

PREVENTION OF POSTPARTUM HAEMORRHAGE IN SOUTH SUDAN: INCREASING ACCESS TO EVIDENCE-BASED INTERVENTIONS

IMPLEMENTATION DESIGN

The Ministry of Health of South Sudan, with technical support from the USAID-funded Maternal and Child Health Integrated Program (MCHIP), is implementing a combined health facility and community-focused programme for the prevention of postpartum haemorrhage (PPH). The programme strengthens active management of the third stage of labour (AMTSL) and management of PPH at health facilities as well as counselling and advanced distribution of misoprostol by health care providers and home health promoters (HHPs) for self-administration at home births. The intervention is being implemented in two counties of South Sudan: Mundri East and Mvolo.



The program design was completed under the MSH-managed Sudan Health Transformation Project (SHTP II) and implemented under the MCHIP Integrated Service Delivery Program. Save the Children and Mundri Relief and Development Association (MRDA) are the programme's in-country partners for implementation. Venture Strategies Innovations (VSI) has supplied the misoprostol, and Systems for Improved Access to Pharmaceuticals and Services Program (SIAPS, implemented by MSH) has distributed it for the two counties. Within the MCHIP program the technical guidance and assistance comes from Jhpiego and JSI.

This brief summarizes the process and results from the learning phase of the programme, wherein certain implementation questions are answered. The results of the learning phase will guide the South Sudan Ministry of Health and its partners during program expansion.

KEY ACTIVITIES IMPLEMENTED DURING THE LEARNING PHASE

- Strengthened capacity of skilled birth attendants (SBAs) to provide AMTSL as part of clean and safe delivery at health facilities
- Strengthened capacity of HHPs to provide counselling on birth preparedness and complication readiness (BP/CR), referral of pregnant women for antenatal care (ANC), and correct use of misoprostol
- Identified pregnant women through community mapping
- Distributed misoprostol, through ANC and at the community level by HHPs, for self-administration by women at the time of birth
- Followed postpartum women who received misoprostol

Key Maternal Health Statistics for South Sudan

Maternal mortality ratio:
2,054/100,000 live births

Antenatal care, first visit*:
40.3%

Antenatal care, fourth visit*:
17.0%

Institutional deliveries*:
11.5%

* The South Sudan Household Health Survey 2010

SOURCE OF COMMODITY

VSI supplied misoprostol in-country for the implementation of the learning phase. The misoprostol was stored at the central medical store, and repackaging for distribution was supported by SIAPS.

RESULTS OF THE LEARNING PHASE

Implementation Area and Capacity Building

The results presented here are from Mundri East only. A total of 15 health facilities were included in the implementation in Mundri East. At these facilities 25 health providers were trained on ANC, counselling, and advanced distribution of misoprostol to women at 32 weeks of gestation. Six SBAs were trained in AMTSL, especially in the use of a uterotonic (oxytocin or misoprostol) immediately after delivery, at the health facility level. (See Table 1.)

Table 1: Number of Health Facilities and Training, Mundri East

Indicator	Number
Total population (Mundri East)	53,799
Number of health facilities, by type:	
▪ First-level hospitals (county hospitals)	1
▪ Primary health care centres (PHCCs)	4
▪ Primary health care units (PHCUs)	10
Number of health workers trained, by cadre and intervention:	
▪ ANC providers trained on misoprostol distribution	25
▪ SBAs trained on AMTSL	15
▪ Community midwives trained on AMTSL	4
▪ HHPs trained on counselling and misoprostol distribution	135

To reach pregnant women at the community level, 135 HHPs in the county were trained on mapping pregnancies in their catchment area and providing counselling on BP/CR (including one-on-one education for women and their families to create awareness about the importance of a facility delivery and the risks of PPH). The HHPs were also trained to give the drug to women for self-administration, along with education on its correct use and side effects, in case the women were unable to deliver at the health facility or with a trained provider.

Coverage of ANC, Counselling, and Advanced Distribution of Misoprostol

The learning phase was implemented from September 2012 to March 2013. (See Table 2.) During this period, 85% of the number of women expected to deliver were contacted and enrolled in the intervention. Of these, 83% were contacted at home by an HHP who provided counselling on BP/CR. Only 17% of enrolled women attended an ANC clinic or were seen by a health care provider at 32 weeks of gestation. Similarly, the 2010 South Sudan Household Survey (SSHS) found that, nationwide, only 17% of pregnant women attended four ANC visits.

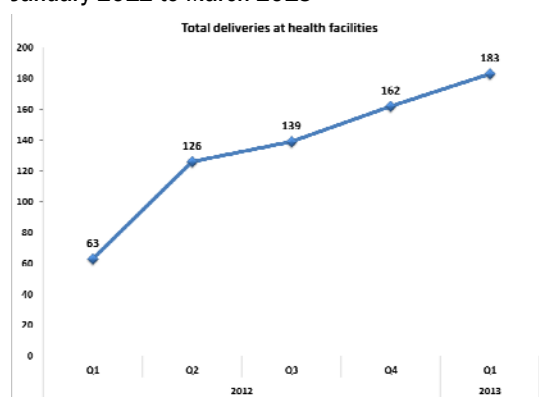
A total of 924 deliveries were during the seven-month learning phase, and a total of 927 deliveries were reported in Mundri East. All calculations are based on the estimate of 924 deliveries. Of these, 394 (43%) occurred at a health facility. The 2010 SSHS found only 11.5% of deliveries nationwide occurred in a health facility. Figure 1 shows a trend analysis of institutional deliveries before and during this learning phase. Data from the Health Management Information System (HMIS) of the Ministry of Health show that deliveries at health facilities are gradually increasing. Note that between the first quarter of 2012 and the first quarter of 2013 the number of facility deliveries almost tripled. This combined intervention of counselling of pregnant women during ANC and at the community level appears to have contributed to a higher number of deliveries at health facilities.

Table 2: Coverage of ANC, Counselling, and Distribution of Misoprostol during the Seven-Month Learning Phase, Mundri East

Indicator	Number	Percentage
Estimated deliveries	924	-
Distribution rate: Pregnant women, of total estimated deliveries, provided counselling and misoprostol	787	85.2%
Women who received PPH prevention package of counselling and advanced distribution of misoprostol:		
▪ At ANC by health care provider	135	17.2%
▪ At home by HHP	652	82.8%
Place of delivery:		
▪ Health facility	394	42.5%
▪ Home	533	57.5%
Coverage rate: Percentage of all women who delivered who received a uterotonic immediately after birth, by place of birth:		
▪ Health facility	342	86.8%
▪ Home	527	98.9%

Before the implementation of the PPH prevention learning phase, oxytocin was being used at four PHCCs for PPH management and not for prevention. As a result of the training and intervention, almost 87% of women delivering at health facilities were given a uterotonic for prevention of PPH. This includes 58 women who were given misoprostol because the cold-chain system used to store oxytocin was not working. At the same time, by distributing misoprostol and enabling women to take it themselves, the intervention provided a means of PPH prevention to almost all (99%) of women who delivered a baby at home. Only six women who delivered at home did not take misoprostol: Three women simply forgot to take the drug; two women delivered at their mothers' homes and forgot to carry their misoprostol with them; and one woman was forbidden by her husband to take the drug because he was not counselled when the misoprostol was distributed.

Figure 1: Health Facility Deliveries in Mundri East, January 2012 to March 2013



The combined health facility and community-focused programme for prevention of PPH resulted in uterotonic coverage of 94% of reported deliveries.

Women's Knowledge of Misoprostol and Correct Use of Misoprostol in Mundri East

In Mundri East, 511 women who were provided counselling and misoprostol by health care providers or HHPs were followed up during the postpartum period. The women were asked about what they learned from the counselling they received at the time of pregnancy and about their satisfaction with the use of misoprostol (Tables 3 and 4). Results from the follow-up interviews showed that women's recall was high on questions related to arranging transportation, saving money for delivery, danger signs during pregnancy, and knowledge about the use of misoprostol to prevent PPH, including timing and the number of pills to be taken. More than 80% of women responded correctly to all of these questions. However, women's knowledge of signs of excessive bleeding and side effects of misoprostol was not very high; only about 45% of the women correctly answered questions about these issues. Knowledge levels were similar whether the women were counselled by health care providers or by HHPs.

Almost all women followed during the postpartum period who had used misoprostol at a home birth ingested the medication at the correct time—more than 99% of women who received the misoprostol from a HHP and 100% of the women who received it from a health care provider. The two women who took the drug incorrectly took it after the delivery of the placenta. No women took the drug prior to the delivery of the baby.

Table 3: Women’s Knowledge and Use of Misoprostol, by Counselling Source, Mundri East

Indicator	Health Care Providers (n=37)	HHPs (n=474)
Knowledge of arranging transport and saving money for delivery	33 (89.2%)	396 (84.1%)*
Correct knowledge of danger signs during pregnancy (at least one)	37 (100%)	449 (94.7%)
Correct knowledge about signs of excessive bleeding	18 (48.6%)	203 (42.8%)
Correct knowledge about misoprostol	37 (100%)	472 (99.8%)*
Correct timing and number of drugs to take	36 (97.3%)	451 (95.1%)
Correct knowledge of side effects of misoprostol (at least three side effects)	17 (45.9%)	211 (44.5%)
Women with home births who received misoprostol and took it, and did so at the correct time (not before delivery and not after delivery of placenta)	36 (100%) (n=36)	437 (99.5%) (n=439)

* Some women did not answer all questions, therefore the denominator is not always based on 474

Women’s Satisfaction with Misoprostol

A very high proportion of women reported being satisfied with their use of misoprostol. A higher proportion of women counselled by HHPs were satisfied. More than 88% of women counselled by health care providers and 95% counselled by HHPs reported high satisfaction. Women reported that they would refer this approach to a friend or relative (87% counselled by health care providers and 95% by HHPs); they would agree to pay up to five South SSP for misoprostol (89% counselled by health care providers and 92% by HHPs); and they would like to take misoprostol for their next delivery (100% counselled by both health care providers and HHPs).

Table 4: Women’s Reported Satisfaction, by Counselling Source, Mundri East

Indicator	Health Care Providers (n=37)	HHPs (n=474)
Women who were satisfied with use of misoprostol:		
▪ Would recommend misoprostol to a friend	32 (86.5%)	448 (95.3%)*
▪ Agreed to pay 5 SSP	33 (89.2%)	435 (91.8%)
▪ Would take misoprostol for next delivery	36 (97.3%)	468 (99.8%)*

* Some women did not answer all questions, therefore the denominator is not always based on 474

Side Effects, Adverse Events, Obstetric Complications, and Referrals

During postpartum follow-up (n = 511), women were asked about side effects they had experienced after taking misoprostol (Table 5). Eighty-five percent of the women reported that they had felt minor side effects, including shivering, nausea, vomiting, fever, abdominal cramping, watery stools, or dizziness. However, all women reported that the side effects had subsided after 30–60 minutes.

Table 5: Side Effects, Adverse Events, Obstetric Complications, and Referrals, Mundri East

Indicator	Number (n=475)
Percentage of women who took misoprostol and experienced a minor side effect	408 (85.9%)
Women who took misoprostol and experienced an adverse event	0
Women who were administered misoprostol and experienced any obstetric complication	0
Number of referrals to a health facility due to complications	0

There were no adverse events reported during the learning phase. Adverse events were defined as (1) retained placenta, (2) uterine rupture, (3) fever more than 40 degrees, or (4) PPH. None of the women who took misoprostol reported PPH.

There were no obstetric complications reported among women who were enrolled in the intervention. There were no reports of referrals to a health facility for complications after taking misoprostol. There were two maternal deaths in Mundri East of non-enrolled women during the study period.

Health Care Providers' and HHPs' Knowledge of BP/CR and Misoprostol: Mundri East

All health care providers and HHPs from both counties who were trained at the beginning of the intervention were interviewed in March 2013. They were asked questions related to knowledge of BP/CR and misoprostol as per the training conducted in September 2012. More than 96% of the health care providers and HHPs demonstrated correct knowledge of counselling on the use of misoprostol (Table 6). Health care providers and HHPs were also asked if the training was helpful, and almost 95% reported that the training had been very helpful to them in performing their duties.

Table 6: Health Worker and HHP Knowledge of BP/CR and Misoprostol, Mundri East

Indicator	Number	Percentage
Health care providers/HHPs who know the correct administration of misoprostol	83	96.5%
Health care providers/HHPs who were satisfied with the training and use of knowledge in performing their duties	74	94.5%

Availability of Oxytocin and Misoprostol at Distribution Points

For the seven months of the learning phase in Mundri East, PHCCs were regularly monitored and tracked for availability of oxytocin and misoprostol. All PHCUs were also checked. All health facilities and HHPs had misoprostol available during the intervention period. However, for a period of two months, there were two PHCCs that were not able to store oxytocin due to a refrigerator failure. While this was not technically a stock-out, oxytocin was not available to women delivering at those facilities. During these two months, women received misoprostol during delivery.

Table 7: Uterotonic Stock-outs, Mundri East

Indicator	Number
Percentage of misoprostol distribution points reporting stock-outs)	0
Percentage of oxytocin administration facilities reporting stock-outs	2

SUMMARY OF FINDINGS: MUNDRI EAST

1. **A combined health facility and community intervention works.** The PPH prevention intervention combining improved services at health facilities and a community focus to reach women who were unable to deliver at health facilities was feasible in a rural county in South Sudan.
2. **HHPs had greater reach.** Four out of five women who received counselling and were provided misoprostol received it from an HHP through a home visit. For this intervention more than 80% of the advanced distribution was achieved through the community health system and the work of the HHPs. Advanced distribution through ANC was a less effective mechanism than through home visits by HHPs.
3. **High distribution and coverage is possible.** 85% of women expected to deliver were contacted and enrolled in the intervention. Among those who were counselled and provided misoprostol, use was *nearly universal*: 99% of women who had misoprostol and gave birth at home in Mundri East reported taking the medication. Overall, the intervention achieved uterotonic coverage of

94% of all reported deliveries (facility and home births combined). In Mundri East, misoprostol was used by women during home deliveries, as well as by some women who delivered in a health facility if oxytocin was not available.

4. **High levels of knowledge can be achieved.** Both HHPs and health care providers were effective at educating pregnant women on misoprostol. More than 80% of the women surveyed had knowledge of BP/CR (arranging transportation, saving money for delivery, and danger signs during pregnancy) and correct use of misoprostol (including timing and number of pills). Less than half of the women, however, could correctly recall the signs of excessive bleeding or name at least three side effects of misoprostol.
5. **HHPs can deliver educational messages effectively.** Among the women interviewed postpartum who had used misoprostol at a home birth almost all self-administered it according to instructions. No women took the drug prior to the birth and only two took it after the delivery of the placenta. This confirms that HHPs can appropriately educate clients to safely and correctly self-administer the medication.
6. **Misoprostol is acceptable to South Sudanese women for PPH prevention.** Even though most (85%) women surveyed experienced minor side effects, most (87%) also reported satisfaction with misoprostol. More than 90% said they would recommend it to a friend, and 99% said they would take it for their next delivery.
7. **A strategy of advanced distribution does not decrease facility birth rates.** This counseling and advanced distribution intervention did not decrease the percentage of births that were in facilities, and may have contributed to an increase. Although a specific baseline for Mundri East is not available, it is likely that it is similar to other areas of the country at the start of the intervention in September 2012. During this learning phase, 43% of deliveries were conducted at a health facility, almost four times higher than the rate reported (11.5%) in the 2010 SSHHS. The facility birth rate increased throughout 2012, including in the last quarter of the year when the intervention started, and into 2013. This is consistent with the observation that the intervention did not decrease facility birth rates.
8. **Misoprostol is useful at lower levels of the health system.** Maternal and child health workers were able to use misoprostol for deliveries they attended. In addition when the cold chain at two health facilities was not working, providers were confident to use misoprostol to ensure that every woman was protected from PPH with an appropriate uterotonic.

KEY LESSONS LEARNED

- Ministry of Health leadership and the Technical Advisory Group were fundamental to help guide programme implementation and monitoring.
- The advocacy and program efforts of a champion was critical to implementation of both the community and facility components.
- In the absence of oxytocin, misoprostol can be used at facilities as a reasonable alternative.
- A detailed review showed significant delays in seeking care. Strengthening maternal death audits will help to understand the cause of any complications and the delays involved in addressing these complications.

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