



Prevention of Postpartum Hemorrhage at Home Births in Five Communities around Zaria, Kaduna State, Nigeria

Nigeria has the world's second highest number of maternal deaths, with 59,000 mothers' lives lost annually or 10% of the global figure. Postpartum hemorrhage (PPH) makes a significant contribution to these deaths. PPH is mostly unpredictable; up to 90% of women who develop PPH have no identifiable risk factors and it can be rapidly fatal if treatment is not applied immediately. Unfortunately, most of the maternal deaths due to PPH in Nigeria, as elsewhere, occur in places where there are no skilled birth attendants or because of a lack of required skills or resources to manage the bleeding and shock. Misoprostol is a proven uterotonic increasingly used in the control of PPH. FIGO/ICM jointly recommend that in home births without a skilled attendant, misoprostol may be the only available technology to control life-threatening PPH.

In 2008, the Population and Reproductive Health Partnership (PRHP) of Ahmadu Bello University, Zaria, Nigeria, partnered with Venture Strategies[†] and the Bixby Center for Population, Health and Sustainability at the University of California, Berkeley to initiate a study to provide empirical evidence to inform policy decision-makers on the safety of misoprostol administered by traditional birth attendants (TBAs) to prevent PPH. The study was undertaken in response to the Federal Ministry of Health's request for local evidence on the use of

misoprostol by non-skilled providers in Nigeria so that the level of access to the drug could be expanded to reach women who deliver at home without the supervision of skilled health care providers.

Study design

The study was cross-sectional and descriptive in design and sought to describe community-level distribution, knowledge, acceptance and uptake of misoprostol at home births in five communities (Unguwan Godo and Hayin Ojo in Sabon Gari Local Government Area (LGA), Dakace in Zaria LGA, and Tsibiri and Yakawada in Giwa

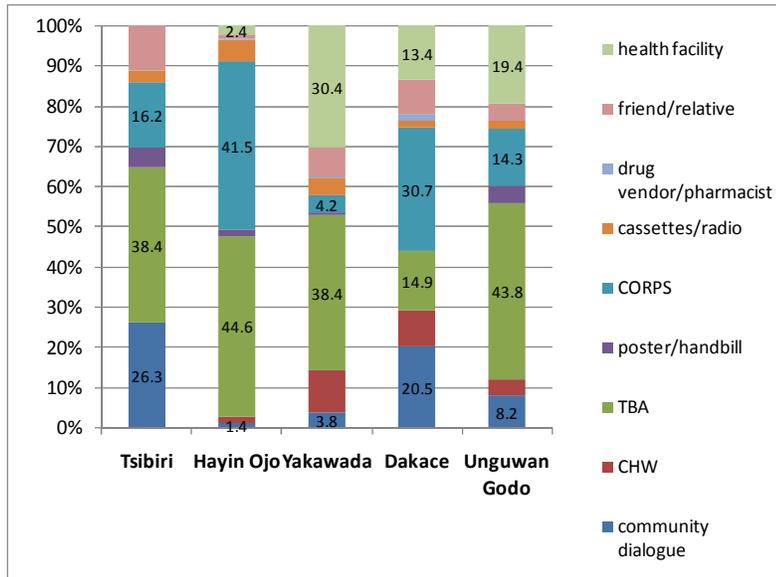


LGA). TBAs and community oriented resource persons (CORPs) recruited and counseled pregnant women on the importance of antenatal care and PPH prevention using misoprostol while drug keepers were responsible for storing misoprostol tablets, and dispensing them to TBAs, pregnant women, or members of their households seeking them for any woman in her last month of pregnancy. Midwives and nurses provided supportive supervision and technical backstop.

Majority of women delivered at home, with TBA

The study enrolled 1,875 women from January through December 2009 and results are based on the 1,800 women who completed postpartum interviews. Almost all women participating delivered at home (95%) and with a TBA (70%). Unguwan Godo had the fewest home births (80%) and Yakawada and Hayin Ojo had

Figure 1: Most important source of misoprostol information

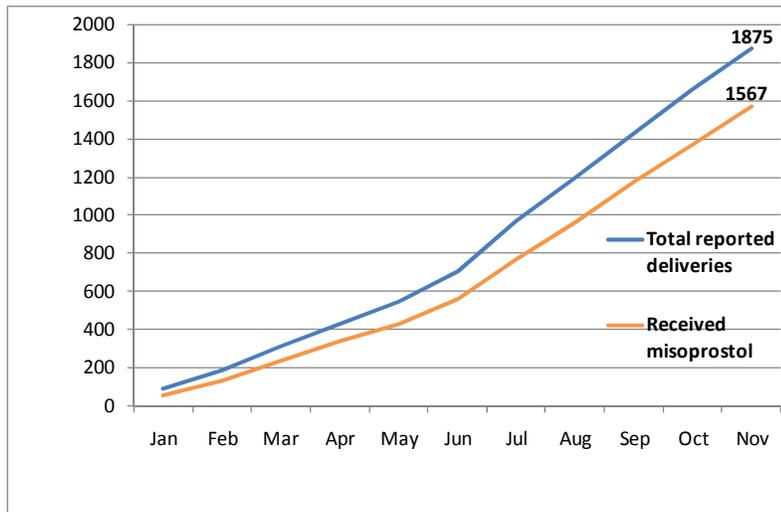


each campaign component. TBAs were the most important source of misoprostol information in all communities but Dakace, where CORPS played more of a role (31%) (Figure 1).

High misoprostol coverage at home births

Across all communities TBAs and CORPS were very effective in recruiting pregnant women as were TBAs in distributing misoprostol for PPH prevention. In total 84% of enrolled women received misoprostol to use in the event they delivered at home. Enrollment progress is presented in Figure 2. The gap between the two lines in the graph represents those women who did not take misoprostol, including those who had an injection after delivery.

Figure 2: Reported deliveries in the project sites and misoprostol intake



the highest percentage of home births (98%). Skilled attendance at delivery by a doctor, midwife, nurse or medical officer was low (7%).

Awareness campaign successfully reached community

The information, education and communication (IEC) campaign included community dialogues,

drama, print materials and interpersonal communication by TBAs and CORPS. Key messages included information on bleeding after delivery, the importance of health facility delivery, and the use of misoprostol. The most important source of misoprostol information varied significantly across sites, underscoring the importance of

Near universal comprehension of IEC

Most women knew that PPH can cause death (84%), and understood how much is too much blood loss after delivery (83%). However, fewer than half mentioned the importance of going to a health facility or getting help from a midwife if PPH occurs (49%). This could be a reflection of the lack of available services in the area and that most women deliver at home with TBAs.

Table 1: Coverage of misoprostol and protected births

	Tsibiri n=106	Hayin Ojo n=1029	Yakawada n=315	Dakace n=253	Unguwan Godo n=97	Total n=1800
Took misoprostol (PPH prevention)	89 (84.0)	892 (86.7)	215 (68.5)	147 (58.1)	78 (80.4)	1421 (79.0)
Received Injection	9 (8.5)	25 (2.4)	10 (3.2)	26 (10.3)	5 (2.0)	78 (4.3)
Did not receive / take any drug	8 (7.5)	112 (10.7)	89 (28.3)	80 (31.6)	14 (11.3)	303 (16.8)
Births protected from PPH*	98 (92.5)	917 (89.1)	225 (71.7)	173 (56.5)	83 (85.6)	1499 (83.3)

* percentage estimated from all births

More births protected; few additional interventions

The percentage of women who received injectable uterotonics was very low (4%). With the addition of misoprostol at home births, 83% of deliveries were protected from PPH (Table 1). The average PPH incidence rate¹ across all of the study communities was lower than expected (3%). Bleeding-related problems developed during home births were successfully treated at home. Of the 1,425 women who received misoprostol, only 16 who developed bleeding had blood loss of 500ml or more, and of those only one received additional interventions (IV and blood). From a much smaller number of 371 women who did not take misoprostol, 21 developed bleeding-related problems and were given misoprostol at home for treatment of PPH. Of those receiving treatment for PPH

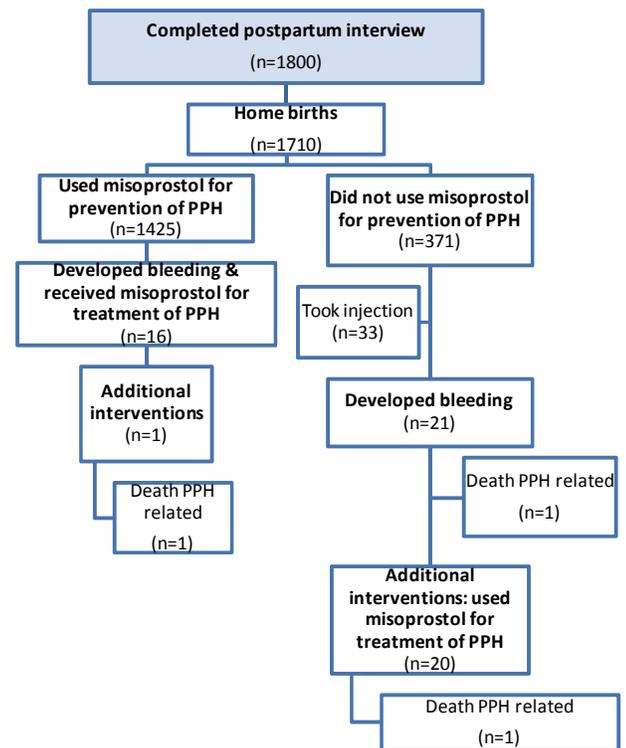
¹ Because measurement of blood loss at home births can be inaccurate, PPH incidence is measured as intention to treat using those who needed additional interventions.

with misoprostol at home, all but one were successfully treated (Figure 3).

Majority of women safely used misoprostol

Among women who used misoprostol for PPH prevention, 98% reported correctly taking three tablets, and 88% reported correct route (oral) and timing. Significantly more misoprostol users experienced shivering (42% v. 9%). This value is not surprising, given that shivering is an expected symptom of misoprostol use. It is also important to note that overall 96% of the women knew to expect shivering as a symptom.

Figure 3: Bleeding-related referrals and the need for additional interventions



Other symptoms such as nausea, vomiting and fever do not differ significantly among users and non-users of misoprostol (Table 2).

Table 2: Reported experience of postpartum symptoms

	Took misoprostol n=1425	Did not take misoprostol n=371	Total n=1796	p-value
Shivering	603 (42.0)	34 (9.2)	637 (35.5)	<0.001
Nausea	83 (5.9)	15 (4.5)	98 (5.5)	0.109
Vomiting	29 (2.0)	10 (3.0)	39 (2.2)	0.425
Raise of body temperature	158 (11.1)	19 (5.2)	177 (9.9)	0.001
Watery stool	24 (1.7)	12 (3.3)	36 (2.0)	0.061
Did not experience any symptoms	1040 (74.6)	277 (68.3)	1316 (73.2)	0.035

Table 3: Acceptability of misoprostol and willingness to pay for the drug

	Tsibiri	Hayin Ojo	Yakawada	Dakace	Unguwan Godo	Total
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Would use misoprostol in a subsequent pregnancy	97 (94.2)	967 (97.9)	270 (92.8)	186 (87.3)	108 (97.3)	1628 (95.4)
Would recommend misoprostol to a friend or relative	96 (93.2)	965 (97.6)	277 (95.2)	188 (87.4)	110 (98.2)	1636 (95.7)
Would purchase misoprostol	96 (93.2)	986 (97.8)	285 (91.6)	215 (89.2)	109 (97.3)	1691 (95.3)
Average amount willing to pay for misoprostol (Naira) of those willing to pay	745	497	510	320	867	522

Women willing to pay for misoprostol

Acceptability was extremely high in all communities with 95% of women willing to pay for the drug. The average price (N 522 or \$3.50 USD) reported in Table 3 reflects the amount they are willing to pay if the drug becomes available in their community for purchase. During the project the drug was made available for free.

Conclusions

Misoprostol at the community level is a feasible, safe, effective, and acceptable intervention by the community. TBAs and CORPs were highly effective in reaching women with the drug, and despite low literacy rates, method compliance was high. Moreover, misoprostol was extremely acceptable to women and men in the communities. This intervention

has the potential to save many mothers' lives throughout Nigeria. While efforts to increase skilled delivery should continue and are encouraged, these are medium- to long-term solutions. The results of this study provide evidence to support the expansion of community-based distribution of misoprostol to protect women who cannot reach a facility to deliver from PPH.

Recommendations

Given the results of this study we strongly recommend that misoprostol be allowed to be used at the community level by appropriately trained and supervised community-level agents.

Acknowledgements

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Hijab designed with misoprostol IEC messages