

The Impact of a Digital Stock and Service Management Tool on Family Planning Commodity Distribution in Rural Zambia

USAID MEDICINES, TECHNOLOGIES, AND PHARMACEUTICAL SERVICES (MTaPS) PROGRAM

Improved Access. Improved Services. Better Health Outcomes.

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Introduction

- Globally, community health workers (CHWs) bring family planning (FP) services closer to the community, bridging potential geographical and financial barriers.
- In Luapula Province, Zambia, a cadre of CHWs known as community-based distributors (CBDs) are trained to **provide FP and reproductive health education, FP counseling, and short-term FP methods to clients in their communities.**
- CBDs **lack a functional recordkeeping system** to manage clients and track consumption.
- Using a two-arm cluster-randomized trial and qualitative methods, we conducted an impact and process evaluation of OpenSRP—a digital stock and service management tool—to improve FP service delivery.

Methodology

Sampling: Of the 86 health facilities in Kawambwa, Mansa, and Samfya that were eligible to participate in the study (figure 1), the sample included the following:

- 20 health facilities with 117 CBDs in the control arm
- 20 health facilities with 104 CBDs in the intervention arm

Intervention: CBDs in the intervention arm were provided tablets configured with OpenSRP and trained on its use for FP supply chain management and clinical service provision.

Data:

- To assess impact, we conducted cross-sectional phone surveys of CBDs' female clients, aged 18–49, at baseline and endline.
- Quantitative assessment of 5 FP commodities** were distributed by CBDs (male condoms, female condoms, oral contraceptives, the Sayana press injectable, and the Depo-Provera injectable).

Results

Client outcomes:

- The intervention had no effect on FP access to preferred methods requiring resupply.
- Satisfaction with FP services and counseling remained high** among women living in the catchment areas in both the control and intervention groups, with no significant differences observed.
- Significantly **higher ease-of-use of FP** was reported among those clients receiving resupply from CBDs in the intervention arm.
- The median **number of client dispensing visits increased significantly** between baseline (7 [IQR 2.5, 15.5]) and endline (13 [IQR 6, 20]), ($p < 0.0001$).

Intervention Acceptability

“There is nothing I don't like about the tablet. I like using it because it's easier when reporting and registering when providing FP services now than it was when we were using papers and registers.”

“The use of these tablets has made things easy—if we enter the client there are no other things that we write other than on their cards; all the information on client's cards is already entered in the tablet. It has made things easier even when reporting; immediately, it's month end, I have to report on my tablet and close that month.”

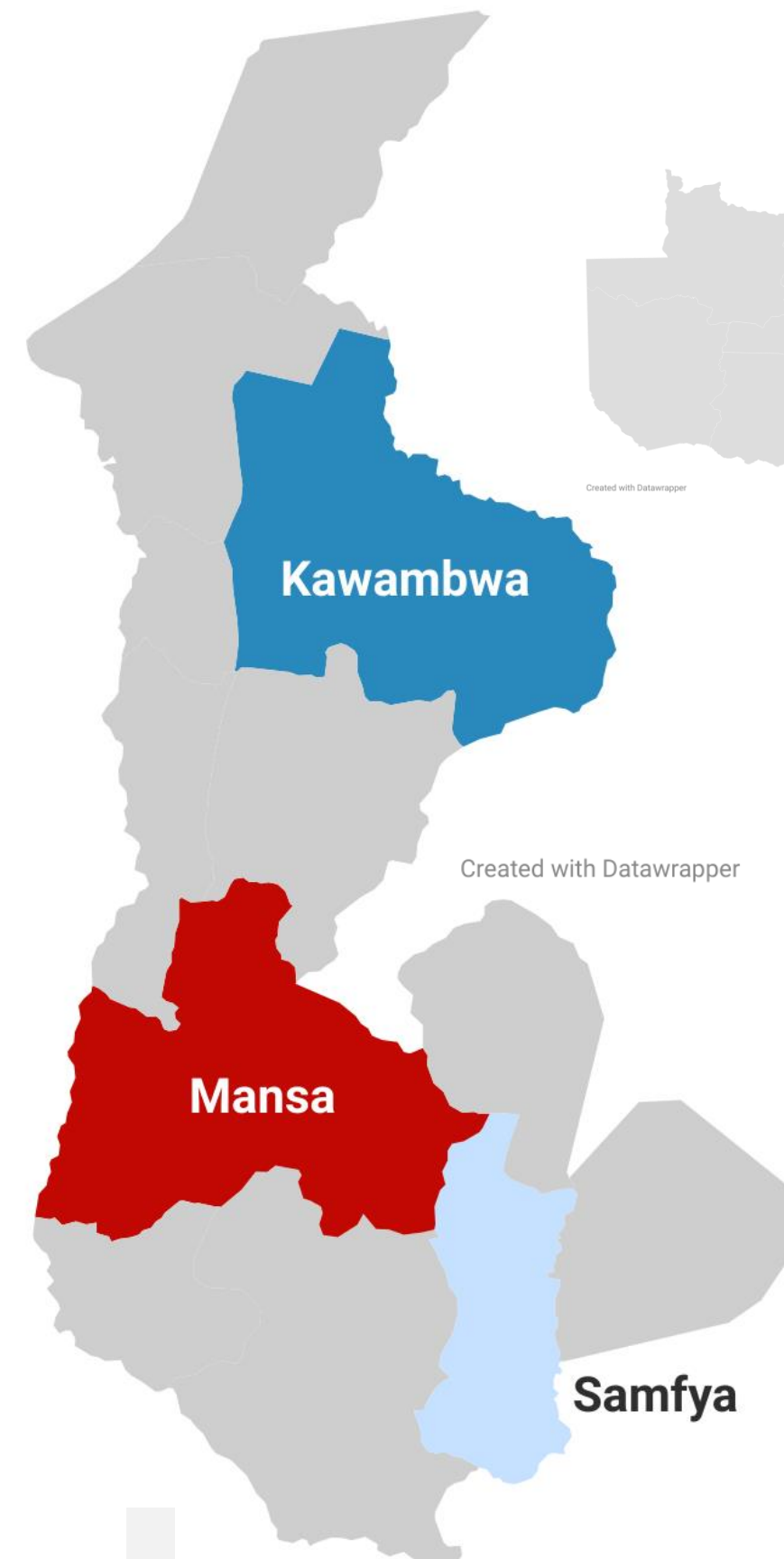


Figure 1. Luapula Province, Zambia

Study context:

Luapula Province (figure 1):

- A rural northern province with a population of just under 1 million, Luapula has the highest fertility rate among Zambian provinces (6.0 children per woman).
- 57% of women have reported that their demand for FP methods is satisfied, compared to the national average of 66%.
- Women in Luapula also reported the highest unmet need for FP to space or limit births (21%) in Zambia.
- Less than 40% of reproductive-age women use a modern method of FP.

Inventory levels and management practices among CBDs:

- CBDs report monthly to the health facility for resupply.
- CBDs generally maintain detailed and well-organized client records in improvised registers, but only **14.5% of CBDs maintain stock records from previous stock cycles.**

- Semi-structured, **in-depth interviews** with a purposive sample of CBDs, health facility staff, and district health staff were conducted at baseline and endline to qualitatively elicit perspectives about the intervention's acceptability and utility.

Analysis:

- Descriptive statistics and linear regression analysis were used to assess differences across timepoints and between groups.
- Content analysis was used to identify emerging themes and responses across timepoints.

Stock management:

- Statistically significant and programmatically meaningful **improvement in the CBD stock level of the intervention group**, especially in the availability of male condoms and injectable FP products (table 1).
- Median number of documented client visits per CBD in the prior three-month period suggests improved CBD efficiency.

Facilitators of the CBD program:

- CBDs' dialogue with the communities they serve, which facilitates trust and allows for better education and higher FP acceptance among rural communities
- Consistent supply of FP commodities at the health facility
- Remuneration and adequate equipment (e.g., raincoats) for the CBDs

Barriers to the CBD program:

- Clients' timing—some go to the CBDs' homes for FP services late at night or early in the morning, which is disruptive to the CBDs' schedules
- Logistical issues, such as transportation for clients or CBDs or the lack of proper product storage and stock, particularly during the rainy season

District Health Staff

- Timely, high-quality recordkeeping
- Better district-level planning

Health Facility Staff

- Easier, more efficient work
- Reduction of paper records/stationery
- Effective stock management

CBD

- Makes work easier, more efficient
- More accurate recordkeeping

Conclusions

- CBDs' use of OpenSRP led to significant improvements in stock availability.
- Client FP interruptions did not significantly change between study arms, suggesting that other factors impact the supply chain.
- OpenSRP appears to have improved service delivery efficiency and was perceived by CBDs as improving their recordkeeping.

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	Male Condoms			Female Condoms			Oral Contraceptives			Depo-Provera			Sayana Press		
	Cont.	Int.	P-value	Cont.	Int.	P-value	Cont.	Int.	P-value	Cont.	Int.	P-value	Cont.	Int.	P-value
Baseline															
N	104	89		104	89		104	89		104	89		104	89	
CBDs with method on hand, n (%)	36 (35)	25 (28)	0.33	19 (18)	6 (7)	0.02	31 (30)	25 (28)	0.79	24 (23)	22 (25)	0.79	58 (56)	38 (43)	0.07
Endline															
N	72	98		71	96		71	96		71	96		71	96	
CBDs with method on hand, n (%)	36 (51)	65 (68)	0.03	12 (17)	7 (7)	0.05	21 (30)	28 (29)	0.95	33 (46)	68 (71)	0.00	51 (72)	75 (78)	0.35

Table 1. Proportion of CBDs with FP method on hand at baseline (n = 193) and endline (n = 175)