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The RESPOND Project Study Series:
Contributions to Global Knowledge

Report No. 14

Mobile Outreach Services for Family Planning in Tanzania: An Overview of Financial Costs

Gwyneth Vance, FHI 360
John Bratt, FHI 360

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Acronyms and Abbreviations

CYP	couple-years of protection
DHS	Demographic and Health Survey
FP	family planning
IUD	intrauterine device
JSI	John Snow, Inc.
LA/PMs	long-acting and permanent methods (of contraception)
MCH	maternal and child health
MOHSW	Ministry of Health and Social Welfare
MST	Marie Stopes International/Tanzania
TZS	Tanzanian shilling
USAID	U.S. Agency for International Development

Executive Summary

Mobile outreach is a vital service delivery approach to expand access to long-acting and permanent methods of contraception (LA/PMs) to women in underserved areas. However, only limited information is available on the cost efficiency of different outreach service models used to provide LA/PMs. To better inform program planning and decision making on mobile outreach for family planning, The RESPOND Project conducted structured assessments of service models in Malawi, Nepal, and Tanzania.

The assessment in Tanzania included an analysis of the financial costs for the country's three principal models of mobile family planning services: two public programs run by the national Ministry of Health and Social Welfare (MOHSW) and a public-private partnership run by the not-for-profit organization Marie Stopes International/Tanzania (MST). Retrospective cost analyses of the ongoing service delivery phase of each model were conducted. Limitations in the availability and consistency of data precluded the calculation of representative cost estimates for the MOHSW models. Therefore, this report presents the results of the analysis for the MST model only.

Methodology

The study examined the expeditions of six of MST's 14 outreach teams from July to November 2010. The analysis examined resource use in terms of cost efficiency (cost per unit of output) and identified the cost drivers for the MST model. The study's unit of output is the acceptor of any LA/PM. The average cost per acceptor across the total number of expeditions analyzed (29) was calculated, to produce an overall cost estimate for the MST model. Estimates of cost per couple-year of protection (CYP) were also produced. The cost per acceptor reflects the upfront costs of delivering a method, while the cost per CYP apportions this expenditure over the period during which the benefits of contraception are realized.

Key Findings

Average Cost per Acceptor and Cost per CYP for the MST Outreach Expeditions

In total, over the five-month period, the six MST teams provided LA/PMs to more than 14,000 women, producing an estimated 76,000 CYPs. The average cost per LA/PM acceptor was US $22.37, ranging by expedition from US $14.40 to US $36.75. The average cost per CYP was US $4.28, ranging by expedition from US $2.39 to US $6.80.

Cost Drivers for MST Outreach

Labor was the single largest cost component (39%) of the MST outreach model, closely followed by the costs of contraceptives and expendable supplies, which accounted for 36% of the total average cost per acceptor. Transportation and overhead costs accounted for 10% and 13%, respectively.

The Interaction of Client Loads, Method Mix, and Expedition Costs

The numbers of clients served by individual expeditions ranged widely, from 171 to 829. The method mix also varied widely by team and by individual expedition. One expedition exclusively performed minilaparotomy, while around half of the expeditions provided fewer than 50 hormonal implants. The overall method mix provided by the 29 MST outreach expeditions examined was 44% minilaparotomy procedures, 37% intrauterine devices (IUDs), and 20% implants.

Analysis of the expedition data found significant correlations ($p<.01$) between:

- The average cost per acceptor and the overall number of clients served per expedition ($r = -0.57$)—i.e., the higher the number of LA/PM clients served by an expedition, the lower the average cost per client for that expedition
- The average cost per acceptor and the number of IUDs provided per expedition ($r=-0.63$)— i.e., the higher the number of IUDs provided by an expedition, the lower the average cost per client for that expedition
- The cost per CYP and the number of minilaparotomy procedures performed per expedition ($r=-0.77$)—i.e., the higher the number of minilaparotomy procedures performed by an expedition, the lower the cost per CYP for that expedition

Data from individual expeditions highlight the overall cost efficiency effect when expeditions provided a mix of minilaparotomy and the IUD to a high number of clients. For example, two expeditions of MST's Team 5 served more than 650 clients each, with the average cost per acceptor falling to less than US $15 and the cost per CYP to around US $2.50.

Recommendations

The study results provide valuable guidance on future programmatic and research efforts to capture the costs and outputs of outreach programs and to enhance the cost efficiency of outreach expeditions.

Optimize Client Loads

Improved coordination and communication between local health facilities, the district medical officer, and outreach providers in site selection, client registration and notification, demand generation, and community mobilization may lead to larger client loads and improved cost efficiency of individual expeditions. Small additional investments in these areas may reap significant benefits in expanding access and lowering costs.

Examine Client Contraceptive Preferences

Future analysis of outreach expeditions by service locations may identify differences in women's contraceptive preference by area, with important implications for demand generation activities. Ultimately, though, the method mix provided by any outreach team depends in the first place on each woman's right to choose her method of family planning.

Strengthen Monitoring Systems and Procedures

The limitations in data available for MOHSW outreach services highlight the importance of building routine systems that comprehensively capture programmatic inputs and outputs. To

enable valid cost estimates, initial investments will be required in data management, monitoring and evaluation, and the financial systems of government programs.

Conclusion

Determining the most suitable service delivery strategy is more complex than a simple comparison of the costs of various modes of delivery. The decision to scale up mobile services for family planning in underserved areas or to expand routine delivery needs to consider issues of equity of access and the quality of services delivered. Nevertheless, when monitoring systems are in place, the efficiency of mobile service programs can and should be examined over time, with the aim of improving how resources are used and how funding can be maximized to increase access to comprehensive, high-quality family planning services.

Introduction

Clinical or mobile outreach services—the delivery of clinical health services by a mobile team of trained providers through periodic visits to a particular site or from mobile units (MSI, 2012)—is an important service delivery strategy for increasing access to modern family planning (FP) methods, especially long-acting and permanent methods (LA/PMs). In particular, the unmet need for FP services in remote rural areas remains high where health facilities, skilled providers, and essential health commodities are scarce or unavailable. Mobile outreach services represent a vital option for reaching underserved communities with comprehensive, high-quality FP services.

However, to date, very limited information is available on the efficiency of different outreach service models used to provide LA/PMs (Solo & Bruce, 2010). To help bridge this knowledge gap, the RESPOND Project has conducted structured assessments of mobile outreach models for FP services in three countries: Malawi, Nepal, and Tanzania. The resulting report is intended to inform program planning and decision making with respect to the initiation, replication, and/or scale-up of mobile outreach services to deliver LA/PMs (Wickstrom et al., 2013).

The assessment in Tanzania, carried out in 2010, included a retrospective cost analysis of the country's three principal models of mobile FP services. The first two models are public programs run by the national Ministry of Health and Social Welfare (MOHSW); the third model is a public-private partnership run by the not-for-profit organization Marie Stopes International (MSI)/Tanzania (MST).

Unfortunately, data limitations preclude the calculation of representative cost estimates for the MOHSW models. Therefore, this report presents the key findings from a cost analysis of MST's approach to mobile services in Tanzania.

Country Context

According to the 2010 Demographic and Health Survey (DHS), approximately 34% of married women of reproductive age in Tanzania are currently using a FP method—27% a modern method and 7% a traditional method (NBS & ICF Macro, 2011). The most widely used methods in Tanzania are injectables (10.6%) and oral contraceptives (6.7%). Only about 6% of married women rely on long-acting and permanent FP methods (3.5% on female sterilization, 2.3% on implants, and 0.6% on the intrauterine device [IUD]).

Despite contraceptive prevalence's having more than tripled over the past two decades, the total fertility rate in Tanzania remains relatively high, at 5.4 lifetime births per woman—only slightly lower than the comparable measure in 2004–2005 (5.7 births per woman). Urban women, though have a substantially lower total fertility rate than do rural women (3.7 vs. 6.1) (NBS & ICF Macro, 2011).

As of 2010, 25% of currently married women in Tanzania had an unmet need for FP—16% an unmet need to space births, and 10% an unmet need to limit births. Sixty percent of

married women were classified in the latest DHS as having a demand for FP, but fully 43% of that demand was deemed unmet.

Tanzania's health care system has struggled to deliver services to the women and men who need them. In 2002, Tanzania had a total pool of fewer than 50,000 health workers (URT, 2002). The country has 0.02 physicians per 1,000 inhabitants, the lowest level of health care coverage in the world (WHO, 2006). About 70% of all health care workers are in the public sector (Munga & Maestad, 2009). A recent analysis showed sizable differences in the availability of health workers around the country, with an average of from 1.1 health care workers per 1,000 inhabitants in rural districts to 3.0 workers per 1,000 inhabitants in urban districts (Munga & Maestad, 2009).

MST's Mobile Services Model

In 2010, MST employed 14 full-time outreach teams of health professionals, each responsible for service provision in 6–9 districts.[1] The teams were continuously on the move between different health facilities, with outreach expeditions spanning 18 working days per month. (Teams also worked two days per month at one of MST's 14 static facilities.) Six of the 14 teams exclusively provided FP services, while the other teams delivered a range of reproductive and maternal and child health (MCH) services. Each team was made up of a surgeon, two nurses, and a driver. An outreach manager based in Dar es Salaam coordinated service delivery nationally, in collaboration with two outreach zonal coordinators based in Dar es Salaam and Arusha.

All services were provided at MOHSW health centers and dispensaries. Clients seeking FP services were registered by the staff at their local health center or dispensary, and the facilities then provided client registration numbers to the district medical officer. When a facility registered a sufficient number of clients, the district medical officer notified MST. Once an outreach team was assigned and scheduled for the district, the district medical officer communicated with the local facility on the outreach schedule. Facility staff then informed village leaders and village health workers, so that they could alert registered clients and inform any other interested clients.

MST followed its own clinical standards and protocols but used standard MOHSW client record forms.[2] Services were free of charge. Whenever possible, contraceptives and expendable supplies for expeditions were provided by MOHSW. All FP methods were offered, but the focus was on delivering LA/PMs. Counseling of clients on the methods available was performed by health center and dispensary staff in advance of outreach.

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[1] MSI continuously updates its outreach model based on results in the field and on new research. In the period since 2010, MST's outreach program has expanded to 20 teams, and all teams now provide integrated voluntary counseling and testing services for HIV. Each team comprises one doctor (either from MST or the local government), three nurses (one for FP, one for voluntary counseling and testing [also from local government], and one assistant for the doctor) and one driver. Demand generation activities have developed further, using community mobilizers and testing the use of town criers.

[2] In addition, MST client forms, including medical history and client consent, are completed for MST internal records. MST also maintains its own database, based on monthly activity reports submitted by its mobile outreach teams.

Methodology

Retrospective cost analyses of the ongoing service delivery phase[3] of each mobile outreach model for 2010 were conducted. The study's unit of analysis was the *outreach expedition*. To the fullest extent possible, input costs—including labor, supplies, capital costs, and overheads—were collected for analysis. However, limitations in the availability and consistency of data precluded the calculation of representative cost estimates for the MOHSW models.[4] Hence, this report presents the methodology and results of the cost analysis for the MST model only.

Selection of Outreach Expeditions

The analysis examined the activities of six of MST's 14 outreach teams from July to November 2010. These teams and months were selected because these expeditions represented "pure" FP outreach. For other months and teams, activities such as HIV counseling and testing and MCH work were completed along with FP services, making it difficult to isolate and estimate the cost for FP services. Data for all expeditions completed by these six teams over this five-month period were extracted and analyzed. Each team completed five expeditions, so 30 outreach expeditions in total were analyzed. Hence, this is not a sample, but rather a census of FP outreach from July to November 2010. Data from one expedition were later excluded due to difficulty in matching costs to outputs.

Data Sources

The primary source of information was MST's SUN database, which contained information on the numbers and types of clients served by month and by team, as well as all direct costs related to outreach, by month and team. The costs extracted from SUN were categorized into salaries and benefits, per diems, extra duty allowances, community mobilization, and other operational costs.

Salaries, Benefits, and Allowances

The salaries and benefits cover all MST outreach team members, including the driver, since the driver is also engaged in service delivery. The extra duty allowances cover the money paid by MST to on-site providers employed by the MOHSW for their participation in outreach events. The labor cost of participating on-site providers was calculated by applying a mean half-day

[3] Analysis of the ongoing service delivery phase excludes the costs associated with establishing the program.

[4] For the cost analyses for the MOHSW models, it had been planned to select random samples of outreach expeditions for each model across the four zones where the ACQUIRE Tanzania Project supported MOHSW outreach activities in 2010. However, data were not available in three out of four zones. The research team then purposively selected the Mwanza zone for further assessment, but only small convenience samples of expeditions for each model could be identified in that zone. Random sampling of expeditions was precluded by the inability to establish the number of expeditions completed by the Mwanza zonal office in FY 2010 and by inconsistencies in the reporting of outreach events. Therefore, the cost estimates obtained are neither representative of the MOHSW models nor comparable to the estimates for the MST model.

salary for on-site staff[5] to the number of providers engaged in each expedition, which was based upon the number of extra duty allowances paid (TZS 10,000 per provider).

Transportation Costs

Transportation costs extracted from SUN included fuel, vehicle licensing, and the cost of insurance. The capital cost of the vehicles and the costs of vehicle maintenance on a daily basis were calculated based on an estimated five-year useful life of a Toyota Land Cruiser (the standard vehicle used in outreach) with a replacement cost of US $40,000. Other transportation costs are included in the overhead category.

Contraceptives and Expendable Supplies

The cost of contraceptives was obtained from John Snow, Inc. (JSI).[6] The quoted prices cover the price of the contraceptives and freight, but not storage costs. The cost of expendable supplies was based on the standard quantities of supplies required by each method/procedure, as provided by clinical outreach managers of the ACQUIRE Tanzania Project.

Community Mobilization

This item covers the costs for advertising services through various means, including the hiring of mobilizers and "town criers."

Other Operational Costs

Telecommunications, stationery, and refreshments served to minilaparotomy clients after their surgeries were all included as other operational costs.

Overhead Costs

The following general expenses were included in overhead costs: other transportation costs (e.g., taxis, buses, and ferries), advertising, printing, design and photography, meeting expenses, other communication expenses for e-mail and internet, office supplies, postage, utilities, and other building costs, such as security. A standard overhead rate of 7% was applied to all project funds to cover these expenses, and a portion of the rent or cost of space was applied to each expedition. The cost of salaries for MST outreach coordinators was also included in overhead, since they are not directly involved in providing services on outreach expeditions. A portion of these salaries was applied to each expedition based upon the total number of outreach expeditions completed nationally by MST in 2010.

Data Analysis

The analysis examined resource use in terms of cost efficiency (cost per unit of output) and identified the cost drivers for the MST model. The study's unit of output is the acceptor of any LA/PM. To produce an estimate of cost per acceptor (in US$ and TZS),[7] the total cost of

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[5] Only a half-day of salary for participating on-site staff was applied for each full day of outreach to reflect that other health services continue at facilities during outreach, and hence local staff were responsible for their normal duties in addition to assisting with outreach.

[6] JSI provides technical assistance to MOHSW in the forecasting, procurement, and logistics for health commodities, including contraceptives.

[7] The exchange rate used was based on the average exchange rate for the sampled expeditions in 2010, which was 1,465 Tanzania shillings (TZS) to US $1.00. The average exchange rate for shillings to dollars for the period May 1–November 30, 2010, was obtained using http://www.oanda.com/currency/historical-rates/.

inputs was divided by the total output (i.e., the total number of LA/PM acceptors, for each outreach expedition). The average cost per acceptor across the total number of expeditions analyzed (29) was calculated to produce an overall cost estimate for the MST model. Estimates of cost per couple-year of protection (CYP) were also produced.[8]

Study Limitations

The cost estimates produced for the MST model assume that the delivery of long-acting methods was the only output of the outreach expeditions. The costs associated with any other services provided by MST teams, such as method removals[9] and quality control, were not separately identified and extracted from the costs of method delivery. Hence, the overall cost estimates for FP method delivery are overstated to the extent that time and resources were consumed on other services provided by the teams.

Several MST expeditions also provided short-acting methods of contraception, but these have also been excluded from the analysis. In this case, excluding short-acting methods avoided significant skewing of the results for cost per acceptor, but it did not have a material impact on cost per CYP: The expeditions provided a total of 64 CYPs through all short-acting methods, compared with almost 76,000 CYPs provided through LA/PMs.

Finally, the study analyzed all outreach expeditions from July to November 2010 for the six outreach teams funded by MST's Choice program. Sampling bias is therefore not a threat to validity. However, estimates of MST costs are only representative of the season in which the data were collected. Based on program descriptions, fewer clients attend outreach expeditions during the rainy season (December to April in much of Tanzania) compared with the dry season. The average cost per acceptor would likely increase as the provider-to-client ratios increase. Transportation costs may also increase due to the poor condition of roads.

[8] The standard CYP conversion tables for LA/PMs at the time of the study were used for the analysis. The estimates applied were as follows: sterilization procedures (minilaparotomy and vasectomy) in the Africa region (8.0 CYPs), Implanon implant (2.0 CYPs), Jadelle implant (3.5 CYPs), and copper-T IUD (3.5 CYPs). Since a mixture of Implanon and Jadelle are provided in Tanzania, an average CYP value for implants was applied (2.75 CYPs).

[9] In total, 725 implant removals, 84 IUD removals, and 44 pregnancy tests were reported for the MST expeditions analyzed.

Results

Table 1 summarizes the number of LA/PM clients served, by method, cost per acceptor, and cost per CYP. Data are presented by team and expedition, along with cost estimates and method mixes for each team and for all expeditions overall. In total, over a five-month period, these six teams provided LA/PMs to more than 14,000 women, producing an estimated 76,000 CYPs.

Table 1. Numbers of clients served by method, cost per acceptor, and cost per CYP, by MST outreach team and expedition

					Total no. of LA/PM clients	Cost per acceptor			Cost per CYP	
	Expedition	Mini-laparotomy	Implant	IUD		US $	TZS	Total CYPs	US $	TZS
Team 1	July	119	9	209	337	$21.51	31,512	1,708	$4.24	6,217
	Aug.	63	5	167	235	$30.41	44,553	1,102	$6.48	9,499
	Sept.	109	13	166	288	$26.35	38,598	1,489	$5.10	7,467
	Oct.	138	20	119	277	$28.54	41,817	1,576	$5.02	7,352
	Nov.	77	124	285	486	$21.44	31,403	1,955	$5.33	7,809
	Totals	506	171	946	1,623	NA	NA	7,829	NA	NA
	Averages	101	34	189	325	$25.65	37,577	1,566	$5.23	7,669
	Method mix	31%	11%	58%	100%	NA	NA	NA	NA	NA
Team 2	Aug.	468	0	0	468	$22.98	33,660	3,744	$2.87	4,208
	Sept.	144	78	204	426	$23.17	33,944	2,081	$4.74	6,950
	Oct.	134	429	266	829	$22.60	33,111	3,183	$5.89	8,624
	Nov.	115	239	206	560	$24.27	35,555	2,298	$5.91	8,664
	Totals	861	746	676	2,283	NA	NA	11,306	NA	NA
	Averages	215	187	169	571	$23.26	34,068	2,826	$4.85	7,111
	Method mix	38%	33%	30%	100%	NA	NA	NA	NA	NA
Team 3	July	222	40	331	593	$15.88	23,270	3,045	$3.09	4,532
	Aug.	198	34	256	488	$19.05	27,904	2,574	$3.61	5,291
	Sept.	186	0	228	414	$19.50	28,563	2,286	$3.53	5,173
	Oct.	117	155	213	485	$24.15	35,386	2,108	$5.56	8,142
	Nov.	155	367	77	599	$28.61	41,913	2,519	$6.80	9,968
	Totals	878	596	1,105	2,579	NA	NA	12,531	NA	NA
	Averages	176	119	221	516	$21.44	31,407	2,506	$4.52	6,621
	Method mix	34%	23%	43%	100%	NA	NA	NA	NA	NA
Team 4	July	203	0	134	337	$20.70	30,331	2,093	$3.33	4,884
	Aug.	236	242	215	693	$20.46	29,978	3,306	$4.29	6,284
	Sept.	213	0	228	441	$18.55	27,177	2,502	$3.27	4,790
	Oct.	206	2	265	473	$18.11	26,536	2,581	$3.32	4,863
	Nov.	165	448	205	818	$23.10	33,847	3,270	$5.78	8,468
	Totals	1,023	692	1,047	2,762	NA	NA	13,752	NA	
	Averages	205	138	209	552	$20.18	29,574	2,750	$4.00	5,858
	Method mix	37%	25%	38%	100%	NA	NA	NA	NA	NA

Table 1. Numbers of clients served by method, cost per acceptor, and cost per CYP, by MST outreach team and expedition (*cont.*)

	Expedition	Mini-laparotomy	Implant	IUD	Total no. of LA/PM clients	Cost per acceptor		Total CYPs	Cost per CYP	
						US $	TZS		US $	TZS
Team 5	July	388	61	225	674	$14.40	21,102	4,059	$2.39	3,504
	Aug.	341	0	322	663	$14.65	21,457	3,855	$2.52	3,690
	Sept.	152	63	53	268	$33.14	48,550	1,575	$5.64	8,262
	Oct.	272	32	238	542	$18.18	26,638	3,097	$3.18	4,662
	Nov.	211	0	191	402	$19.11	27,995	2,357	$3.26	4,776
	Totals	1,364	156	1,029	2,549	NA	NA	14,943	NA	NA
	Averages	273	31	206	510	$19.90	29,148	2,989	$3.40	4,979
	Method mix	54%	6%	40%	100%	NA	NA	NA	NA	NA
Team 6	July	119	16	36	171	$36.75	53,844	1,122	$5.60	8,206
	Aug.	334	122	136	592	$20.42	29,922	3,484	$3.47	5,085
	Sept.	375	107	93	575	$20.42	29,909	3,620	$3.24	4,751
	Oct.	330	115	46	491	$22.89	33,537	3,117	$3.61	5,282
	Nov.	426	125	110	661	$19.28	28,252	4,129	$3.09	4,523
	Totals	1,584	485	421	2,490	NA	NA	15,471	NA	NA
	Averages	317	97	84	498	$23.95	35,093	3,094	$3.80	5,570
	Method mix	64%	19%	17%	100%	NA	NA	NA	NA	NA
All	Totals	6,216*	2,846	5,224	14,286	NA	NA	75,831	NA	NA
	Averages	214	98	180	493	$22.37	32,768	2,615	$4.28	6,273
	Method mix	44%	20%	37%	100%	NA	NA	NA	NA	NA

*Total includes three vasectomies. *Note:* NA=not applicable.

The average cost per LA/PM acceptor was US $22.37, ranging by expedition from US $14.40 (Team 5, July) to US $36.75 (Team 6, July). The numbers of clients served by individual expeditions ranged widely, from 171 to 829. Further analyses, summarized in Table 2 (page 9), show moderately strong negative associations between the average cost per acceptor and the overall number of clients served per expedition ($r=-0.57$, $p<.01$) and between the average cost per acceptor and the number of IUDs provided per expedition ($r=-0.63$, $p<.01$). In other words, the higher the number of LA/PM clients served by a given expedition, the lower the average cost per client for that expedition. Similarly, the higher the number of IUDs provided per expedition, the lower the average cost per client for that expedition.

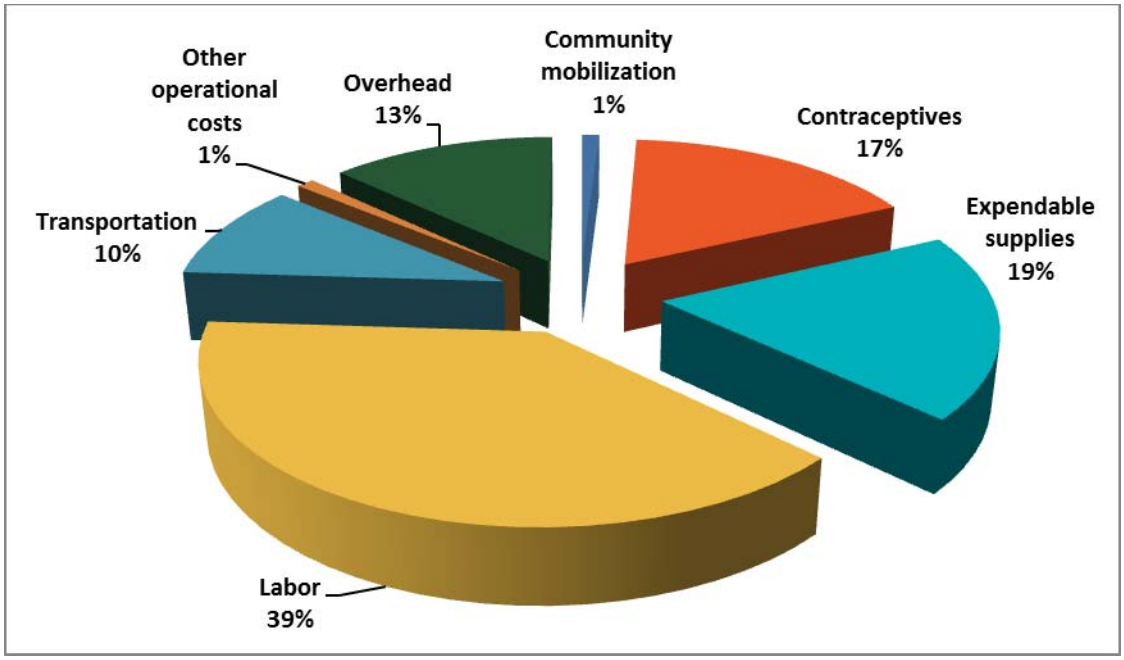
The average cost per CYP was US $4.28, ranging by expedition from US $2.39 (Team 5, July) to US $6.80 (Team 3, November). Analysis in Table 2 indicates a strong negative association between the cost per CYP and the number of minilaparotomy procedures performed per expedition ($r=-0.77$, $p<.01$). The method mix varied widely by team and by individual expedition. One expedition exclusively performed minilaparotomies, while around half of the expeditions provided fewer than 50 implants. The overall method mix provided by these MST outreach expeditions was 44% minilaparotomy procedures, 37% IUDs, and 20% implants.

Table 2. Correlations between numbers of methods provided, average cost per acceptor, and average cost per CYP

Correlations of methods provided and average cost per acceptor	
No. of minilaparotomies, cost per acceptor	–0.5204
No. of implants, cost per acceptor	0.1210
No. of IUDs, cost per acceptor	–0.6303
Total no. of LA/PM clients, cost per acceptor	–0.5731
Correlations of methods provided and average cost per CYP	
No. of minilaparotomies, cost per CYP	–0.7709
No. of implants, cost per CYP	0.5419
No. of IUDs, cost per CYP	–0.1730
Total no. of LA/PM clients, cost per CYP	–0.1724

Figure 1 depicts the main drivers of cost for the MST outreach expeditions examined. Labor was the single largest cost component (39%), while the costs of contraceptives and expendable supplies accounted for 36% of the total average cost per acceptor. Transportation and overhead costs accounted for 10% and 13%, respectively, of total costs for the expeditions analyzed. Spending on community mobilization was just over 1%.

Figure 1. Percentage distribution of average cost per acceptor, by component, MST outreach expeditions, 2010



Discussion and Recommendations

Improving the Cost Efficiency of Outreach

The study yielded estimates of average cost per LA/PM acceptor (US $22.37) and average cost per CYP (US $4.28) for the MST mobile outreach model. While the cost per acceptor reflects the upfront costs of delivering a method, the cost per CYP apportions this expenditure over the period during which the benefits of contraception are realized. Thus, while the initial expense of providing a method may seem high in the Tanzanian context, this cost when amortized over the duration of LA/PM effectiveness comes to less than US $5 per year of protection.[10]

The extremely wide range in the number of clients—from 171 to 829—served by individual expeditions of the same duration and the same team size not only point to the geographical hurdles faced by different expeditions in reaching women in remote rural locations, but also to the importance of demand generation to optimize client loads for each expedition. Increasing the numbers of clients served by any given expedition (within the bounds of team capacity and service quality) will act to apportion the largely fixed costs of labor, transportation,[11] and overhead (which represented more than 60% of the total cost) over a greater number of clients, which in turn will bring down the average cost per acceptor.

However, while the data show a moderately strong association between total client numbers for individual expeditions and the cost per acceptor measure, there was only a weak correlation between total client numbers and the cost per CYP. With respect to the latter measure, the cost efficiency of individual expeditions is significantly affected by the method mix provided by a given team. In particular, the strong negative correlation between the cost per CYP and the number of minilaparotomy procedures performed per expedition points to the cost-efficiency of this method. This finding would appear to indicate that the higher CYPs provided by this method more than offset the higher labor and materials costs associated with the procedure, resulting in a lower cost per CYP. For example, the August expedition of MST's Team 2 exclusively provided minilaparotomy, and the cost per CYP for that expedition was US $2.87.

The moderately strong negative associations between the average cost per acceptor and the number of IUDs provided per expedition ($r=-0.63$) also reflects the significantly lower cost in providing this method compared with other LA/PMs. Table 3 (page 12) shows the estimated cost of contraceptives and expendable supplies required to provide the three main LA/PMs.

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[10] One caveat, however, is that costs per CYP might prove higher if acceptors request early removal of devices at higher rates than are assumed in the formula or if the median age at sterilization in the population served is higher than that used in developing CYP estimates.

[11] There is limited scope for reducing transportation costs beyond sequencing visits to facilities that minimize travel time and distance. The outreach sites are fixed, and providers and supplies have to be brought to the sites. Travel by road is in most cases the cheapest means—and often the only means available—to get providers, contraceptives, and supplies to remote regions of Tanzania. Further, vehicles are already filled to maximum occupancy during outreach expeditions. As a result, a reduction in transportation costs would not seem feasible unless the cost of fuel were reduced, but the cost of fuel is subject primarily to market forces.

At 2010 prices, the estimated cost of materials to supply an IUD (US $1.26) is a fraction of the cost to supply an implant (US $23.00). Moreover, the new CYP conversion tables (updated in 2011 [RESPOND Project, 2011]) show that the Copper-T 380A IUD has an estimated CYP value of 4.6 years, higher than the estimated CYP values for each of three of the most commonly used implants: Implanon (2.5 years), Sino-implant (II) (3.2 years), and Jadelle (3.8 years). Therefore, greater acceptance of IUDs over implants would further reduce the average cost per acceptor and average cost per CYP.

Table 3. Costs (in US$) of contraceptive commodities and expendable supplies, by method, 2010 prices

	Minilaparotomy	IUD	Implant
Contraceptive commodities	$0	$0.49	$21.00
Expendable supplies	$7.76	$0.77	$2.00
Total	**$7.76**	**$1.26**	**$23.00**

Of potentially huge significance to FP programs in Tanzania, Bayer HealthCare cut the public-sector price of the Jadelle implant to US $8.50 per set starting in January 2013.[12] This represents a 60% reduction in the average implant cost as of 2010. In partnership with international donors, 27 million Jadelle sets will also be made available in low-income countries from 2013 to 2018. Even at this substantially lower price, contraceptive implants are still considerably more expensive to deliver than the IUD, but increased availability of implants—a popular, safe, and highly effective method—will simultaneously achieve the goals of reducing costs while maintaining/expanding contraceptive choice for Tanzanian women. All other things being equal, if a cost of US $8.50 for implants were applied in the current analysis, the average cost per acceptor for MST outreach would fall to US $20.15, a 10% reduction.

Therefore, purely from a cost perspective, the avenue to enhancing efficiency in outreach may lie in "optimizing" expedition client load and the method mix. The data from the July and August expeditions of MST's Team 5 highlight the overall efficiency effect when expeditions provided a mix of minilaparotomies and IUDs to a high number of clients. Those two expeditions served more than 650 clients each, with the average cost per acceptor falling to less than US $15 and the cost per CYP to around US $2.50.

However, the pursuit of cost efficiency in outreach must necessarily be weighed against the overarching issues of contraceptive choice and equity in access to FP. Ultimately, the method mix provided by any outreach team depends in the first place on a woman's right to choose her method of birth control,[13] while particular expeditions may serve fewer clients in remote rural areas so that women in those communities have access to family planning.

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[12] Ostensibly, the price for Jadelle was set to match that of Sino-implant (II). However, Sino-implant (II) is not yet registered for use in Tanzania. Currently, Implanon and Jadelle are the implant brands registered there, though Sino-implant (II) was registered in Kenya in August 2008 under the brand name Zarin. Future registration of Sino-implant (II) in Tanzania may act to increase domestic competition and further bring down implant costs.

[13] The low numbers of implants provided during some expeditions (20 implants or fewer were provided by 12 expeditions) may also have been due to stock-outs or limited supplies of implants available to these expeditions. Unfortunately, analysis of the supply of commodities to individual teams/expeditions was beyond the scope of this study.

Comparability of Different Outreach Models

The study highlighted inherent difficulties in comparing the costs and outputs of different outreach models with different monitoring and financial management systems. From demand generation through client registration, counseling and consent procedures, service provision (provision of contraceptive methods as well as method removal) to client follow-up and quality control, achieving valid comparisons of different outreach models will require *a priori* a high degree of consistency in the time, cost, and output data routinely captured by each model. Despite extensive efforts to source and compile input and output costs for the two MOHSW models, the available data were not sufficiently comprehensive or consistent to produce representative cost estimates to compare with the MST model.

Valid costing comparisons are further complicated—if not precluded—when outreach expeditions under different models have multiple and differing objectives. With respect to the models examined in this analysis, MST teams frequently provide HIV counseling and testing services and/or MCH services as well as FP services during expeditions, while MOHSW outreach during family weeks provides training and capacity building for health workers at lower-level facilities. Capturing and appropriately apportioning input costs, especially labor, across multiple outputs will require time-consuming, potentially costly data collection procedures during each service day. This study was fortunate that a substantial number of "pure" FP expeditions via the MST outreach model were available for analysis, backed by comprehensive cost and output data for each expedition. Still, the cost estimates produced assume that delivery of LA/PM methods was the sole output of the expeditions and have not been adjusted to reflect the other services provided by teams, such as method removals or quality control processes.

Determining the most suitable service delivery strategy is more complex than a simple comparison of the costs of various modes of delivery. The decision to scale up mobile services in underserved areas or to expand routine delivery needs to weigh issues of equity of access and the quality of services delivered. Nevertheless, when monitoring systems are in place, the efficiency of mobile service programs can and should be examined over time, with the aim of improving how resources are used and how funding can be maximized to reach program targets.

Recommendations

This study was a first step in understanding how mobile services for FP in Tanzania are implemented, how resources are used to support it, and what systems are currently in place to capture the costs and outputs of outreach. The results provide valuable guidance on future programmatic and research efforts to further improve the cost efficiency of outreach expeditions.

The MST data revealed an extremely wide range in the client loads of individual expeditions of the same duration and the same team size. In part, this may simply reflect the unavoidable geographic hurdles faced by different expeditions in reaching women in remote rural locations. However, it also points to the importance of optimizing the client load for each expedition. Improved coordination and communication between local health facilities, the district medical officer, and outreach providers in site selection, client registration and notification, demand

generation, and community mobilization may lead to larger client loads and improved cost efficiency of individual expeditions. Small additional investments in these areas may reap significant benefits in expanding access and lowering costs. Further research on the relationship between demand generation activities and client loads may help to identify highly effective interventions and provide an evidence base for advocating for resources.

Examine Client Preferences and Contraceptive Security

The current study found that the method mix delivered varied markedly by team and by expedition. Future analysis of MST expeditions by service locations may identify differences in women's contraceptive preferences by area, with important implications for demand generation activities. Providers, too, may prefer to deliver particular methods, which may influence clients' choice of method. For example, providers may prefer to deliver the implant over the IUD, since provision is less invasive and takes less time. The varying method mixes may also reflect the availability of contraceptive supplies for individual expeditions and, in turn, logistical issues affecting government medical stores in particular districts or zones. Clearly, the acceptance of methods is highly dependent on what methods are available during a given expedition.

Strengthen Monitoring Systems and Procedures

The monitoring systems and procedures related to MOHSW outreach services need to be significantly strengthened. Despite extensive data collection efforts, representative cost estimates of the two MOHSW models could not be produced. These data challenges highlight the importance of building routine systems that comprehensively capture programmatic inputs and outputs. International donors and multilateral institutions increasingly emphasize the need for increased programmatic efficiency, but deliberate effort and infusion of resources will be needed to put systems in place that enable efficiency estimates to be produced. As first steps, standardization of the reporting of outreach expeditions, including clearly capturing salary information for MOHSW providers involved in outreach, and documentation of the number of expeditions by region and year will improve the validity of cost estimates.

Conclusions

This analysis demonstrates the benefits of costing information to outreach FP programs. The better program managers and stakeholders understand resource use, the more strategic they can be in their planning and use of resources. When facing a worldwide political environment where stagnant and even decreasing funding is the norm, finding ways to reduce costs and stretch resources will be essential for improving and even maintaining services. At the same time, enabling cost analysis will require initial investments in data management, monitoring and evaluation, and financial systems of outreach programs. If costing information for outreach services is deemed valuable, donors and governments will have to provide the impetus to put routine systems and procedures into place that capture reliable and comprehensive data.

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