre-service curriculum and its implementation Conduct in-service training for tutors Conduct on-the-job training of 5% of nurse midwife technicians and enrolled midwives Conduct refresher training of 5% of clinical officers to update treatment of PPH Conduct knowledge, attitude and practice study 	<ul style="list-style-type: none"> Provide supportive supervision, monitoring and evaluation Expand in-service training to 100%
<ul style="list-style-type: none"> Logistics management systems for treatment of PPH are strengthened 	<ul style="list-style-type: none"> Logistics management systems are poor A needs assessment was conducted by MOH on essential drugs and commodities 	<ul style="list-style-type: none"> Lack of knowledge on forecasting, procurement, distribution, use and information management Inadequate supportive supervision of pharmacy 	<ul style="list-style-type: none"> Determine results of needs assessments, and address gaps 	<ul style="list-style-type: none"> Conduct refresher training courses for service providers and pharmacy assistants Provide supportive supervision

Action Plan: MALI

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
I. Policy and Advocacy				
<ul style="list-style-type: none"> Standards for care during third stage of labor are included in national policies and service guidelines 	<ul style="list-style-type: none"> Standards for care during third stage of labor are included in national policies and service guidelines AMTSL has been introduced into RH Norms and Policies 	<ul style="list-style-type: none"> Disseminate standards of care to regions 	<ul style="list-style-type: none"> Hold dissemination workshops in every region Conduct advocacy during Low Maternal Risk Day 	<ul style="list-style-type: none"> Hold dissemination workshops in every health district
II. Service Delivery				
<ul style="list-style-type: none"> 75% of births are attended by a skilled provider 	<ul style="list-style-type: none"> 41% of births are attended by a skilled provider 	<ul style="list-style-type: none"> Low use of services Inadequate number of trained providers 	<ul style="list-style-type: none"> Create community awareness by popularizing birth preparedness Strengthen capabilities of existing personnel 	<ul style="list-style-type: none"> Create community awareness by popularizing birth preparedness Strengthen capabilities of existing personnel
<ul style="list-style-type: none"> Uterotonic drugs are used in 75% of all births 	<ul style="list-style-type: none"> Uterotonic drugs are used in 94% of births in eight pilot sites 	<ul style="list-style-type: none"> Scale up use of uterotonic drugs 	<ul style="list-style-type: none"> Train regional providers Make uterotonic drugs available at service delivery sites 	<ul style="list-style-type: none"> Train district providers Make uterotonic drugs available at service delivery sites
III. Training/Supervision/Logistics				
<ul style="list-style-type: none"> All providers (ob/gyns, physicians, midwives, obstetric nurses) are trained in and practicing AMTSL 	<ul style="list-style-type: none"> About 30% of providers are trained in AMTSL 	<ul style="list-style-type: none"> 70% of providers not trained in AMTSL 	<ul style="list-style-type: none"> Train trainers in nursing and midwifery schools Train midwifery and obstetric nursing students in 2006 Test feasibility of AMTSL by matrons 	<ul style="list-style-type: none"> Integrate AMTSL into curricula Conduct in-service training of providers Supervise trained providers Conduct monitoring and evaluation

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
III. Training/Supervision/Logistics (continued)				
<ul style="list-style-type: none"> Supervision tools and guidelines contain AMTSL 	<ul style="list-style-type: none"> About 30% of supervision tools and guidelines have tools and directives for AMTSL 	<ul style="list-style-type: none"> 70% of providers have no tools or directives for AMTSL 	<ul style="list-style-type: none"> Make copies of job aids and technical documents for AMTSL 	<ul style="list-style-type: none"> Make copies of job aids and technical documents for AMTSL for pre-service training institutions and training sites Develop other documents for treatment of PPH
<ul style="list-style-type: none"> All facilities with trained staff have guidelines and adequate supplies of uterotonic drugs and equipment 	<ul style="list-style-type: none"> All facilities with trained staff have protocols, uterotonic drugs and equipment 	<ul style="list-style-type: none"> Stocks are poorly managed (faulty estimation of need for uterotonic drugs) 	<ul style="list-style-type: none"> Update knowledge of pharmacists and those in charge of management and storage of uterotonic drugs 	<ul style="list-style-type: none"> Suggest inclusion of oxytocin in list of 10 "basket drugs"
IV. Community Education and Social Mobilization				
<ul style="list-style-type: none"> Systems for maternal and neonatal complications exist at village level 	<ul style="list-style-type: none"> Community relay stations exist in some health districts 	<ul style="list-style-type: none"> Inadequate coverage of community by relay stations 	<ul style="list-style-type: none"> Standardize the relay approach throughout the country 	<ul style="list-style-type: none"> Standardize the relay approach throughout the country
<ul style="list-style-type: none"> Communities are involved in management of health facilities (hospital and community management committees) 	<ul style="list-style-type: none"> Hospital advisory boards, health cycle council, health center management committee, Community Health Association and health mutual assistance organizations exist 	<ul style="list-style-type: none"> Groups do not meet regularly Weak management capacities of units Weak participation of leaders 	<ul style="list-style-type: none"> Conduct advocacy activities Provide management training for the various groups 	<ul style="list-style-type: none"> Provide management training for the various groups
<ul style="list-style-type: none"> Emergency cases are treated before requiring patients or families to pay for drugs and supplies 	<ul style="list-style-type: none"> A prepayment system for emergency cases exists A referral system exists 	<ul style="list-style-type: none"> Inadequate collection of prepayments 	<ul style="list-style-type: none"> Raise awareness of the community and management units 	<ul style="list-style-type: none"> Raise awareness of the community and management units

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH Without a Competent Health Care Provider: Misoprostol				
I. Policy and Advocacy				
<ul style="list-style-type: none"> Misoprostol program for home births is approved for scale-up at national level 	<ul style="list-style-type: none"> National management committee exists and has the support of the MOH 	<ul style="list-style-type: none"> Regulations for misoprostol do not allow distribution by CHWs for PPH 	<ul style="list-style-type: none"> Address regulatory problems 	<ul style="list-style-type: none"> Produce generic misoprostol locally and add to essential drugs lists
II. Service Delivery				
<ul style="list-style-type: none"> CHWs in provinces are trained and supervised to counsel for BP/CR and PPH, and to provide misoprostol 	<ul style="list-style-type: none"> CHWs are trained in one district 	<ul style="list-style-type: none"> Supplementary training of CHWs 	<ul style="list-style-type: none"> Increase in two provinces the number of trained CHWs who understand PPH 	<ul style="list-style-type: none"> Train CHWs in targeted region
III. Community Education and Social Mobilization				
<ul style="list-style-type: none"> Communities recognize danger signs of PPH 	<ul style="list-style-type: none"> Lack of knowledge in community about danger signs of PPH 	<ul style="list-style-type: none"> Educate community about danger signs of PPH 	<ul style="list-style-type: none"> Conduct a radio campaign 	<ul style="list-style-type: none"> Help CHWs organize informational events about PPH danger signs

Action Plan: MAURITANIA

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
I. Policy and Advocacy				
<ul style="list-style-type: none"> Reducing maternal deaths is a high priority 	<ul style="list-style-type: none"> High maternal mortality ratio: 747/100,000 live births 	<ul style="list-style-type: none"> Lack of qualified personnel, equipment and supplies Management of drugs and consumables 	<ul style="list-style-type: none"> Conduct workshop to report on conference Propose revision of Norms and Procedures to include AMTSL Introduce AMTSL during RH Week Involve professional associations, gynecologists and midwives 	<ul style="list-style-type: none"> Expand activities in facilities
II. Service Delivery				
<ul style="list-style-type: none"> 80% of births are attended by a skilled provider 	<ul style="list-style-type: none"> 60% of births are attended by a skilled provider 	<ul style="list-style-type: none"> Lack of personnel Inaccessibility of services, including for financial reasons 	<ul style="list-style-type: none"> Make available birthing kits, cesarean sections and a system for care of the indigent 	<ul style="list-style-type: none"> Expand obstetrical assistance package
<ul style="list-style-type: none"> Use uterotonic drugs at 80% of births 	<ul style="list-style-type: none"> Uterotonic drugs are used at 50% of births 	<ul style="list-style-type: none"> Revise norms for use of uterotonic drugs 	<ul style="list-style-type: none"> Make uterotonic drugs regularly available in sufficient quantity 	<ul style="list-style-type: none"> Establish a supply system for uterotonic drugs
III. Training/Supervision/Logistics				
<ul style="list-style-type: none"> AMTSL trainers are available 	<ul style="list-style-type: none"> There is a pool of national and regional trainers in EOC 	<ul style="list-style-type: none"> Some trainers misunderstand concept of AMTSL 	<ul style="list-style-type: none"> National training of trainers in AMTSL 	
<ul style="list-style-type: none"> Revise supervision tools for RH activities to integrate AMTSL 	<ul style="list-style-type: none"> Lack of supervision 	<ul style="list-style-type: none"> Strengthen follow-up 	<ul style="list-style-type: none"> Organize monthly training supervision in pilot zone 	<ul style="list-style-type: none"> Implement a permanent system for follow-up and monitoring

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
IV. Community Education and Social Mobilization				
<ul style="list-style-type: none"> Involve community in management of health facilities 	<ul style="list-style-type: none"> A Management Committee exists 	<ul style="list-style-type: none"> Lack of involvement of Management Committee 	<ul style="list-style-type: none"> Raise awareness of AMTSL among members of Management Committee 	<ul style="list-style-type: none"> Hold periodic meetings of Management Committee to obtain consensus
<ul style="list-style-type: none"> Promote care of emergency cases 		<ul style="list-style-type: none"> Lack of system to care for emergency cases 	<ul style="list-style-type: none"> Make kits available for care of emergencies 	<ul style="list-style-type: none"> Establish a system for care of emergencies in pilot zone
<ul style="list-style-type: none"> Alert communities to danger signs of PPH 	<ul style="list-style-type: none"> Lack of information in community about danger signs of PPH 	<ul style="list-style-type: none"> Provide communities with information about danger signs of PPH 	<ul style="list-style-type: none"> Hold meetings to alert community leaders to danger signs of PPH 	<ul style="list-style-type: none"> Organize sessions to alert community and leaders to danger signs of PPH

Action Plan: NIGERIA

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
I. Policy and Advocacy				
<ul style="list-style-type: none"> Standards for AMTSL are included in national service policies and guidelines 	<ul style="list-style-type: none"> National documents give option of using ergometrine or oxytocin in AMTSL 	<ul style="list-style-type: none"> Clarify that oxytocin is first-line drug for AMTSL 	<ul style="list-style-type: none"> Review all policy guidelines and protocols to update information on AMTSL 	<ul style="list-style-type: none"> Widely disseminate updated policy guidelines and protocols
<ul style="list-style-type: none"> Potent uterotonic drugs are available, accessible and affordable 	<ul style="list-style-type: none"> Field reports suggest widespread availability of non-potent or adulterated uterotonic drugs 	<ul style="list-style-type: none"> Eliminate fake uterotonic drugs from Nigerian market 	<ul style="list-style-type: none"> Alert National Agency for Food and Drug Administration and Control (NAFDAC) about fake drugs 	<ul style="list-style-type: none"> Advocate with NAFDAC to stop importation of fake uterotonic drugs
II. Service Delivery				
<ul style="list-style-type: none"> All births are attended by skilled providers 	<ul style="list-style-type: none"> Only 37% of births are attended by skilled providers 	<ul style="list-style-type: none"> Increase skilled care attendance (to 90% according to Millennium Development Goal 5) 	<ul style="list-style-type: none"> Meet with State Local Government Service Commission about changing present policy of non-employment of qualified midwives by Local Government Authority (LGA) 	<ul style="list-style-type: none"> Change national policy that precludes employment of midwives by LGA (employment limit for LGA is at Level 6, whereas midwives start at Level 7)
III. Training/Supervision/Logistics				
<ul style="list-style-type: none"> All providers in private sector are trained in AMTSL 	<ul style="list-style-type: none"> Lack of statistics about number of private practitioners who practice AMTSL 	<ul style="list-style-type: none"> Determine extent of problem of suboptimal practice of AMTSL among private practitioners 	<ul style="list-style-type: none"> Conduct survey on practice of AMTSL among private practitioners 	<ul style="list-style-type: none"> Update knowledge and practice of AMTSL among private practitioners
<ul style="list-style-type: none"> Make all graduating students of Gwagwalada Midwifery School adept in AMTSL 	<ul style="list-style-type: none"> Teaching of AMTSL is not in line with current standards 	<ul style="list-style-type: none"> Poor knowledge of standard practice of AMTSL among midwifery students 	<ul style="list-style-type: none"> Institutionalize the standard teaching of AMTSL in midwifery curriculum 	<ul style="list-style-type: none"> Monitor practices of AMTSL among Gwagwalada Midwifery School graduates

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
III. Training/Supervision/Logistics (continued)				
<ul style="list-style-type: none"> • Make AMTSL a routine practice in Gusau General Hospital 	<ul style="list-style-type: none"> • Not all staff are aware of current practice of AMTSL 	<ul style="list-style-type: none"> • Job aids and guidelines for AMTSL not present in hospital 	<ul style="list-style-type: none"> • Develop guidelines and protocols for AMTSL among midwives and doctors • Update staff on current practice of AMTSL 	<ul style="list-style-type: none"> • Determine reduction in incidence of PPH 6 months after intervention as a means of evaluation
IV. Community Education and Social Mobilization				
<ul style="list-style-type: none"> • Misoprostol is available for use at home births 	<ul style="list-style-type: none"> • Misoprostol is not available for use at home births 	<ul style="list-style-type: none"> • Pilot test use of misoprostol in community 	<ul style="list-style-type: none"> • Conduct pilot test of use of misoprostol for management of PPH in home births in Zamfara, Kano and Lagos states 	<ul style="list-style-type: none"> • Disseminate results of pilot study with stakeholders

Action Plan: TANZANIA

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
I. Policy and Advocacy				
<ul style="list-style-type: none"> Standards for AMTSL are included in national health service policies and guidelines 	<ul style="list-style-type: none"> Components of AMTSL included in National STG are not up to the standard of ICM/FIGO definition Oxytocin is on essential drug list for induction and augmentation of labor but not for prevention of PPH 	<ul style="list-style-type: none"> AMTSL not included in National STG Oxytocin not first-line drug for AMTSL 	<ul style="list-style-type: none"> Carry out sensitization and consensus-building workshop with policy-makers on importance of incorporating AMTSL (using oxytocin) in national health services policies and guidelines Advocate for AMTSL at meetings of Medical Association of Tanzania, Tanzania Registered Nurses Association, ARENA, Tanzania Midwives Association, etc. 	<ul style="list-style-type: none"> Carry out a workshop to revise national health services policies and guidelines to include AMTSL with oxytocin Distribute revised National STG to all facilities providing obstetric care
II. Service Delivery				
<ul style="list-style-type: none"> Ensure that all providers in selected districts with high MMR are using AMTSL 	<ul style="list-style-type: none"> Only 9% of providers are using AMTSL 	<ul style="list-style-type: none"> 91% of providers not using AMTSL 	<ul style="list-style-type: none"> Prepare workshop plans and secure funds for workshops Incorporate AMTSL training in existing training packages 	<ul style="list-style-type: none"> Conduct training workshops on AMTSL in selected districts Provide supportive supervision to ensure AMTSL is practiced correctly

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
III. Training/Supervision/Logistics				
<ul style="list-style-type: none"> • Train 75% of providers on correct use of AMTSL 	<ul style="list-style-type: none"> • About 90% of providers have poor knowledge of AMTSL • Life Savings Skills is the only in-service training program that includes AMTSL • AMTSL is included in pre-service curricula but is not well-emphasized • AMTSL is not included in current supervision program 	<ul style="list-style-type: none"> • Inadequate coverage of AMTSL in in-service training (included in Life Saving Skills training package) • Pre-service training curricula do not put enough emphasis on AMTSL • Supervision program does not include AMTSL 	<ul style="list-style-type: none"> • Conduct expert meeting to revise supervision checklist to ensure that AMTSL is integrated into supervision program • Conduct experts workshop to revise training curricula to strengthen teaching of AMTSL • Conduct workshop to develop proposal for AMTSL training, and seek funding sources 	<ul style="list-style-type: none"> • Monitor AMTSL contents in supervision and monitoring visits, and provide data back to country team • Conduct tracer study to ensure that AMTSL is being taught in training schools and practiced in facilities • Conduct training workshops on AMTSL to increase coverage of providers trained in AMTSL
<ul style="list-style-type: none"> • Uterotonic drugs are available and properly stored at facilities 	<ul style="list-style-type: none"> • In regional and district facilities surveyed, stocks of uterotonic drugs are not a problem; stockpile status below district level is not known • Three-quarters of facilities surveyed properly stored uterotonic drugs 	<ul style="list-style-type: none"> • Stockpile status at health centers and dispensaries conducting births is not known • One-quarter of facilities do not properly store uterotonic drugs 	<ul style="list-style-type: none"> • District Reproductive Child Health coordinators compile and provide drug stockpile status of their center and dispensaries • Conduct expert meeting to standardize storage and logistics of uterotonic drugs 	<ul style="list-style-type: none"> • Collect information on storage conditions during supervision and monitoring visits

Action Plan: ZAMBIA

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
I. Policy and Advocacy				
<ul style="list-style-type: none"> Maternal health is high among national health priorities 	<ul style="list-style-type: none"> Maternal health is included in National Health Strategic Plan (NHSP), RH policy and fifth National Development Plan 	<ul style="list-style-type: none"> Approval of RH national policy 	<ul style="list-style-type: none"> Lobby with MOH/ Permanent Secretary to expedite approval 	<ul style="list-style-type: none"> Highlight AMTSL and uterotonic drugs as critical life-saving interventions in all fora and training programs
<ul style="list-style-type: none"> Standards for AMTSL are included in national service policies and guidelines 	<ul style="list-style-type: none"> Available guidelines do not have standards 	<ul style="list-style-type: none"> SBM-R tools 	<ul style="list-style-type: none"> Develop standards for EmOC and EOC within one year 	
II. Service Delivery				
<ul style="list-style-type: none"> Providers in eight facilities (University Teaching Hospital [UTH], Kapiri Mposhi, and six health centers) are trained and performing AMTSL 	<ul style="list-style-type: none"> AMTSL is being practiced by a few people who have been trained AMTSL incorporated in pre-service and in-service training materials 	<ul style="list-style-type: none"> Low in-service training Insufficient funds for in-service training 	<ul style="list-style-type: none"> Prepare training sites Develop jobs aids 	<ul style="list-style-type: none"> Conduct in-service training and monitoring
<ul style="list-style-type: none"> Supervision tools include AMTSL 	<ul style="list-style-type: none"> Performance appraisal tools do not include AMTSL Supervisory tools are currently being developed 	<ul style="list-style-type: none"> Lack of supervisory tools for MCH coordinators 	<ul style="list-style-type: none"> Finalize MCH supervisory tools Incorporate AMTSL into performance appraisal tools 	
<ul style="list-style-type: none"> Eight facilities (UTH, Kapiri Mposhi and six health centers) have protocols and adequate supplies of uterotonic drugs and equipment 	<ul style="list-style-type: none"> Inadequate supplies lead to stock outs and shortages 	<ul style="list-style-type: none"> Supply of uterotonic drugs not matched to demand Inadequate equipment and supplies 	<ul style="list-style-type: none"> Orient pharmacists and health care providers to drug management 	<ul style="list-style-type: none"> Advocate for adequate procurement Expedite employment of RH Commodities Specialist Form RH Commodities Security Committee

Desired Situation/Objective	Actual Situation	Gaps/Needs	Immediate Interventions (up to 6 months)	Medium-Term Interventions (6 months to 3 years)
Prevention of PPH When a Competent Health Care Provider Is Present: AMTSL				
III. Community Education and Social Mobilization				
<ul style="list-style-type: none"> • Kapiri Mposhi community involved in prevention and management of PPH 	<ul style="list-style-type: none"> • Health center committees are in place • Birth plans are in place 	<ul style="list-style-type: none"> • Concept of BP/CR not communicated well at community level 		<ul style="list-style-type: none"> • Provide supervision of use of birth plans
Prevention of PPH Without a Competent Health Care Provider: Misoprostol				
I. Policy and Advocacy				
<ul style="list-style-type: none"> • Misoprostol is approved for scale-up for home births 	<ul style="list-style-type: none"> • Misoprostol is not yet registered • Essential drug list has prostaglandins (misoprostol is prostaglandin analogue) 	<ul style="list-style-type: none"> • No local evidence of use of misoprostol for PPH • Register misoprostol 	<ul style="list-style-type: none"> • Develop proposal piloting misoprostol use for home births • Champion for registration of misoprostol for PPH 	<ul style="list-style-type: none"> • Implement pilot in one district
Treatment of PPH				
I. Policy and Advocacy				
<ul style="list-style-type: none"> • Providers wear protective barriers during deliveries, especially for PPH clients 	<ul style="list-style-type: none"> • IP practices are low even though IP program is in place • Shortage of protective barriers for staff 	<ul style="list-style-type: none"> • Procure personal protective equipment and supplies 	<ul style="list-style-type: none"> • Reinforce IP practices in conjunction with Maternal and Infant Survival Project 	
<ul style="list-style-type: none"> • Emergency preparedness for PPH 	<ul style="list-style-type: none"> • Some but not all elements of emergency preparedness exist in facilities 	<ul style="list-style-type: none"> • Emergency trays are not complete • Drills rarely performed 	<ul style="list-style-type: none"> • Disseminate emergency tray list • Conduct emergency response drills 	
II. Training/Supervision/Logistics				
<ul style="list-style-type: none"> • Health care providers in eight facilities have knowledge and skills in treatment of PPH 	<ul style="list-style-type: none"> • Inadequate in-service training 	<ul style="list-style-type: none"> • Training aids • Inadequate expertise in highly specialized surgical skills 	<ul style="list-style-type: none"> • Adapt training materials 	<ul style="list-style-type: none"> • Train health care providers

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The ACCESS Program is the U.S. Agency for International Development's global program to improve maternal and newborn health. The ACCESS Program works to expand coverage, access and use of key maternal and newborn health services across a continuum of care from the household to the hospital—with the aim of making quality health services accessible as close to the home as possible. JHPIEGO implements the program in partnership with Save the Children, Constella Futures, the Academy for Educational Development, the American College of Nurse-Midwives and Interchurch Medical Assistance.