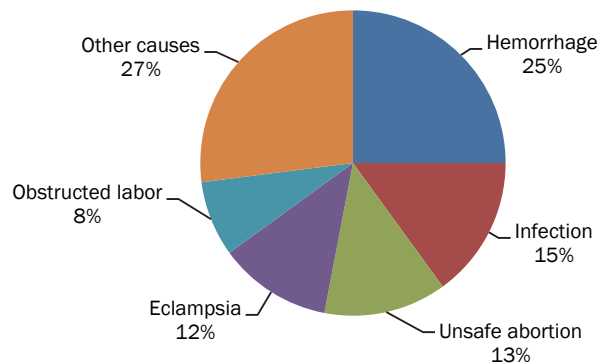


PREVENTION OF POSTPARTUM HEMORRHAGE AT HOME BIRTH

ADVANCE DISTRIBUTION OF MISOPROSTOL FOR SELF-ADMINISTRATION FOLLOWING HOMEBIRTH

Postpartum hemorrhage (PPH) is the leading cause of maternal death around the world. Every seven minutes, a woman dies of PPH¹. Approximately 25% of all maternal deaths are from PPH, with the greatest burden of disease in the developing world.^{2,3} Women who survive PPH suffer from anemia and other complications and are exposed to blood transfusions and their associated risks (such as transfusion reactions or infection with HIV or hepatitis). Continued global action to comprehensively address PPH is a public health imperative.



Source: World Health Organization. 2011

BEST PRACTICE

Use of a uterotonic drug is a key component of any PPH prevention strategy. All women—whether they give birth in a facility or at home—should have access to a uterotonic. Because it is possible for women to die within two hours from PPH, interventions to prevent PPH need to be available in facilities and at home. National PPH reduction strategies, which have at their core the promotion of facility-based births and provision of high-quality emergency obstetric and newborn care, should be mindful of where births occur and how to maximize access to a uterotonic in each of those settings.

Routine prophylactic uterotonic use immediately after birth—either in isolation or as part of Active Management of the Third Stage of Labor (AMTSL)*—causes the uterus to contract firmly, thereby decreasing the risk of postpartum bleeding. A recent multi-centered World Health Organization (WHO) clinical trial⁴ concluded that the administration of the uterotonic was the most important component of AMTSL. Thus, in 2012, WHO updated its recommendations to put greater emphasis on **uterotonic use at every birth**, with oxytocin remaining the uterotonic drug of choice. The use of oxytocin, however, is not always feasible in low-resource settings, where cool storage, sterile equipment for injection and a skilled provider may not routinely be available. As well, improper storage of oxytocin can reduce its potency and limit its effectiveness.

KEY PPH PREVENTION INTERVENTIONS (2012)

Facility-based births:

- Active Management of Third Stage of Labor (AMTSL)—especially oxytocin 10IU IM immediately after birth

Community-based births:

- Promotion of facility-based birth
- Education about PPH
- **Advance distribution of misoprostol to women for self-administration after birth**

When conditions for oxytocin use cannot be met, misoprostol is recommended as safe and effective for prevention of PPH.⁵ Misoprostol is an oral uterotonic that does not require refrigeration or administration by a skilled attendant. In numerous randomized controlled trials, misoprostol has been associated with significant decreases in the rate of acute PPH, including severe hemorrhage of >1000mL, which is most often fatal.^{6,7,8,9,10} In 2011, WHO endorsed the use of misoprostol for prevention of PPH on its List of Essential Medicines, and it is registered in more than 30 countries specifically for the indication of PPH. In 2012 WHO recommended the administration of misoprostol by community health care workers (CHWs)

* AMTSL by definition consists of three steps: 1) the administration of a uterotonic immediately following birth; 2) controlled cord traction; and 3) abdominal massage of the uterus after the placenta is delivered to ensure uterine tone. In the updated WHO 2012 guidelines, controlled cord traction and sustained uterine massage are no longer routinely recommended.

and lay health workers for the prevention of PPH, in settings where skilled birth attendants are not present and oxytocin is unavailable. Projects in a number of countries including Afghanistan, Bangladesh, Ethiopia, Ghana, Nepal, Nigeria, Tanzania, Zambia and others have demonstrated that antenatal care (ANC) providers or CHWs can effectively distribute misoprostol late in pregnancy for PPH prevention, and women can safely use misoprostol following childbirth at home.¹¹ Program experience has also shown that **misoprostol can be provided to women in advance of their birth for self-administration immediately following birth.** A study in rural India concluded that misoprostol is a cost-effective intervention for home births.¹²

BENEFITS AND POTENTIAL IMPACT

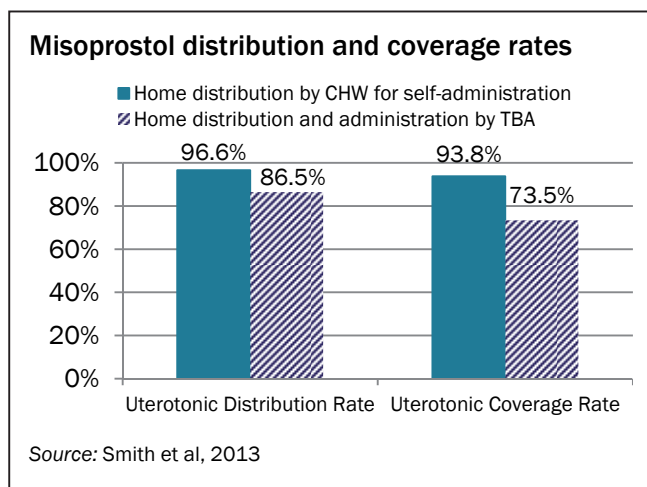
Studies in several countries have demonstrated that misoprostol, given as 600 µg (3 tablets of 200 µg each) immediately following delivery of the baby and after confirmation of no unanticipated twin, can be safely used to prevent PPH and maternal death at home deliveries. A double-blinded, randomized controlled trial in Pakistan found a 24% reduction in PPH when trained traditional birth attendants administered misoprostol.¹³ In a global review done in 2013 of all the programs which advocated misoprostol use at homebirth, mistaken self-administration of misoprostol before the birth—a potentially serious error—occurred in only seven women (0.06%), among the 12,615 women for whom follow up visit data were collected. In addition, none of the fifty-one maternal deaths reported among all misoprostol users were attributed to misoprostol use. The occurrence of certain side effects (mostly shivering and elevated temperature) is more common with misoprostol use than oxytocin. These side effects are both minor and transient¹⁴, and data from Afghanistan and Nepal suggest that they are tolerable for women.

Efforts to promote AMTSL in facilities and community-based distribution of misoprostol for home births together can increase uterotonic coverage to ensure that close to 100% of women giving birth are protected. Distribution of misoprostol directly to women through ANC and/or community health systems has been shown to **increase the proportion of women who are covered by use of a uterotonic drug immediately after birth.** In 2009, a Tanzania study, which combined education on PPH with distribution of

misoprostol through ANC, raised coverage of misoprostol to 88% of home births among a group of more than 12,000 women.¹⁵ In a study from Afghanistan where community-based advance distribution of misoprostol was introduced, 96% of the women in the intervention group used a uterotonic at birth (mostly misoprostol), while only 26% of the women in the control group—who had not been provided misoprostol—were protected from PPH through the use of a uterotonic.¹⁶ A similar study in Nepal involved volunteer community health workers (CHWs) distributing misoprostol during home visits. In two and a half years, uterotonic coverage increased from 11.6% to 74.2% as a result of a combination of misoprostol distribution and use, increased facility delivery and increased oxytocin use during facility delivery. The bulk of this increase was due to misoprostol use, which went from 0% to 49.4%.¹⁷ In Nepal, advance distribution particularly benefited the poor, the illiterate and those in remote areas.

BENEFITS OF MISOPROSTOL

- Inexpensive: USD \$0.1 per tablet¹
- Effective in prevention of PPH
- Can safely be self-administered
- Does not require cold storage; therefore, can be used outside of health facilities or in remote areas
- Acceptable to women
- Can increase coverage of a uterotonic following delivery when oxytocin is not available



In a 2013 review of programs and studies for prevention of PPH at home birth using misoprostol¹¹, advanced distribution of misoprostol by community health agents during home visits late in pregnancy achieved the greatest distribution (proportion of pregnant women who received misoprostol) and coverage rates (proportion of women who delivered at home who used misoprostol). It also concluded that misoprostol can be safely administered in the

home by community-level birth attendants or preferably self-administered. The International Federation of Gynecology and Obstetrics (FIGO) 2012 guidelines also recommend the use of misoprostol when oxytocin is not available, stating that “current program reports suggest that self-administration of misoprostol can be done safely and effectively.”¹⁸ Guidelines from WHO and FIGO provide support for the use of misoprostol to prevent deaths from PPH.

STRATEGIC APPROACH AND PROGRAM COMPONENTS

Before beginning activities for PPH prevention at homebirth using misoprostol, programs should review and/or develop a policy on uterotonic use, including the uterotonic of choice at different levels of the health system and by different cadres of health workers. Programs should also assess drug supply and logistics mechanisms to ensure uninterrupted drug availability (ideally of all maternal and newborn health drugs), review rates of facility-based and home-based births, and understand the community health system that already serve reproductive age women. Many country programs have started with pilots or learning phases. For guidance on introducing misoprostol for PPH prevention programming, please refer to the *Prevention of Postpartum Hemorrhage at Home Birth: A Program Implementation Guide* (2009). Based on pilot findings, many programs are now ready for national expansion. The follow-up Program Implementation Guide *Advance Distribution of Misoprostol for Self-Administration: Expanding Coverage for the Prevention of Postpartum Hemorrhage* (2013) is designed to scale up misoprostol programs for PPH prevention.[†] These programs will pave the path for long-term sustainability through integration.

A **community-focused program for prevention of PPH at home births** ideally includes:

- Community mapping of pregnant women by CHWs
- Community awareness-raising, promotion of facility-based births and education on PPH
- Encouragement of attendance at ANC (ideally four visits)
- Counseling of women on birth preparedness and the safe and correct use of misoprostol (if provided)
- Distribution of misoprostol, either through ANC or the community health system to those women who may not be able to have a facility-based birth
- Reinforcement of counseling messages on PPH through the community health system by home visits by CHWs to all pregnant women identified through the mapping exercise
- Postpartum follow-up of all women provided misoprostol
- Ensuring data quality and management by regular monitoring of data collection and standardization of M&E and quality assurance methods

DOES USE OF MISOPROSTOL AT HOME BIRTH DECREASE FACILITY DELIVERY?

There are some concerns that interventions to provide misoprostol in a community setting may decrease institutional delivery. The available evidence however from three programs in Nepal, Afghanistan and Zambia that tracked changes in facility birth rates reported an increase in the intervention areas.

In Afghanistan the comparison between the intervention and control areas showed an increase of 3.3%, in Zambia an increase of 13.8%, and in Nepal an increase of 3.9% in the facility birth rates.

Source: Smith et al. 2013

To support national strategies that promote facility-based births and AMTSL, community-focused PPH reduction programs must work with the various facilities in the health system. Programs can accomplish this goal by training facility staff on the correct and appropriate use of misoprostol, managing women who present with hemorrhage despite taking misoprostol or have misoprostol side effects, and supporting implementation of AMTSL and protocols for PPH management. Additionally, because misoprostol is already available through commercial and private outlets in many countries, ministries of health need to be proactive in developing policies and programs that ensure safe and correct use of the drug throughout the health system.

[†] To access these guides and for further information about misoprostol for PPH prevention, see the MCHIP website (www.mchip.net) and the PPH toolkit on the K4health.org/toolkits/postpartumhemorrhage.

CONCLUSIONS

Ideally, all women would have access to a skilled attendant for their birth, and the necessary emergency obstetric care to handle life-threatening emergencies. As we work toward that goal, simple and inexpensive interventions such as a community-focused program to reduce PPH using misoprostol have the potential to save many lives. Misoprostol's effectiveness, low cost, ease of administration, stability and positive safety profile make it an ideal option for a woman-focused public health intervention. There is sufficient evidence that advance distribution of misoprostol for self-administration at home births is safe and effective. In light of current evidence that uterotonic use is the most important intervention in the prevention of PPH, now is the time to ensure that every woman who gives birth is provided a high-quality uterotonic regardless of where she delivers.

KEY MESSAGES

- Reduction of PPH requires attention to all women, including those who deliver their babies in facilities and those who deliver at home.
- Because so many women worldwide do not have access to skilled care at birth, misoprostol use in the community may help make significant progress toward reaching Millennium Development Goal 5 to reduce maternal deaths.
- Misoprostol is a safe and effective alternative for preventing PPH when oxytocin is not available. Its use is supported by global organizations such as WHO, FIGO and ICM.
- Advance distribution of misoprostol is effective as part of a strategy to achieve high uterotonic coverage of all births.
- WHO guidelines recommend that in situations where oxytocin is not available, misoprostol can be used to prevent PPH. Administration of misoprostol by a lay health worker is recommended, in the absence of a skilled birth attendant who can perform AMTSL.
- Home distribution by CHWs and TBAs enabled more women to access and use misoprostol than distribution through ANC.
- Community-focused programs for PPH reduction that include distribution and use of misoprostol have resulted in increases in the number of women who go to facilities for delivery by skilled attendants.

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