

## From Research to National Scale-Up: Expanding Uterotonic Coverage for Postpartum Hemorrhage Prevention in Rural Senegal

Excessive bleeding after childbirth - postpartum hemorrhage (PPH) - is a leading cause of maternal death, accounting for close to a quarter of all maternal deaths worldwide. Gynuity Health Projects is working to explore ways to improve options for PPH management globally and has collaborated with partners in Senegal to address uterotonic coverage in this West African country.

### Community Trial Comparing Oral Misoprostol and Oxytocin in Uniject™ for PPH Prevention

Medicines that cause the uterus to contract - uterotonics - have been shown to reduce blood loss when taken immediately after childbirth and are widely recommended for PPH prevention. Lack of skilled personnel and adequate cool storage make standard injectable oxytocin, considered the gold standard for PPH prevention, difficult to access outside health facilities, especially in hard-to-reach areas with few resources.

To address this gap, Gynuity partnered with ChildFund Senegal and Senegal's Ministry of Health and Social Action (MOH) to conduct a cluster-randomized controlled trial comparing misoprostol (a heat-stable tablet, 600mcg oral) and oxytocin in Uniject™ (a pre-filled, single-dose, non-reusable injection, 10 IU), both deemed viable alternatives to standard injectable oxytocin in community settings.

*Matrones* (auxiliary midwives) administered either oral misoprostol tablets or oxytocin by pre-loaded injection to over 1,400 women giving birth at village health huts in three rural districts of Senegal. Before the study, these volunteer community health workers commonly attended deliveries but were not formally recognized by the Senegalese MOH, had no access to uterotonics, and were not authorized to administer tablets or give injections for PPH prevention.

The study found neither oxytocin nor misoprostol was significantly better than the other and both drugs were safe and efficacious when delivered by *matrones*.



Misoprostol proved to be more appropriate in this environment due to ease of use, higher acceptability, and fewer logistic constraints. Oxytocin in Uniject™ (at the time of writing, unavailable internationally for procurement) posed some challenges. Additional measures were needed to maintain the cold chain for oxytocin and monthly monitoring visits to health huts confirmed that a third of the Uniject™ devices supplied had to be replaced because they had expired prior to use.

A follow-up study comparing misoprostol and oxytocin in Uniject™ to the standard of care for community PPH management (referral only) found misoprostol to be more cost-effective in a rural health hut setting.

### National PPH Prevention Program using Misoprostol Dispensed by Matrones during Health Hut Deliveries

Based on the study findings, a committee appointed by Senegal's MOH recommended that misoprostol be made available to *matrones* for prevention of PPH in health huts nationwide.

This PPH prevention strategy formed part of the MOH's national plan developed in response to challenges faced in providing services at the community level where many births continue to take place. Misoprostol had been registered and available in-country since 2013 and was included on the national essential medicines list in 2014, making it easier to introduce for this purpose.

A national program was established to train *matrones* and supervisory staff as well as members of community watch groups whose role is to identify pregnant women and provide them with information on safe delivery. Health huts were supplied with nationally-procured misoprostol. By 2016, the program had been introduced into 979 health huts in all 14 regions of the country.

## Assessment of the National Community PPH Prevention Program Using Misoprostol

To evaluate progress, in July 2016, ChildFund Senegal and Gynuity conducted a review of the national expansion program, assessing 72 health huts randomly selected from 341 health huts that had offered misoprostol for PPH prevention for more than 12 months.

Information was collected on service delivery and coverage, misoprostol supply, and staffing of the health huts. Interviews were conducted with a) *matrones* to evaluate provider knowledge, drug administration and delivery documentation; b) women who had recently given birth to understand their experience and perceived quality of service; and c) key community members to assess the role of community watch groups in the PPH prevention strategy.

### Main Assessment Findings

- Among the 1,073 recently-delivered women who were followed up in the health hut coverage areas under review, 965 gave birth at a health hut assisted by a *matrone*.
- Overall, 54% of the women delivering at a health hut received misoprostol prophylaxis from the birth attendant. Among health huts without any stock-outs, 78% of women received misoprostol prophylaxis.
- Over a third of the health huts (35%) experienced stock-outs in the preceding 12 months, suggesting a need for better forecasting, more rapid re-supply and, more generally, a critical look at supply chain management.
- Knowledge was high among the 76 *matrones* interviewed. All (100%) knew the correct misoprostol regimen for PPH prevention, most (82%) knew how long (two hours) to monitor a woman following administration of the medication, and nearly all (95%) knew when to refer a woman.
- Among the 105 recently-delivered women interviewed, many (69%) knew about the existence of the program and the majority (90%) expressed high levels of satisfaction with the services they received when giving birth at a health hut.

### Implications for Senegal's Program

The findings show that the introduction of this community PPH prevention program resulted in expanded uterotonic coverage, reaching a population that would previously not have had access to this service. Although uterotonic coverage was higher in health huts that did not experience stock-outs, misoprostol was not always used for PPH prophylaxis, even when stocks were available and despite very good knowledge of how to use the medicine among the *matrones* interviewed.

### Lessons Learned and Looking Ahead

- **Addressing the logistical environment and medication quality** are important factors when considering community approaches to PPH management.
- **Expanding program intervention to where women deliver** by dispensing misoprostol in advance to pregnant women for self-use after childbirth can further extend uterotonic coverage.
- **PPH is rare but strategies to act quickly are critical** and consideration should be given to training lower level personnel on treatment options for PPH (including treatment with misoprostol), especially in remote places that rely on referral

### Additional Reading

- Diop et al. Lancet Global Health (2016). [Oxytocin via Uniject \(a pre-filled single-use injection\) versus oral misoprostol for prevention of postpartum haemorrhage at the community level: a cluster-randomised controlled trial](#)
- Vlassoff et al. International Journal of Gynecology and Obstetrics (2016). [Cost-effectiveness of two interventions for the prevention of postpartum hemorrhage in Senegal](#)
- Weeks et al. BMC Pregnancy and Childbirth (2015). [The MamaMiso study of self-administered misoprostol to prevent bleeding after childbirth in rural Uganda: a community-based, placebo-controlled randomised trial](#)

- Gynuity Health Projects (2015). [Instructions for Use: Misoprostol for the Prevention of Postpartum Hemorrhage](#)
- Gynuity Health Projects (2017). [Instructions for Use: Misoprostol for the Treatment of Postpartum Hemorrhage](#)
- Ministry of Health and Social Action, Senegal. [Plan Stratégique National de Santé Communautaire, 2014-2018](#) (National Strategic Plan for Community Health, 2014-2018). Available in French only.

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