



Community-Based Postpartum Hemorrhage Prevention



After a mother dies in childbirth, the grandmother takes in her grandchild: a family tragedy and an uncertain future for the newborn.

BACKGROUND

In Nepal fewer than 20 percent of births are delivered with a skilled service provider. Maternal mortality is high (281/100,000), almost half of which is a result of postpartum hemorrhage (PPH).

Under the leadership of Family Health Division (FHD) and District Public Health Office (DPHO) Banke, Nepal first piloted distribution of misoprostol tablets for increasing uterotonic coverage after birth, for deliveries that take place at home without skilled birth attendants and where injectable oxytocin is not available. This intervention was first piloted in Banke district from 2005 to 2009. Banke district borders on Uttar Pradesh, India, in the plains area at the base of the Himalayas. The population of 445,000 is predominantly rural and served by a zonal hospital, private medical college teaching hospital, 3 primary health care centers, 9 health posts, and 35 sub-health posts.

Female Community Health Volunteers (FCHV) are frontline local health resource persons who provide community-based health education and outreach services in rural areas, with a special focus on maternal and child health. Outreach activities include vitamin A supplement and iron distribution, support for mass immunization campaigns, and community-based pneumonia treatment. There are 681 FCHVs in Banke (~1/600 population).

Banke District was selected as a pilot setting to promote household-level key behaviors for mothers and neonates and to test new community-based approaches to reduce risk amongst those still not seeking skilled birth attendance. The Banke intervention also focused on counseling and

distribution of misoprostol by FCHVs for prevention of postpartum hemorrhage in deliveries not attended by a skilled provider.

The focus of the Nepal Family Health Program II (NFHP II) is to improve delivery and use of public-sector family planning and maternal, newborn, and child health (MNCH) services, particularly at the community level. Part of NFHP II's work has been to train FCHVs, enabling them to expand the range of support they can provide in their communities.

INTERVENTION DESIGN

This activity, begun under NFHP and continued under NFHP II, has been part of a broader pilot of community-based safe motherhood and neonatal interventions (see *Technical Brief #10: Community-Based Maternal/Neonatal Health*). This set of mainly community-level activities was designed to be:

- implementable at scale with Government of Nepal health sector staff and resources;
- eventually fully integrated with other MNCH activities; and
- focused on specific interventions with greatest potential impact.

It was also designed to be closely documented and monitored, in its initial stages, to enable us to learn lessons and progressively refine an approach for greater impact and ease of implementation.

Key Achievements

- Provisional approval of misoprostol by the Nepal drug regulatory authority for PPH prevention.
- Neonatal mortality significantly declined and suggestive evidence of maternal mortality impact.
- Strong partnership resulting in a sense of ownership among a wide range of partners; this will facilitate more rapid expansion.

FCHV Role with Pregnant Women

FCHVs have been the key cadre in implementing this intervention. Their role has involved:

- Providing antenatal counseling and other support to pregnant women and household decision-makers.
- At 8 months of pregnancy, dispensing misoprostol (600 mcg) with instructions on its use, warnings about not

using it before delivery, and information about possible side-effects (and how to manage them).

- Soliciting agreement to promptly inform the FCHV after delivery, to trigger a postpartum home visit.
- Conducting an early post-natal home visit (within the first 2-3 days of birth) whereby the FCHV:
 - *Assesses*, looking for danger signs in the mother and newborn and refers, as appropriate.
 - *Counsels* on essential newborn care.
 - *Dispenses*, for example, iron and vitamin A.
 - *Documents* use of misoprostol and recovering any unused drugs.

IMPLEMENTATION

NFHP launched the initiative in 2005 which involved:

- Building support among stakeholders and obtaining all necessary approvals;
- Developing training, monitoring, and IEC materials;
- Conducting baseline studies, and setting up a monitoring system;
- Orienting district and health facility staff; and
- Training community workers.

STUDY METHODS

Data presented here are mainly from household surveys described below and from project monitoring data for the first 45 months of program implementation (January 2005 to September 2009).

Household Surveys

- Pre- and post- 30 X 30 (n=900) cluster surveys of households with women having delivered in the previous 12 months (June 2005, June 2007).
- Interviewing recently delivered women in all households, and husbands, mothers-in-law and fathers-in-law in a subset of households.
- Focusing particularly on pregnancy/delivery/postpartum-related service utilization and related household practices.

Project Management Information System

NFHP II staff maintain a comprehensive computerized system based on records from community health workers and monitoring visits. Follow-up is conducted and documented for all intervention beneficiaries. Monitoring data shown here cover the period from January 2005 to September 2009.

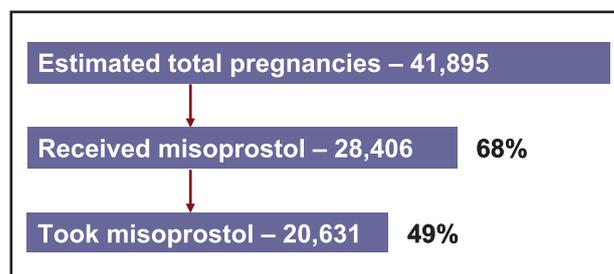
Special Studies

NFHP conducted a series of special studies to document targeted issues, including:

- Maternal death monitoring/audit;
- Health-education/counseling component;
- Following up cases not using misoprostol;
- Barriers to use of skilled birth attendants.

RESULTS

Misoprostol Coverage (45 months, Jan 2005-Sept 2009)



Of those who received but did not take misoprostol (n=7,775), 79% (6,144) delivered in a health facility or in the presence of a health worker.

Program Reach among the Disadvantaged

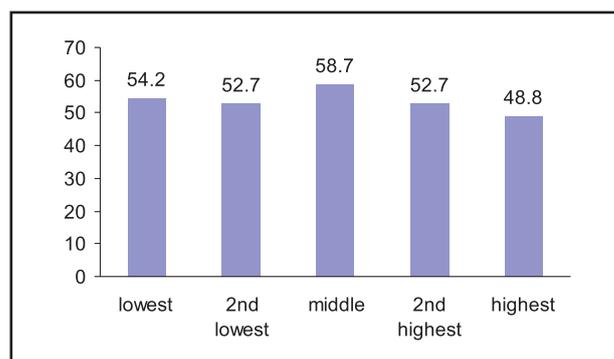
(Jan 2005-Sept 2009)

As a proportion of:
Pop. Beneficiaries

Brahmin/Chettri (privileged)	22%	28%
Dalit/Muslim/Janjati (disadvantaged)	33%	33%
From far side of Rapti river	19%	20%

Program interventions had good coverage among disadvantaged groups (Dalit/Muslim/Janjati and those living on the far side of the Rapti river), commensurate with their proportional representation in the population.

Proportion Taking Misoprostol (by HH asset wealth quintile, %)



Misoprostol users were equally distributed among household asset wealth quintiles.

Timing of Misoprostol Dose (Jan 2005-Sept 2009)

Among recently delivered women (RDW) who took the complete course of misoprostol, 19,269 (93%) reported taking it after the baby was born but before the placenta was delivered. An additional 1,365 (7%) women reported taking misoprostol after both the baby and placenta were delivered. Thus, 100% of women taking misoprostol did so in full compliance with FCHV guidance, with no women taking it in pregnancy or during labor.

Reported Side Effects of Misoprostol (2007 NFHP survey)

	Miso users (%)	non-users (%)
Shivering	18.5	15.1
Fever	9.0	9.4
Loose stool	2.0	1.3
Nausea	3.4	6.2

This data suggests that side effects experienced by misoprostol users were not considerably more common than symptoms experienced by non-users.

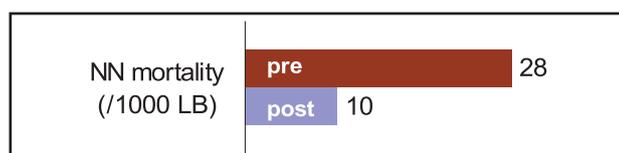
Reported Heavy Postpartum Bleeding (Jan 2005-Sept 2009)

Proportion reporting exceptionally heavy bleeding:

- Baseline 37%
- Of those who *didn't* receive miso 35%
- Of those who *received & took* miso 26%

During the Jan 2005-Sept 2009 period, among RDWs who experienced heavy bleeding, 30 (64%) went to a health facility for treatment.

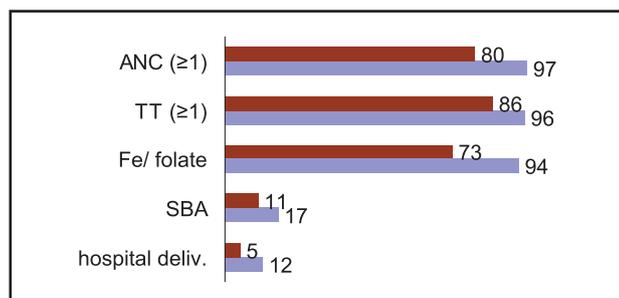
Mortality Impact (district-level, pre-/ post- %)



According to pre-/post-tests conducted in 2005 and 2007, for neonatal deaths, the relative risk ratio = 0.34 (95% CI 0.19, 0.60); thus neonatal mortality had significantly declined.

According to ongoing project monitoring data, between the end of January 2005 and the end of September 2009, 85 recorded maternal deaths were observed in Banke, lower than the expected number of deaths (118) calculated based on the national NDHS 2006 maternal mortality ratio and the expected number of pregnancies during the 45 month period. Analysis of these deaths (causes, timing, location, etc.) is currently ongoing.

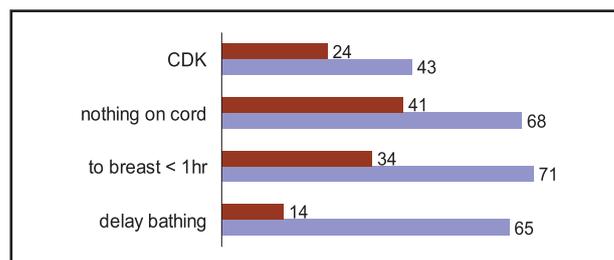
Service Utilization (pre-/ post- %)



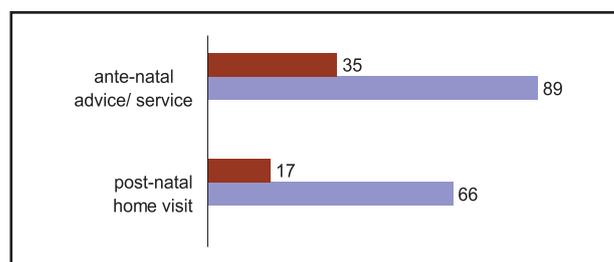
The intervention has increased the coverage of services. Coverage for antenatal care was already relatively high at baseline but has increased to near-universal coverage. Coverage for skilled birth attendance remains quite low but has improved. In addition to increases in the use of skilled

providers (doctors, nurses, auxiliary nurse midwives), use of relatively unskilled Maternal Child Health Workers to assist in deliveries (not included in the figures above) doubled from 3.6% to 7.6%.

Essential Newborn Care Practices (pre-/ post- %)



Use of clean delivery kits (CDK) increased markedly as did refraining from putting anything on the cord, early breastfeeding, and delayed bathing of the newborn.



FCHV-Provided Services (pre-/ post- %)

FCHVs have played a central role in this program and to do so has required that they effectively make contact with pregnant women. It is encouraging to note that about 90% of recently delivered women report some support from their local FCHV during their last pregnancy. Postpartum visits were less universal (66%) and were confined largely to women who had been given misoprostol (those 68% of estimated total pregnancies; see "Misoprostol Coverage" result).

Importantly, after delivery, FCHVs also helped to recover unused misoprostol. During the Nov 2005-Sept 2009 period, unused misoprostol was recovered from 7,589 women, i.e., 98% of those who had received misoprostol but did not use all of it.

LESSONS LEARNED

- Community volunteers can be trained to appropriately and effectively counsel and provide misoprostol for community women. FCHVs (many of whom are illiterate), given suitable training and supervision, perform adequately, providing PPH prevention counseling and then safely distributing misoprostol to pregnant women unlikely to be reached by skilled providers.
- Effective community interventions to expand access to uterotonic protection through community-based misoprostol distribution and self-administration can be complementary with efforts to increase institutional deliveries.

- FCHVs are receptive towards misoprostol-related duties and when surveyed in 2008 (post-pilot intervention), 69% reported that in the future they wanted to spend *more* time on such activities.



Misoprostol repackaged as mothers' safety pill.

- Side-effects of misoprostol use were generally reported to be mild and there is little indication of resistance among women to use misoprostol in the future due to unacceptable side-effects.

CONCLUSIONS

- Relying entirely on government health workers and an existing national volunteer cadre, relatively high population coverage was achieved.
- The approach used was effective in reaching disadvantaged segments of the community at higher risk of poorer outcomes.
- Target behaviors, including key essential newborn care practices and care-seeking, significantly improved.
- Strong partnership resulted in sense of ownership among a wide range of partners; this will facilitate more rapid expansion.

PROGRAM EXPANSION

NFHP II expanded its misoprostol interventions to increase uterotonic coverage for protection against the risk of postpartum hemorrhage. Testing of an alternative distribution channel (i.e., facility-based, rather than community-based, distribution of misoprostol by health workers during antenatal care visits, with subsequent follow up by FCHVs) is occurring in Sindhuli district.

In 2010, NFHP II replicated the Banke model in four mountain districts (Jumla, Kalikot, Mugu, and Bajhang). These districts were selected in keeping with the "Remote Area Guidelines" issued by the MoHP Family Health Division, aimed at increasing access for women in remote areas to obstetric first aid during pregnancy and delivery and life-saving emergency services in the event of obstetric complications. Communities in mountain areas experience the most limited access to normal delivery services (as well as basic and comprehensive emergency

obstetric care services) in the country, due to infrastructural and human resource shortages. In the face of such shortages, FCHVs are one of the few health-related resources available to communities in mountain districts.

In addition to these activities, NFHP II provides technical support to the Government of Nepal (GON) and partner organizations for scaling up of maternal and newborn health activities. For example, NFHP II provided technical assistance to CARE Nepal, UNICEF and Rural Health Development Project for scaling-up of misoprostol distribution.

In 2010, the GON approved of national-level scale-up of misoprostol for the prevention of PPH at homebirth. By 2011, the program was expanded to 21 districts and in 2012, it will be expanded to an additional two districts through GON funding. Moreover, the GON has begun to use government funds to procure misoprostol in all program districts.

ACKNOWLEDGEMENTS

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