

## Balloon Tamponade

### Health need

Postpartum hemorrhage (PPH) in developing countries continues to be the single most common cause of maternal morbidity and mortality, accounting for approximately 25 percent of maternal deaths globally. Fourteen million cases of PPH occur each year. Deaths and serious complications from PPH are most likely when women do not have access to a skilled attendant at delivery, where referral systems are inadequate, and where emergency obstetric care is insufficient. The consequences of PPH are devastating to families and costly for health systems. Risk of death is greatest for women who are anemic or have other underlying health problems that complicate the ability to deal with blood loss. In most cases, PPH can be treated if the bleeding is controlled and managed immediately. In low-resource settings that are often not equipped for surgery or blood transfusions, other intervention options are urgently needed.

### Technology solution

A uterine balloon tamponade (UBT) is a minimally invasive intervention that can effectively treat and manage severe PPH. When inserted into the uterus and slowly filled with water, it exerts pressure on the uterus until the bleeding stops. It works rapidly and effectively, reducing the need for risky and costly surgical interventions and blood transfusions. It also serves a critical role in reducing blood loss until the woman can be transported to a facility that can provide surgical management and other treatment options. UBTs can fill a critical need by providing a simple, rapid, and effective method to manage PPH. The World Health Organization, the International Federation of Gynecology and Obstetrics, and the International Confederation of Midwives recognize the UBT as a method that could have significant impact on the management of intractable PPH. While widely used in developed countries, commercially available UBTs are prohibitively expensive for developing-country maternal health programs. PATH's solution is to develop and advance a lower-cost UBT that could be used by trained health workers in low-resource settings. A lower-cost device would allow for wider access to and use of this intervention with the potential to significantly impact the mortality and morbidity rates of women suffering from PPH.

### Current status and results

Recently, PATH completed a situational analysis to determine current practices using UBTs for PPH in developing countries, an analysis of optimal manufacturing approaches, and an assessment of user needs and requirements. Study results provided information on usage patterns, cost issues, availability, and acceptability. The results also informed the design and development of a proof-of-concept prototype. Based on several design and manufacturing feasibility assessments, we will next finalize the UBT design and work with manufacturing partners for production in India and South Africa. Concurrently, to expand access to this lifesaving device, we are collaborating with Massachusetts General Hospital and ministries of health in Ghana and Kenya to introduce UBTs in rural, primary care maternal health clinics. With country-level interest and demand for UBTs expanding, we are now seeking funding to increase access of UBTs for additional countries.



PATH/Patrick McKern

**PATH's prototype design of a low-cost uterine balloon tamponade.**

**“The tamponade... could be particularly effective in reducing the maternal mortality rates of low-resource countries, as it can be performed in small centers with minimal facilities. WHO considers that this intervention can be highly effective; it should be rigorously evaluated as a priority.”**

World Health Organization consulting group, 2008.

### Availability

For more information regarding this project, contact Elizabeth Abu-Haydar at [eabuhaydar@path.org](mailto:eabuhaydar@path.org).

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