Introducing Uterine Balloon Tamponade in Zambia: Engaging and Training Local Partners
EXECUTIVE SUMMARY

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As part of Saving Mothers, Giving Life (SMGL), the American College of Obstetricians and Gynecologists (ACOG) worked with local partners to implement Uterine Balloon Tamponade (UBT) — a technique used to insert a balloon into the uterus, and inflated to alleviate or stop refractory bleeding — as a low-cost complementary method to prevent death from postpartum hemorrhage (PPH) in Zambia. This work was commissioned by the Ministry of Health and conducted with ACOG’s implementing partner the Centre for Infectious Disease Research Zambia (CIDRZ). Other key stakeholders included the Emergency Obstetric and Newborn Care (EmONC) committee and the Zambian Association of Gynaecologists and Obstetricians (ZAGO).

The UBT program focused on three objectives:

1. Aligning UBT with Zambia’s national approach to PPH management
2. Advocating for policy change on PPH guidelines to include UBT as part of the scope of work for midwives
3. Creating a pool of in-country trainers to conduct Training of Trainers (TOT) workshops in order to offer cascade training in all 16 districts

The ensuing case study focuses on the strategic engagement and advocacy efforts that led to UBT scale-up in Zambia.

Key Accomplishments

1. UBT has been successfully integrated into the Zambian Emergency Obstetric and Newborn Care (EmONC) curriculum Zambia, per a Ministry of Health (MOH) directive.
2. The MOH changed their national scope of practice for midwives to include placement of UBT as a complementary intervention for managing PPH.
3. To-date, 618 nurses, midwives, medical doctors and licentiates have been trained in UBT in SMGL supported districts.

Program Timeline

- **JULY 2015**
  - First UBT Demonstration Training
- **APRIL 2016**
  - Training of Trainers (TOT), master training for national scale-up
- **JULY 2016**
  - CIDRZ starts implementing UBT
- **MARCH 2017**
  - UBT Refresher Training
Collaborating Partners
SECTION ONE:
INTRODUCTION AND BACKGROUND

Saving Mothers, Giving Life is a public-private partnership to dramatically reduce maternal and newborn mortality in Nigeria, Uganda, and Zambia.

*Saving Mothers, Giving Life* (SMGL) is a five-year public-private partnership among the U.S. Government, the Governments of Nigeria, Norway, Uganda, and Zambia, Merck for Mothers, Every Mother Counts, Project C.U.R.E., and the American College of Obstetricians and Gynecologists. The partnership aims to dramatically reduce maternal and newborn mortality in sub-Saharan African countries. The partnership’s accomplishments over the past four years demonstrate that a comprehensive systems approach can achieve impressive results in saving women’s and newborns’ lives in resource-constrained settings.

American College of Obstetricians and Gynecologists (ACOG) is proud to be a founding partner of *Saving Mothers, Giving Life*

The Office of Global Women’s Health (OGWH) at the American College of Obstetricians and Gynecologists (ACOG) addresses critical global challenges in health care in low-resource settings in order to lower rates of maternal and newborn mortality and morbidity. To help address these issues, OGWH works to: 1) enhance team-based care, quality improvement and advocacy to improve women’s health care, 2) improve medical education, residency programs and continuing education, 3) share the best science and latest evidence-based guidelines on women’s health appropriate to low resource settings, and 4) develop and train health care teams to provide appropriate obstetric care, integrate family planning and immunizations and other health interventions. ACOG’s role in SMGL was to focus on a critical intervention to reduce PPH, addressing the third delay.

**PPH is largely a preventable and manageable condition. Still, of the 99% of all maternal deaths that occur in resource-poor settings, more than 30% of deaths are attributed to PPH.**

During the postpartum period women may develop serious, life-threatening complications. There is evidence that a large proportion of maternal and neonatal deaths occur during the postpartum period, with postpartum hemorrhage being a leading cause. In developing countries, mortality from PPH remains high, and recent studies have shown that PPH causes up to 60% of all maternal deaths. PPH is a leading cause of maternal mortality in Zambia, accounting for 34% of all maternal deaths in one study.

**PROVIDER VOICES**

**John Phiri**

**Role:** Enrolled Nurse  
**Location:** Mtwalo Health Centre, Lundazi

“Yes. We had one experience in which a UBT was inserted. We assessed the patient and followed regular PPH guidelines, however the patient continued to bleed. We inserted UBT and monitored patient. She was then referred to Lundazi district hospital and ultimately survived.”
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**Our Target Districts**

*Saving Mothers, Giving Life* is putting in place key interventions to improve maternal and newborn health across 16 districts.

*In the past three years, Saving Mothers, Giving Life and its partners have seen the maternal mortality ratio decline by 55% in target facilities in Zambia.*

Working hand-in-hand with the Zambian government, SMGL is focused on making high-quality, safe childbirth services available and accessible to women and their newborns. Programs concentrate on the critical period of labor, delivery and the first 48 hours postpartum. Zambia’s safe motherhood guidelines then recommend that women receive at least four antenatal checkups and one postnatal visit at 6 weeks.

*Although active management of the third stage of labor can prevent up to 60% of PPH cases, PPH continues to have a devastating impact on women in low-resource settings.*

Most cases of severe PPH can be prevented if the bleeding is controlled and managed immediately. Before introduction of UBT in Zambia, health facilities were using active management of the third stage of labor (AMTSL), which included:

1. Administration of a uterotonic soon after birth.
2. Delivery of the placenta by controlled cord traction.
3. Uterine massage.

*PHASE 1*
- Kalomo
- Zimba
- Mansa
- Chembe
- Nyimba
- Lundazi

*PHASE 2*
- Samfya
- Lunga
- Kabwe
- Choma
- Pemba
- Chipata
- Petauke
- Sinda
- Vubwi
- Mambwe

> Zambia district borders are changing; map represents approximate coverage.
Patients who continued to have excessive bleeding would then be referred to higher-level health facilities for surgery. However, referral and other options, such as oxytocin or bimanual compressions, sometimes fail to control severe PPH or are not available. In the very first few minutes of managing hemorrhage, providers have to be able to access interventions that can stop the bleeding as quickly as possible, before the mother goes into shock, and before her remaining blood loses the ability to clot. For this reason, effectively reducing death and injury due to PPH requires a combination of approaches and the adoption of second-line interventions that are appropriate for health facilities in low-resource settings. Such interventions could have additional benefits, like preventing unnecessary hysterectomies, allowing patients to be safely transferred to a referral hospital without excessively losing blood during transportation, and building workforce capacity at the health post or district level which strengthens the entire health system.

UBT has been recognized as a relatively easy-to-use and effective second-line option for managing severe PPH. The low-cost (less than $5) uterine balloon kit consists of a condom tied to a Foley catheter and inflated with clean water or normal saline through a syringe and one-way valve (see below).

UBT is standard of care in the United States, but the manufactured medical balloons used in U.S. hospitals are single-use and can cost over $400 apiece. The high cost made the intervention inaccessible in low-resources settings. The new condom based UBT is less elegant than the high-cost solution, but it has been exceedingly successful in managing hemorrhage when health providers are properly trained.

**PROVIDER VOICES**

**Richard Mazima**

*Role:* Enrolled Nurse/Midwife  
*Location:* Lukwizizi Health Post, Lundazi  

“There was one particular case in which I experienced UBT. It was at my health post. I am the only trained nurse in this facility. After delivery, the woman bled. A lot. I asked her to empty her bladder, and kept doing massages all in an effort to get the uterus to contract. I then called for help from the community health assistant (CHA) who brought the UBT kit. I worked with colleagues to prepare the kit, inserted the condom tamponade inside the uterus and put 3-4 mL of water. I asked the woman to remain calm and continuously monitored for decrease in bleeding. She sat with the UBT from 9:00 to 20:00. We checked her intermittently. On the final check, we realized she had stopped bleeding. We administered additional doses of folic acid and oxytocin. Her life was saved!”

**Loveness Chikumbi Kabwita**

*Role:* Senior Nursing Officer/Midwife  
*Location:* Livingstone Central Hospital  

“As a nurse supervisor, I wanted to have the knowledge to mentor others and provide guidance to staff. The hands-on training was the highlight of the training.”
SECTION TWO: ADVOCACY and TRAINING EFFORTS

Advocacy has proven to be a powerful way to create a positive, enabling policy environment in support of better health for all people. By informing the priorities of policymakers, advocacy catalyzes innovative solutions and implementation opportunities that have the ability to save lives and improve health outcomes. Effective advocacy and program implementation can be enhanced by collaboration with national OBGYN professional associations (PAs). In addition to national governments and civil society, PAs add an element of credibility and academic gravitas. In the arena of maternal and child care, OBGYN’s, midwives, and pediatricians should all be considered key partners for program implementation.

Before the ACOG-led project, midwives were not trained in UBT and implementation of UBT was not included in Zambia's larger PPH management action plan.

In Zambia, advocacy efforts to implement UBT included recruiting high-level political champions, like Dr. Christine Kaseba Sata, the former First Lady of the Republic of Zambia. Dr. Kaseba Sata was granted honorary Fellowship in ACOG in 2013 and was an early public supporter of SMGL’s maternal health programs in Zambia.

Building political will early, and answering technical and programmatic questions, helped assure local leaders that UBT would align with their national approach to PPH management.

During the technical meeting, it became clear that early intervention at the level of the health center would be essential to reducing deaths from PPH. Since care in the health centers is delivered by midwives, it would be essential to expand their scope of practice to include placement of UBT if successful reduction of severe morbidity and mortality from PPH were to be achieved. A position letter from Zambian Association of Gynaecologists and Obstetricians (ZAGO), recommending inclusion of midwives in the implementation of UBT training, was drafted following multiple presentations and meetings held in March 2015. ZAGO, with input from ACOG, submitted the letter to the Ministry of Health.

In May 2013, the then First Lady of Zambia spoke publicly in support of maternal health and SMGL.

In March 2015, a UBT meeting in Zambia was held to address technical and programmatic concerns.

In March 2015, after the technical meeting, partners advocated to include midwives in the training.

In July 2015, a 2-Day UBT Demonstration and Training was held.

In April 2016, a Training of Trainers for national scale-up was conducted.

**PROVIDER VOICES**

**Alice Tembo Banda**

*Role: Enrolled Nurse/Midwife*

*Location: Livingstone Central Hospital*

“I needed the skill considering that I had been working in maternity for a long time.”
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The Ministry’s decision to include midwives in UBT training required a change to their national policy, as well as close collaboration with several local partners, including the Midwives Association of Zambia (MAZ) and the U.S. Agency for International Development (USAID) Mission.

“With the recognition that hemorrhage was the leading cause of maternal deaths in Zambia, it was imperative that the SMGL partnership work closely with key stakeholders to assure the widespread availability and accessibility of options for successful prevention and treatment of this obstetric emergency. It was a privilege for ACOG to work closely with our professional society counterpart, ZAGO, as well as others, including the Ministry of Health, to help make the use of uterine balloon tamponade a more viable option for effectively managing postpartum hemorrhage throughout the country.”

Herbert B Peterson, MD, FACOG
Director, WHO Collaborating Center for Research Evidence for Sexual and Reproductive Health

The UBT implementation plan changed numerous times due to local needs, concerns about the procedure, budget, and the desire to see proof of effectiveness. However, ultimately effective stakeholder engagement and trainings led to integrating UBT into Zambia’s larger postpartum hemorrhage management action plan.

To scale up the use of UBT, CIDRZ, ACOG, and CDC worked together to conduct trainings for master trainers, Emergency Obstetric and Newborn Care (EmONC) trainers, district mentors and health care providers who all plan to use the intervention at their individual facilities.

In April 2016, ACOG fellow, Dr. Dipak Delvadia from Drexel University, successfully co-led a UBT training of trainers (TOT) at Lusaka and Livingstone. ACOG’s implementing partner, CIDRZ, was instrumental in providing on the ground coordination including recruitment of trainees, logistics management, and securing training venues. The training covered a refresher on postpartum hemorrhage, a specific UBT training, and an overview on shock management. It also included training on pedagogical elements of respectful-care, how to foster teamwork, effective facilitation skills, and supportive mentoring.

In total, 618 nurses, midwives, medical doctors and licentiates were trained in UBT in all SMGL-supported districts.

24 Obstetrician-Gynecologists (OBGYNs) and midwives were trained at Lusaka and an additional 17 were trained at Livingstone as master trainers. The response and engagement from participants was excellent. The training of midwives and OBGYNs together fostered a sense of teamwork and empowerment among the trainees. Pre and post scores demonstrated the midwives ability to master this skill as was expected. In fact, a pre-test and post-test showed that 100% of participants improved their scores. The policy shift to include midwives in UBT trainings was clearly beneficial.

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**PROVIDER VOICES**

**Francisco Lukhello**

*Role: Enrolled Nurse*
*Location: Katube Health Post, Lundazi*

“This course should be included at the training institutions so it is learned in school.”

**Casesar Simunyama**

*Role: Nurse/Midwife*
*Location: Lumezi Mission Hospital, Lundazi*

“When I am on duty, I attend to less cases of PPH. I am able to manage cases even before a doctor intervenes.”
SECTION THREE:
LESSONS LEARNED FROM IMPLEMENTATION

CIDRZ, under the auspices of the Centers for Disease Control and Prevention (CDC) and SMGL, and in partnership with ACOG, started implementing UBT as an intervention for treating women with PPH in July 2016.

With the use of UBT, empowered nurses and midwives are able to intervene rapidly in early PPH which improves outcomes. Not all cases of transfer or surgery will be avoided, but early intervention with this simple technique can reduce transfers to hospital, reduce the need for transfusion and ultimately save lives.

CIDRZ and Safe Motherhood 360 (SM360) have been conducting the training programs and have scaled up the program to all the participating districts. One of the lessons learned is that there are conditions under which the use of UBT may be challenging and not effective. This can be frustrating and can jeopardize its routine use in early PPH management because confidence is lost in the technique. We have also learned that refresher trainings, practice, and mentoring are important to successful deployment of UBT. UBT is not a perfect solution for all PPH and, with UBT systems crafted on-site, more issues can arise.

Some tricks to be sure to teach with UBT are:

- How to keep the string tied
- Use the two fingers at the opening of the cervix while filling up the balloon to keep the balloon in the right position
- The effectiveness of UBT greatly improves if it is used before the woman goes into shock

CIDRZ and SM360 have identified 103 district mentors to help scale up the initiative. The mentors will provide support for onsite training and monitor progress of UBT practice. Including the QI and Data Collection nurses in this process is also key to helping the training and implementation take hold throughout the facilities.

Finally, putting together UBT materials in a kit that is ready to go and easily accessible makes a difference in the utilization of the technique. Learning that, CIDRZ made sure that supplies were packaged and distributed widely to allow providers quick access to employing the UBT intervention.

SM360 will continue to provide onsite mentorship in Zambia even after this SMGL effort has ended.

PROVIDER VOICES

Mulenga Magala
Role: Enrolled Nurse
Location: Nklanga Health Centre, Lundazi

“My district had a high number of maternal deaths due to PPH. The training gives me skills to manage PPH at my facility and thus contribute to the reduction of maternal deaths due to this condition.”
CONCLUSION

The experience in Zambia has lessons to be gleaned and used as teaching opportunities for other countries hoping to implement interventions, such as UBT, on a national scale.

First and foremost, it is critical to gain political support and commitment from the Ministry of Health and align the medical intervention with the national guidelines for managing PPH. Additionally, the intervention should have clinical evidence, be relevant to the local context, have practical use, and be taught in a manner that can be understood by various healthcare providers.

Projects that include multiple implementing partners may lead to challenges. Sometimes it is not possible to satisfy all stakeholders, but clear and open communication is a critical component to successful programs — including implementation of UBT. In the initial phase of this project, the UBT implementation plan changed numerous times due to local needs, concerns about the procedure, budget, and the desire to see proof of effectiveness. Once all stakeholders were engaged and the gap in information sharing was remedied, all partners reaped positive outcomes in terms of quality and reach of UBT trainings.

The takeaway message from this project is that low-cost solutions, when well implemented using cascade trainings and mentoring, can be scaled up, and have a profound impact on saving women’s lives, reducing emergency surgery, and strengthening the capacity of the providers throughout the health system. Using UBT has saved women’s lives in what is considered the third delay in preventing maternal mortality. Overcoming the third delay requires that a woman in critical clinical state reaches a health facility with an adequately trained provider. The lesson here is that training is not only essential, but that a whole suite of techniques should be made available to all levels of providers, so that the initial intervention can be the lifesaving intervention. This cascade of UBT training for nurses, midwives, medical licentiates and medical doctors to use UBT is an important technique to manage postpartum hemorrhage and is worthy of replication in all settings.

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