

Innovative solutions saving mothers' lives

Oxytocin in the Uniject™ device

Postpartum hemorrhage (PPH), or severe bleeding caused by childbirth, is the leading cause of maternal death worldwide, taking the lives of approximately 150,000 women a year. While prompt medical care in developed countries has reduced the rates of death from PPH, it continues to have a devastating impact on women in developing countries. In places where home birth is common and the closest hospital is hours away, there is often no feasible way to transport a woman to medical care in time to save her life. In sub-Saharan Africa and Indonesia the numbers are staggering: respectively, 34 and 47 percent of maternal deaths are due to PPH. Women are not the only ones suffering. According to the World Health Organization, newborns without mothers are ten times more likely to die within two years than newborns whose mothers survive.

Solutions within reach

While these figures are shocking, there are currently many proven and cost effective solutions to save mothers' lives. These programs are tested and effective and need only to be scaled up to reach larger populations. Oxytocin, a hormone that causes the uterus to contract, can significantly reduce death from PPH. Because many women give birth at home, an injection of oxytocin has to be simple enough for administration by a village health worker or midwife outside of hospital facilities. The Uniject autodisable injection device fits this description: the prefilled syringe ensures that an accurate dose of medicine is delivered to a patient with minimal preparation and minimum waste. These qualities can allow medicine to be delivered in emergency situations and remote locations.

For less than one dollar per dose, oxytocin in the Uniject device could help eliminate at least half of PPH deaths if mass produced and given as part of a field-proven intervention, potentially saving thousands of women's lives. PATH



Uniject is a trademark of BD.

Success stories

Increasing access to oxytocin in Mali

In Mali, 1 out of every 15 deaths among women each year is due to pregnancy-related causes, compared to 1 in 4,800 deaths among women in the United States. As part of a pilot study, PATH distributed 15,000 doses of oxytocin in the Uniject device in Mali in 2007.



PATH/Monique Berlier

Previously, administration of oxytocin was often too complicated to reach many who needed it. Health workers had to break open small glass vials, open a sterile syringe, and measure a correct dose of the drug—for some Malian midwifery assistants ("matrones") this may be a difficult task. A dose of oxytocin was sometimes packaged in two separate vials, leading some providers to unknowingly administer ineffective half-doses.

Using oxytocin in the Uniject device eased preparation and conserved supplies. With a time-temperature indicator included in the package, matrones could immediately see if the package had been exposed to heat levels that would damage the oxytocin on its trip to the clinic.

In Mali, the reaction was overwhelmingly positive: matrones, midwives, and mothers alike praised the benefits of oxytocin in the Uniject device. With future financing for this simple and cost-effective device, women in poor settings across the globe can have access to basic lifesaving medicine.

designed and developed the Uniject™ device with funds from the US Agency for International Development (USAID) through PATH's longstanding HealthTech program and then licensed the device to BD Pharmaceutical Systems, one of the world's leading syringe manufacturers. A time-temperature indicator (TTI) is included on the Uniject™ packaging so that health workers can easily ensure that the oxytocin has not been damaged by heat exposure before administering it to women. The TTI represents the novel application of another PATH technology—vaccine vial monitors—originally developed to provide more flexibility for field transport and storage of vaccines.

Where are we now?

In October 2008, Instituto Biológico Argentino (BIOL), an Argentine pharmaceutical manufacturer collaborating with PATH, received regulatory approval to make oxytocin in the Uniject™ device commercially available in Argentina. Within a few days of the official launch in August 2009, BIOL received its first order from a local hospital—a significant milestone culminating four years of collaborative product development by BIOL and PATH. Beyond Argentina, BIOL has already received regulatory approval to make oxytocin in the Uniject™ device commercially available in Guatemala. BIOL has registrations pending in Nicaragua and Honduras.

With continued technical assistance from PATH, BIOL is preparing for World Health Organization prequalification of oxytocin in the Uniject™ device. When completed, this will allow BIOL to supply the product to United Nations agencies such as United Nations Children's Fund (UNICEF) and United Nations Population Fund (UNFPA).

Gland Pharma, an Indian pharmaceutical manufacturer, is also collaborating with BD Pharmaceutical Systems and PATH to make oxytocin available in the Uniject™ device. Pilot introductions and evaluations of the BIOL and Gland Pharma products are planned in Guatemala and Argentina in 2009, and South Africa, Nicaragua, India, and Ghana in 2010, with future work also planned in Honduras.



PATHTMike Wang

About HealthTech

The purpose of the **HealthTech program**, funded by USAID, is to identify health needs, then to adapt, design, develop, and advance appropriate and affordable health, family planning, and nutrition technology solutions. For 20 years, often in collaboration with the private sector, HealthTech has served as a catalyst for advancing innovative technologies. The development of Uniject is an example; HealthTech now works with pharmaceutical and vaccine manufacturers to fill it with vaccines, antibiotics, and injectable contraceptives.

About POPPHI

The **Prevention of Postpartum Hemorrhage Initiative (POPPHI)** is a USAID-funded, five-year project focusing on the reduction of postpartum hemorrhage, the single largest cause of maternal deaths worldwide.

The POPPHI Project is led by PATH and includes four partners: RTI International, EngenderHealth, the International Federation of Gynecology and Obstetrics, and the International Confederation of Midwives.



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POPPHI
Prevention of Postpartum Hemorrhage Initiative

PATH is an international nonprofit organization that creates sustainable, culturally relevant solutions, enabling communities worldwide to break longstanding cycles of poor health. By collaborating with diverse public- and private-sector partners, PATH helps provide appropriate health technologies and vital strategies that change the way people think and act. PATH's work improves global health and well-being.



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