



Scaling Life-Saving Interventions Faster *Case Studies Series*

Every Second Matters for Mothers and Babies™—

Uterine Balloon Tamponade (ESM-UBT)

Every year, an estimated 130,000 women die from postpartum hemorrhage—uncontrolled blood loss from mothers during birth. Another 2.6 million women are left disabled. Use of uterotonic drugs or surgery immediately after delivery can help prevent mortality and morbidity from this complication, but these interventions are often inaccessible in low-resource settings. This case study presents an overview of key elements that determined the pace of introduction and uptake of the Every Second Matters for Mothers and Babies™-Uterine Balloon Tamponade. This simple and inexpensive life-saving intervention, fashioned from a condom attached to a Foley catheter, was designed for use in low-resource settings.

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This case study is the first in a series that explores pathways and important factors that contribute to the development and uptake of global health interventions—from proof of concept to scale-up.

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Every Second Matters for Mothers and Babies™—
Uterine Balloon Tamponade (ESM-UBT) is a low-cost device that stops uncontrolled blood loss from mothers during birth.



GLOBAL BURDEN: 14 MILLION POST-PARTUM HEMORRHAGE CASES ANNUALLY (2018)⁴

IDEATION TO 1ST COUNTRY LAUNCH: ~4 YEARS

NUMBER OF COUNTRIES WHERE INTERVENTION HAS BEEN INTRODUCED: ~22 (2018)¹¹

NUMBER OF DEVICES THAT HAVE BEEN USED GLOBALLY: 670¹⁴



Postpartum hemorrhage (PPH), severe and uncontrolled bleeding after childbirth, is the most common cause of maternal mortality accounting for an estimated 130,000 maternal deaths each year.¹ Another 2.6 million women, who experience PPH, are left disabled.² Many of these mortalities and morbidities (94%) occur in contexts where poverty is endemic and as the result of inadequate healthcare and resources.³

In 2012, the World Health Organization (WHO) put out a series of updated prevention and treatment guidelines for PPH. The recommendations called for uterotonics (drugs to induce contractions) as well as other therapeutic options, as a first line of treatment; a second line of treatment included surgical interventions and uterine balloon tamponades (UBTs).⁴ In the developing world, uterotonics

and surgical interventions are often inaccessible. UBTs can cost upwards of \$400 each, a steep price for a device that can be used only once.⁵

In 2009, a team from Massachusetts General Hospital (MGH) began to develop a low-cost UBT for the developing world. Borrowing from “Sayeba’s Method” and other UBT designs, they developed the Every Second Matters for Mothers and Babies™-Uterine Balloon Tamponade (ESM-UBT).⁶ This device costs less than \$5 USD and is fashioned from a condom attached to a Foley catheter. When a woman is experiencing uncontrolled PPH, the ESM-UBT is inserted into the uterus. The condom/balloon is filled with water, applies pressure to the uterine wall, and stops bleeding. This life-saving technology can be used by lay midwives, community health workers (CHW), health aides in non-surgical health facilities, and even at home.⁷

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In 2012, the MGH team conducted preliminary research into the feasibility of using UBTs in South Sudan. This study provided evidence to show that training CHWs on UBTs was feasible and effective.⁸ In 2013, the MGH team received a grant from the Saving Lives at Birth Grand Challenge that enabled them to introduce the ESM-UBT in other low-resource settings. Additionally, with the help of their partners (ministries of health, USAID, PATH), they published a study in 2015 that demonstrated the safety and effectiveness of the ESM-UBT in stopping hemorrhage.⁹ Research shows an overall survival rate of 97%, rising to 100% if the ESM-UBT is placed before a woman goes into advanced shock.^{11,12}

By 2017, more than 20 countries in Africa and Asia had implemented the device. Despite the rapid uptake, challenges remain in scaling the ESM-UBT's use. First, UBTs are a second line of treatment and might therefore not be the priority for care. Additionally, although the WHO encourages the use of UBTs, the recommendation is described as weak with very low-quality evidence. It has taken eight years for the WHO to prioritize an update to its recommendations on UBTs, perhaps due to the changing evidence for the safety and effectiveness of these devices.¹³ Another challenge is the need to put together an ESM-UBT before use, unlike the Ellavi UBT, which is preassembled for ease of use. Other challenges to uptake are circumstantial. For example, Sierra Leone was ready to implement a national program to scale-up the use of the device when the Ebola epidemic hit. This forced the Ministry of Health to funnel funds slated for the ESM-UBT program towards the fight against Ebola.⁷

Overall the ESM-UBT has the potential to save lives, especially in low-resource settings. More of an effort should be made to ensure that the device is available in places where it is needed the most.

KEY INSIGHTS

- WHO recommendations are guideposts for many countries. Devices, such as the ESM-UBT, may not be scaling quickly enough due to delays in updates to WHO's recommendations. If WHO continues to update its PPH guidelines only every 5 years, we may not see updates to UBT recommendations until 2022—10 years after the device was first recommended.
- Life-saving interventions should be available in lower level healthcare settings and community-based care delivery programs. Around the world, millions of women give birth at home or in basic health centers where these interventions may be hard to access. A key feature of the ESM-UBT is its accessibility at lower level health facilities, enabling greater life-saving impact.
- New mechanisms to invest in innovations from the global South are needed. Sayeba Akhter, a physician in Bangladesh, developed the first UBT using readily available hospital items. The MGH team used this idea as inspiration for the ESM-UBT. The mechanisms to attain funding that are commonplace favor those in the global North who have teams dedicated to grant sourcing and writing.

ABOUT US

The Launch and Scale Speedometer, led by the Duke Global Health Innovation Center, seeks to understand key factors for successful and fast launch and scale of global health interventions to help save lives.

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