

# Scaling-up Uterine Balloon Tamponade to Control Severe PPH in Kenya

E - Newsletter Issue  
January 2018

8



## Editorial



**W**elcome to the 8th edition of the CICF newsletter, in which we explore innovative responses to addressing post-partum haemorrhage (PPH) in Kenya.

Excessive bleeding after childbirth, or PPH, is the leading direct cause of maternal death around the world. In Kenya, it causes about one in every three maternal deaths – the majority of which could be prevented through timely and appropriate management. Despite proven and effective interventions, PPH continues to claim the lives of too many mothers, as the result of delayed health seeking behaviour, delayed emergency care, lack of health personnel skilled in the use of both surgical and non-surgical interventions, or the poor availability of necessary medical supplies and equipment.

In low resources settings where health systems are struggling to deliver basic essential care, some promising innovations are presenting lifesaving PPH solutions for the mothers who need them most. If taken to scale, these approaches could have greater impact on reducing maternal mortality. In support of the Government of Kenya's call to accelerate the reduction of preventable maternal deaths, the County Innovation Challenge Fund (CICF) is investing in the design and delivery of innovative interventions, products, processes, services, technologies or ideas to catalyze change.

In this edition of the CICF newsletter, we highlight one such innovation that is improving PPH management using a low-cost condom balloon tamponade. Also featured are two other relevant solutions: new recommendations by WHO on the use of tranexamic acid for PPH, and the use of clinical audit to enhance adherence to PPH management protocols at Kenyatta National Hospital.

Enjoy the reading, and stay in touch with us at [info@mnhcicf.org](mailto:info@mnhcicf.org)

CICF Technical Team

### Tranexamic acid: a PPH game-changer?

The World Health Organization recently updated its global recommendations for the treatment of post-partum haemorrhage. This new guidance integrates tranexamic acid (TXA) as a mainstay of emergency obstetric care.

#### What is TXA?

TXA is a antifibrinolytic agent, making it fundamentally different than standard PPH drugs, which are uterotonics (like oxytocin). TXA works by slowing the breakdown of blood clots, while oxytocin works by helping the uterus to contract.

#### When should TXA be used?

WHO now strongly recommends the early use of intravenous TXA (within 3 hours of birth) in addition to standard care for women with clinically-diagnosed PPH following vaginal birth or caesarean section. Tranexamic acid should be used in all cases of PPH, regardless of whether the bleeding is thought to be due to trauma or uterine atony.

#### What evidence is this recommendation based on?

The new global guidance is based on the largest trial of tranexamic acid for PPH treatment conducted to date, called the World Maternal Antifibrinolytic (WOMAN) trial. Results from the WOMAN trial were published in April 2017 in the Lancet. The authors concluded that TXA reduces death due to bleeding in women with PPH with no adverse effects, and should be given as soon as possible after bleeding starts.

#### What does this mean for Kenya?

The Kenyan Government already recognizes TXA as a promising innovation for PPH management. Kenya's Implementation Plan for Scaling up Effective Interventions in MNH (2016), lists TXA as a useful commodity for preventing cases of PPH due to factors other than uterine atony, where routine drugs will not be effective.

Now the responsibility sits with all of Kenya's 47 counties to take up WHO's challenge: 'All health systems, regardless of their level of resources, need to recognise that TXA is a life-saving intervention, which should be made readily available for PPH management wherever emergency obstetric care is provided.'



## What is UBT?

Uterine Balloon Tamponade (UBT) is a medical device proven to be effective in managing PPH cases that are unresponsive to uterotonics and other primary management, or where other treatments are not available. The UBT uses a balloon that is inserted into the uterine cavity and inflated to achieve a tamponade effect, putting pressure on the uterine wall to arrest bleeding. However, UBT technology is not accessible in many developing countries, due to its high cost of roughly \$400 per device.

In 2012, a team of innovators from Massachusetts General Hospital (MGH) developed an ultra-low cost UBT kit that costs less than \$5. It is assembled using easily available local components: a male latex condom tied to a catheter that is inflated with water through a syringe and one-way valve. The award-winning Every Second Matters for Mothers and Babies – Uterine Balloon Tamponade (ESM-UBT™) package includes a 3-hour simulation based training, ESM-UBT kits, pocket checklists, delivery room wall charts and reference manuals. Field data shows that ESM-UBT has a high success rate: persistent bleeding after birth can be successfully controlled in 98% of cases. Moreover, ESM-UBT reduces the likelihood of hysterectomy, infertility and blood transfusion.

## From Evidence to Scale

With evidence that ESM-UBT is an effective method to save women's lives, MGH is partnering with KMET, the Ministry of Health, and County Health Management Teams to scale-up use of ESM-UBT in Kenya. After a successful pilot, ESM-UBT has been rolled out in 15 priority counties: four of these with CICF funding (Turkana, Garissa, Kakamega and Bungoma).

The scale-up process has followed a journey through several steps, including:

- Consultation and engagement with the Ministry of Health at all levels
- Local assembly of ESM-UBT kits and establishing local distribution channels
- Hands-on training with health care workers, mentorship and supervision
- Data collection, evidence generation and advocacy
- Integration of UBT in national guidelines for PPH management.

## UBT Saves a Teenage Mother in Kakamega

Lilian Musalia, a nurse at Bukura Health Center in Kakamega County, was at home watching TV at night with her husband on New Year's Eve. At 11 pm she received a WhatsApp message from one of her colleagues that was on night duty:

"I feel like screaming, I have a mother with PPH and I am all alone with the watchman," the message read.

This was happening in the background of the protracted 2016 Doctor's strike that saw several patients die due to lack of specialized services, including mothers in need of emergency obstetric care.

Lilian rushed out of her house on foot to the health centre that was 20 minutes away. "The patient's bed was soaked in blood and my colleague looked dazed by the unfolding events. I knew we had to act fast," she recalls.

## Simple life-saver to stop post-partum bleeding

ESM-UBT kit assembled from items common at clinics including a condom, catheter and syringe can be used to save the lives of women with uncontrolled bleeding after giving birth.



### Excessive bleeding

is one of the major causes of maternal deaths in Kenya



### 8611 ESM kits

have been assembled locally so far



### Over 4200 health providers

across Kenya have been trained on how to use the kit



### 350 kits

have been used, with a 98% success rate



### ESM-UBT rolled out in 15 counties

4 of these supported by CICF (Garissa, Turkana, Bungoma and Kakamega)





The patient named Melisa, a 17-year-old, had delivered at 2 pm earlier that day, and experienced heavy bleeding shortly afterwards (PPH). She had been given oxytocin, a first line treatment for PPH, but was still actively bleeding.

To establish the cause of bleeding, Lilian swiftly examined the client for tears on the vagina, removed blood clots from the uterus and massaged the womb. She says she realized the client was experiencing PPH due to failure of the uterus to contract.

*“I knew UBT was the only solution. We had two UBTs in the drawer in the maternity room so I began assembling one. I inserted the balloon and miraculously the bleeding stopped after filling it with only one litre of water,”* recounts Lilian.

Lilian left the facility at 2 am having arranged for referral of the client to Mukumu Mission Hospital where she was transfused with two units of blood. The UBT was removed at 6 am and the bleeding had completely stopped.

34% of maternal deaths in Kenya are attributed to PPH. Inability of the uterus to contract like Melisa’s accounts for 74% of these cases. Experts warn that if not managed, a healthy woman can die from PPH within two hours.

*“I had lost so much blood I even lost consciousness at some point. I heard the nurse say that I was bleeding too much and she didn’t know what to do. When the other nurse came in, she put a condom in me which stopped the bleeding.”*

-Melisa Akinyi, PPH survivor



34% of maternal deaths in Kenya are attributed to PPH. Inability of the uterus to contract like Melisa’s accounts for 74% of these cases. Experts warn that if not managed, a healthy woman can die from PPH within two hours.

### Garissa Leads in UBT Scale-up



*“I first learnt about UBT in 2007 in an international training, but there was no practical session. So the idea did not pick up until 2012, when UNICEF and KMET provided training and supplied kits.*

*From there it picked momentum. Mothers started getting saved; staff realized the effect of UBT and demand became high. We discussed as a county the need for UBT and decided to purchase and include it in our normal practice. What has influenced demand is the strong advocacy we put on the ground to get buy-in from our managers and the political leadership; you know if you mess up there whatever you do down here will not work. We also succeeded in getting a buy-in from the providers who are creating the demand. If they don’t agree on utilization you don’t get uptake.”*

- Dr. Siyat Gure, Garissa County Director of Health



## Quality Improvement for PPH: KNH's Experience with Clinical Audit

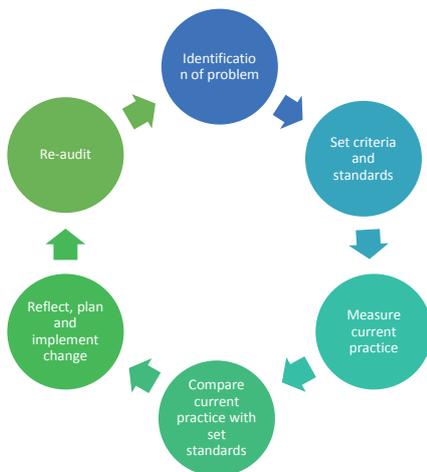
Kenyatta National Hospital (KNH) is Kenya's largest public referral facility. It offers emergency services to clients from all over Kenya, from all walks of life. The hospital has a total of 6,000 staff, 3,500 of whom are nurses. In 2016 the hospital conducted over 4,000 deliveries. Positioned at the centre of the country's health system, KNH's responsibilities go beyond service delivery, to educating the next generation of health workers, and modeling quality for other facilities to learn from. KNH was chosen for inclusion in this newsletter to tell their PPH story.

As a relatively common obstetric emergency, global and national standards, guidelines and protocols for PPH are well documented. PPH management includes the rapid recognition, resuscitation, and restoration of circulating blood volume, and the simultaneous identification and treatment of the cause of bleeding. This requires more than one smart clinician: it demands teamwork and an effective multi-disciplinary approach so that protocols are quickly and correctly deployed.

### Why a PPH Audit at KNH?

Adherence to set PPH guidelines has been shown to ensure early, aggressive and coordinated intervention by health care professionals, and morbidity and mortality associated with PPH can be averted when there is critical assessment, early referral and active resuscitation by skilled health care workers. Auditing a team's use of these protocols is important to recognize and rectify any gaps in clinical care. In 2016, KNH embarked on a clinical audit of PPH cases, to improve quality of care.

### The Audit Process



The audit process for PPH at Kenyatta started with setting 8 criteria and standards for measurement. These included calling for help when a woman's condition is worsening from PPH, specific standards for routine assessment and the clinical management of PPH, and measurable requirements for health workers to communicate with the patient and her family.

After the assessment criteria were set, two rounds of data collection were undertaken (baseline and re-audit). Data was collected from clients, patient files, observation, blood transfusion unit registers, admission registers, maternity registers, and members of staff (doctors, midwives, students, laboratory staff) who attended to the client. There was a 7-month gap between the two data collection points, while improvements were made to clinical care. A range of interventions were implemented to improve PPH management, such as provision of standard operating procedures, dissemination of baseline audit findings, supportive supervision, and hands-on refresher training.

### What Changed?

The audit team found a 13% improvement in overall performance of PPH management from the baseline findings to the re-audit. Specific improvements were made in:

- Correct, routine management of stable patients (assessing temperature, documenting blood loss);
- Identification and management of uterine atony;
- Provision of information to clients about what was happening to them and what was being done; and
- A reduction in the use of blood transfusion and hysterectomy.

These changes in clinical care were a pathway to larger improvements, particularly a reduction in the number of obstetric emergency cases between the two periods:

### The PPH Audit Team



Teamwork was so important for the success of this audit. All staff from all the departments, right from maternity, to the pharmacy and management were involved; and they were all informed on the criteria and standards. That meant that everybody played their part, and we saw improvement in processes and outcomes, not only for PPH, but all the other areas such as maternity, labour, and other obstetric emergencies.

- Rahel Mukhwana, PPH Audit Team Member

Supported by:



In collaboration:

