



COSTS OF HEALTHY BABY VOUCHER PROGRAM SERVICES

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ACRONYMS

ANC	Antenatal care
ART	Anti-retroviral treatment
ARV	Anti-retroviral medication
CBO	Community-based organization
DC	Direct costs
DHO	District Health Officer
GPOBA	Global Partnership on Output-Based Aid (World Bank program)
HBVP	Healthy Baby Voucher Program
HC IV	Health Center Category IV, the highest category of health center
HMIS	Health management information system
IC	Indirect costs
ICR	Indirect cost rate
IDI	In-depth interview
IEC	Information, education, and communication
KfW	German Development Bank
MOH	Ministry of Health
MSI; MSU; MSIU	Marie Stopes International; Marie Stopes Uganda; MSI & MSU
OPD	Outpatient department
PFP	Private for-profit (health care facility)
PHRplus	Partners for Health Reform plus
PMTCT	Prevention of mother to child transmission of HIV
PNC	Postnatal care
PNFP	Private not-for-profit (health care facility)
PSP-One	Private Sector Partnerships-One Project (USAID-funded; 2005- 2009)
RDT	Rapid diagnostic tools
RHVP	Reproductive Health Voucher Program
SHOPS	Strengthening Health Outcomes through the Private Sector
SMGL	Saving Mothers Giving Life Initiative
SNAP	Supplemental Nutrition Assistance Program
TCMP	Traditional and complementary medicine practitioners
TFR	Total fertility rate
UBOS	Uganda Bureau of Statistics
UCMB	Uganda Catholic Medical Bureau
UMMB	Uganda Muslim Medical Bureau
UNPD	United Nations Population Division
UOMB	Uganda Orthodox Medical Bureau

UPMB	Uganda Protestant Medical Bureau
USAID	United States Agency for International Development
Ush	Ugandan shilling
UTI	Urinary tract infection
VCT	Voluntary (HIV) counselling and testing
VHT	Village Health Team

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EXECUTIVE SUMMARY

Background

Uganda's maternal mortality rate is extremely high, with 360 deaths per 100,000 live births (UNPD, 2013). With overstretched human resources and infrastructure, the public sector struggles to offer free or affordable comprehensive health services to Uganda's largely rural population. Private health providers (for-profit and not-for-profit) constitute over one-fifth of all health care providers in Uganda, with nearly 1,200 privately owned health facilities. Voucher programs enable the private sector to play a key role in health service provision in underserved areas.

Funded by the United States Agency for International Development (USAID), the Strengthening Health Outcomes through the Private Sector project (SHOPS) implemented a maternal health voucher program in southwestern Uganda called the Healthy Baby Voucher Program (HBVP) from 2012 to 2014, as part of the Saving Mothers Giving Life Initiative. SHOPS's partner, Marie Stopes International, served as the voucher management agency, working through its local affiliate, Marie Stopes Uganda. The goal of the program was to increase access to affordable comprehensive maternal health services while improving the quality of obstetric care. By the end of the program, nearly 37,000 women purchased vouchers, redeeming 96 percent of them for at least one service.

Study objectives

This study analyzes the costs of the services delivered under this program to develop optimal reimbursement rates, budgets, and strategies for future programs. No previous study on maternal voucher programs in Uganda has examined the costs of services as a basis for determining rational reimbursement rates. Our literature review found no studies on actual costs to the provider.

This costing study examines the full package of HBVP services to identify the resource inputs required to deliver them. The sample frame included all the non-hospital facilities that participated in the HBVP, including small and medium sized private facilities from all four districts — 42 facilities in all. Researchers selected a final sample of 10 for-profit and 10 not-for-profit facilities through a stratified random process. Within those 20 facilities, researchers purposively selected 12 facilities for in-depth interviews.

The main research questions of this study were:

1. How do costs of services vary among facilities?
2. How do reimbursement rates compare with actual costs of service delivery?
3. How do reimbursement rates compare with fees?
4. What are the providers' experiences with and opinions about the HBVP?

Methods

The study used a predominantly quantitative design. Additional context was provided through qualitative, in-depth interviews with participating providers, using a semi-structured interview guide and audio-recorded (with permission).

Findings

Provider costs varied among the facilities, with small facilities tending to have higher average costs than medium facilities. For-profit and not-for-profit cost patterns were not clearly distinguishable, though the fees charged by not-for-profit facilities were consistently lower. The most significant components of costs were drugs, medical supplies, and indirect costs. Staff costs were the least significant, perhaps reflecting the low salaries of nurses.

Facilities' fees were mostly higher than the actual costs of providing each service, though fees are not necessarily based on financial information. The voucher program reimbursement rates were also generally higher than the costs of the services, and sometimes higher than the fees charged to non-voucher clients/patients.

During the voucher program, utilization increased in services covered by the program and in other services as well, including family planning (261 percent increase) and well-baby care (204 percent). All providers interviewed reported an increase in client volume during the program period. The voucher program may have attracted use of other services, as mothers took advantage of being at the health facility. However, without comparison data or a control group from non-voucher facilities, we cannot claim with confidence that vouchers drive service utilization.

HBVP did provide a major revenue stream for participating facilities. Voucher revenue represented more than 50 percent of total revenue for 11 out of the 20 facilities, providing an especially important source for the small for-profit providers. With the additional revenue, all 12 providers interviewed reported investing profits from the voucher program to improve the physical structure of their health facilities.

Unplanned outcomes of the HBVP were mainly positive. Providers engaged in community outreach, and eight of them integrated health education. All promoted low-cost or free services even for non-voucher clients. All providers reported acquiring new skills from the program, including resuscitation of infants, pelvic examinations, and management of high blood pressure.

All the participating providers faced challenges in maintaining adequate financial and health information records. Facilities did not use data for planning or decision making; they accordingly experienced high staff turnover due to the increased workload. Record-keeping issues included errors and lost files causing delayed or rejected reimbursements

Recommendations

1. Build capacity — especially for smaller facilities — for marketing and public awareness.
2. In scaling up the voucher program, align reimbursement levels with the actual costs of services.
3. For not-for-profit facilities receiving government grants and material support, reimbursement levels should take into account regular government subsidies.
4. The voucher program could be combined with other pay-for-performance initiatives to expand private sector involvement in health service delivery, especially in underserved areas.
5. Community outreach activities and healthcare education should be encouraged as part of a scaled-up voucher program — promoting not only the use of the vouchers, but other health services as well.
6. In a scaled-up program, participating facilities should be offered skills training to improve systems for documentation, retrieval of information, and filing of claims.

7. To enable facilities to maintain adequate stocks of drugs and other medical supplies, claim processing must be managed efficiently.
8. Quality of care could be enhanced by conducting regular reviews of provider practices at participating facilities, including monitoring their adherence to clinical guidelines.
9. A scaled-up voucher program should invest resources in basic training in financial management for proprietors or managers.

1. INTRODUCTION

As in many developing countries, health care in Uganda is accessed through a number of channels. While the Ministry of Health operates an extensive network of public hospitals and clinics, a large segment of the population cannot readily access this public health system, especially in rural and peri-urban areas. Uganda also has a range of private health care providers, including privately-owned hospitals and clinics that serve patients who, for various reasons, are unable or reluctant to use the public system.

USAID has implemented a number of programs designed to explore ways to expand access to quality health care by supporting private health care providers, through capacity building, direct support and improved access to supplies. One of these, the Healthy Baby Voucher Program, was designed to improve maternal and infant health outcomes by expanding private maternal health care. This report assesses the costs borne by participating providers, and includes recommendations pointing to some ways this approach might be enhanced.

1.1 THE HEALTHY BABY VOUCHER PROGRAM

The Strengthening Health Outcomes through the Private Sector project (SHOPS), funded by USAID, implemented a maternal health voucher program in Uganda as part of the Saving Mothers Giving Life Initiative (2012–2014). The goal of the program was to increase access to affordable comprehensive maternal health services while improving the quality of obstetric care. HBVP outreach workers sold vouchers to pregnant women who would not otherwise be able to afford maternal health services.

The voucher program operated in four districts in the southwest region of Uganda: Kabarole, Kamwenge, Kibaale, and Kyenjojo. SHOPS partnered with Marie Stopes International (MSI), through its local affiliate Marie Stopes Uganda (MSU).¹ Under the HBVP, Village Health Team volunteers sold vouchers to poor pregnant women who would not otherwise be able to afford to pay medical costs for maternal health services. The workers applied a poverty grading tool to verify eligibility for the program.

The services provided under the HBVP included:

- Four antenatal care (ANC) visits, including treatment for malaria and other diseases
- Prevention of mother to child transmission of HIV (PMTCT) including HIV testing and counseling along with Option B+ for mothers who test positive²
- Safe delivery, including caring for complications in a high quality facility
- Transportation services, such as public transport or ambulance, to a health facility for delivery and to a referral facility as needed
- Postnatal care (PNC) including physical examination, nutrition, and immunization advice

¹ Together, these two organizations are sometimes referred to as MSIU.

² With Option B+, triple ARVs are started as soon as the mother is diagnosed, to continue for life, and the baby gets daily prophylaxis (NVP or AZT) from birth through age 4–6 weeks, regardless of feeding method (www.emtct-iatt.org/toolkit/).

1.2 RATIONALE AND PURPOSE OF THIS STUDY

This study aimed to calculate the costs of providing key maternal health services to women in the private health sector, focusing on HBVP participating facilities. Based on these findings, we compared the costs for maternal health services with reimbursement rates and with the fees charged to paying clients. These data are essential for an informed determination of reimbursement rates for voucher programs; to date, however, no studies on maternal voucher programs in Uganda have examined their costs as a basis for determining rational reimbursement rates. The predecessor healthy baby voucher programs set reimbursement rates based on user fees, without reference to the actual costs incurred by providers. Indeed, our literature review found no studies on costs to the provider. Most studies focused on the benefits of the programs to beneficiaries, or analyzed the health financing impacts of programs, but did not analyze the related costs to providers (Bellows et al., 2013; Abuya et al., 2012).

The costing study examined the full package of HBVP services: ANC (including PMTCT), delivery, and PNC, along with the resource inputs required to deliver them. The study sample included only those facilities that participated in the HBVP, including small and medium sized private facilities from all four districts. We also incorporated a qualitative research component to explore the experiences of providers with the voucher program.

Results from both components of the study are intended to facilitate better determination of reimbursement rates, program budgeting, and strategies for provider motivation and retention in voucher programs. They can be applied to budgeting for scale-up of existing programs, or to design new voucher programs.

The main research questions of this study were:

1. How do costs of services vary among facilities?
2. How do reimbursement rates compare with actual costs of service delivery?
3. How do reimbursement rates compare with fees?
4. What are the providers' experiences with and opinions about the HBVP?

2. BACKGROUND

2.1 MATERNAL HEALTH IN UGANDA

Uganda's total fertility rate (TFR) is among the highest in the world — currently estimated at 5.9 births per woman (World Bank, 2015), the eighth highest in the world. Tragically, Uganda's maternal mortality rate (MMR) is also extremely high, with 360 deaths per 100,000 live births, according to recent estimates from WHO, UNICEF, UNFPA, The World Bank, and the United Nations Population Division Maternal Mortality Estimation Inter-Agency Group (Requejo, Victora, and Bryce, 2015).

Financial as well as geographic challenges limit access to maternal health services in Uganda. With overstretched human resources and infrastructure, the public sector struggles to offer free or affordable comprehensive health services to Uganda's largely rural population. Pregnant women who do not have the funds to pay for private care may opt to deliver at home, rather than endure the long waits or burdensome travel required to access a public facility.

2.2 PRIVATE HEALTH CARE IN UGANDA

The private sector is a very important component of Uganda's health system, responsible for about half of all health sector outputs (Uganda Health Sector Strategic Plan III, 2010/11-2014/15). With the private sector playing a key role in health service provision, especially in rural areas, voucher programs help mitigate the barriers of both cost and distance (UBOS and ICF 2012; SHOPS 2014). However, the coverage of maternal health voucher programs in Uganda is still limited compared with the need, especially among the poorest women.

The private health sector comprises; both for-profit (PFP) and not-for-profit (PNFP) facilities, as well as traditional and complementary medicine practitioners (TCMPs). Estimates in 2010 showed that private health providers constituted 22.5 percent of all health care providers in Uganda, serving in nearly 1,200 privately owned health facilities. Almost 70 percent of privately owned facilities are located in the Central region.

Four faith-based umbrella organizations manage 75 percent of PNFP facilities: Uganda Catholic Medical Bureau (UCMB), Uganda Protestant Medical Bureau (UPMB), Uganda Orthodox Medical Bureau (UOMB), and Uganda Muslim Medical Bureau (UMMB). The Catholic and Protestant medical bureaus own nearly 70 percent of these facilities, serving large numbers of patients (see Table 1).

TABLE 1. SERVICE DELIVERY BY UGANDA'S TWO LARGEST NOT-FOR-PROFIT ORGANIZATIONS (2014/15)

Service	UCMB	UPMB
Number of deliveries	94,356	27,956
Number of immunizations	2,028,888	256,540
Number of consultations (ANC, FP)	n/a	124,794

Source: Ministry of Health, 2015

Private health care providers, with a strong urban and peri-urban presence, provide mainly primary and secondary care. In 2006, they accounted for 46 percent of total health facilities

(Mandelli, Kyomuhangi, and Scribner, 2005). Private provider services are not comprehensive: while more than 90 percent of facilities offer malaria and STD treatment, only 22 percent offer immunization. About 40 percent provide maternity and post-abortion care as well as adolescent reproductive health services.

Voucher programs provide incentives to encourage both providers and clients to practice defined behaviors that support desirable outcomes. Thus, provider payments are tied to results rather than to inputs. This form of *results-based* financing has been defined as:

A cash payment or non-monetary transfer made to a national or sub-national government, manager, provider, payer or consumer of health services after predefined results have been attained and verified. Payment is conditional on measurable actions being undertaken. (Grainger et al. 2014, citing Musgrove 2011.)

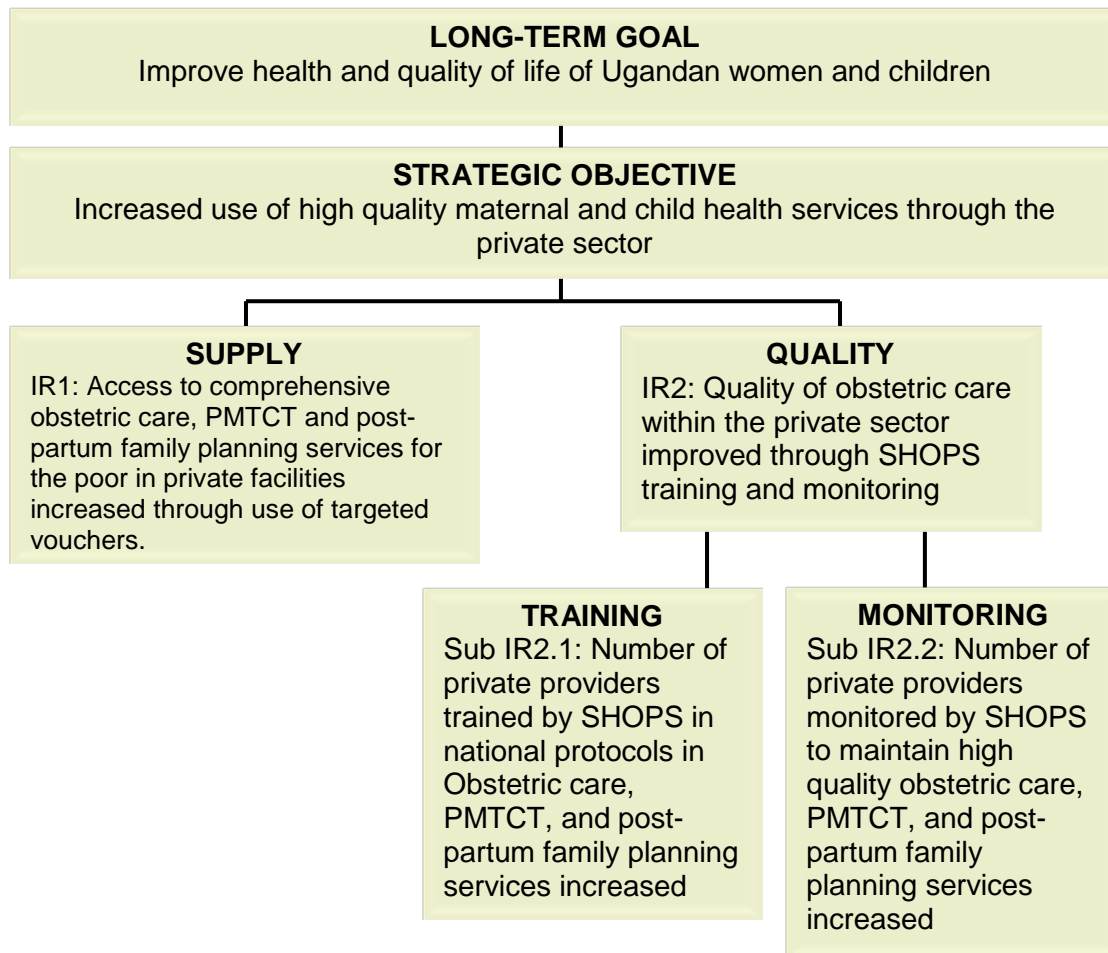
2.3 DESCRIPTION OF THE HEALTHY BABY VOUCHER PROGRAM

Voucher programs began in Uganda in 2006.

- 2006: The Healthy Life Voucher program, focusing on sexually transmitted infections (STIs), was funded by KfW (the German government's development bank) and implemented by MSI, working with pharmacies in poor districts in southwestern Uganda. Over 30,000 participants received STI testing and treatment through this program.
- 2008: KfW, joined by the World Bank's Global Partnership on Output-Based Aid (GPOBA), expanded the program as the Reproductive Health Voucher Program (RHVP), targeting poor families (based on a poverty-grading tool developed by MSI). It included the Healthy Baby voucher, to be redeemed at accredited private facilities for a package of maternal health services. By the end of the program in 2012, approximately 65,600 babies had been delivered under the RHVP.
- 2012–2014: USAID took over funding of the Healthy Baby Voucher Program, as part of its Saving Mothers Giving Life initiative. The SHOPS project implemented the HBVP, working with its in-country implementing agency partner, MSU.

This costing study focuses exclusively on the HBVP. The program was implemented in all four target districts of the Saving Mothers, Giving Life (SMGL) Initiative: Kyenjojo, Kabarole, Kamwenge, and Kibaale. Figure 1 shows the program's results framework: goal, objective, and detailed approach.

FIGURE 1. HBVP RESULTS FRAMEWORK



SHOPS contracted with 48 private providers in Western Uganda to provide services for the HBVP, including 24 for-profit facilities and 23 nonprofit facilities as well as the private wing of a public hospital. In the first phase of the program, the HBVP team worked with the district health office to identify eligible health facilities to participate in the program. The team made a list of eligible facilities, and MSIU assessed these facilities using a facility accreditation tool. They rated the facilities on eight key areas: human resources, infrastructure, equipment, drugs and medical supplies, laboratory services, infection control capacity, records management, and referral protocols. Facilities that met the scoring criteria on these requirements were included in the program. Some others that came close to meeting the minimum scores were given the chance to address the identified gaps using their own resources; they were then re-assessed and were included in the program if they met the minimum requirements. The HBVP selected 24 facilities in the first phase. In the second phase of the program, the program added 25 private facilities that were originally implementing a voucher program managed by Baylor Uganda. At that time, Baylor transitioned their voucher program to the public sector facilities. All participating facilities received training in maternal health, documentation and claim processing, and also received a supply of autoclaves.

As the managing agency, MSIU collaborated closely with district health teams and the Ministry of Health. Together with the District Health Officers (DHO) and political leaders, MSIU carried out community mobilization activities and joint supervision visits to facilities, and streamlined reporting from the facilities to the district health offices. In addition, HBVP collaborated with

other key stakeholders, including other USAID implementing partners in SMGL districts, through coordination meetings at the national and district levels.

Under the HBVP, women could purchase vouchers at 3,000 Ugandan shillings (Ush) each (approximately \$1.20 USD) from a Village Health Team (VHT) volunteer in their community. This voucher gave them access to a package of services at no additional cost that included:

- Four antenatal care (ANC) visits, including treatment for malaria in pregnancy
- Safe delivery, including caring for complications, in a high quality facility with skilled attendants and sufficient supplies
- Transportation services, such as ambulance or public transport, to a health facility for delivery, and/or to a referral facility when needed during delivery
- Postnatal care (PNC) including physical examination, nutrition, and immunization advice
- Counseling on family planning services post-delivery
- PMTCT, including HIV testing and counseling during ANC and lifelong treatment for mothers found to be positive

HBVP partnered with 48 private health facilities in western Uganda: 18 faith-based, 5 nonprofit, and 25 for-profit clinics and hospitals. The majority of the facilities (26) were small, with about four to six staff members, while 16 were medium-sized clinics with six to eight staff members. The program included five hospitals that functioned primarily as referral facilities. Small and medium-sized facilities provided day-to-day maternity care to the voucher clients. Clinical officers or nurses operated these facilities.

2.4 PROGRAM ACHIEVEMENTS

Under the SHOPS project, the HBVP achieved the following results:

- 36,900 vouchers distributed, of which 96 percent were redeemed for at least one service.
- 34,700 women received antenatal services, of whom 30 percent took advantage of all four ANC visits.
- 27,000 babies delivered in facilities under skilled care, representing 74 percent of mothers who purchased vouchers.
- 15,000 women received postpartum care services, or 74 percent of women who purchased vouchers.
- Nearly 700 women were found to be HIV positive during ANC visits, and all of them received treatment on-site or were referred for care.

3. METHODS

3.1 DESIGN

This study was designed to estimate actual costs incurred by providers, including staff, drugs, infrastructure, and other operating costs. Estimates were based on the treatment costs recorded by the facilities, plus estimated additional costs such as for infrastructure and equipment. The study used a predominantly quantitative design, with additional context provided by qualitative in-depth interviews with providers. Researchers compared the characteristics of voucher and paying clients, the benefits and challenges experienced in implementing HBVP, changes to the facility resulting from participation in HBVP, and perceived effects of HBVP on other private health facilities in the vicinity.

3.1.1 QUANTITATIVE: COSTING APPROACH

The quantitative component estimated the actual costs incurred by HBVP providers to deliver maternal health services, and compared them with the voucher reimbursement rates and fees charged to non-voucher clients. SHOPS used a two-step costing approach. First, we used the step-down facility costing method to calculate the overall average costs of providing outpatient and inpatient care, i.e., the cost per outpatient visit and cost per inpatient day. Secondly, using the ingredients approach, we estimated the cost of providing care for specific services. The ingredients, or “bottom-up” approach, calculates the cost of a service by compiling all the resource inputs and their costs that go into the provision of the service. This includes staff time, drugs and other medical supplies, diagnostic tests. After researchers determined these direct cost inputs, indirect (overhead) costs are accounted for by applying an indirect cost rate. We calculated the indirect cost rate as the ratio of indirect costs (maintenance, utilities, depreciation, rent, administrative salaries, etc.) to direct costs.

Data were obtained from financial records, health management information systems (HMIS), service delivery registers and from interviews with the providers.

3.1.2 QUALITATIVE: IN-DEPTH INTERVIEWS

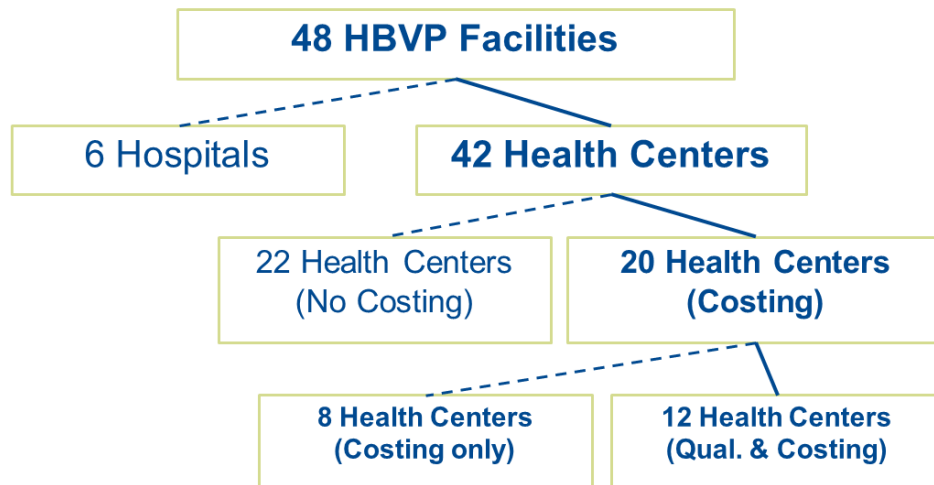
In-depth interviews (IDI) were used to address the qualitative research component of this study. We conducted IDIs with either the proprietors or with health providers who attended to maternal health clients at the program facilities. In most of the for-profit facilities, the health providers were also the proprietors of the facilities, while in the nonprofit facilities, all faith-based, we interviewed the medical head of the facility. Using the facility contact information from MSU, we made appointments with each facility ahead of the interview date; this helped ensure 100 percent interview success rate with the target respondents. A semi-structured interview guide was used to elicit information. All interviews were audio-recorded, with permission from the respondents. Notes were also taken during the interview. The audio recordings were transcribed on a daily basis, and the transcripts were used for analysis.

3.1.3 STUDY SAMPLE

The sample frame for this study was the 42 medium and small facilities that participated in the program. We excluded hospitals from our study because most of the HBVP services were provided by the non-hospital facilities, amounting to 71 percent of the value of claims.

To select the study sample, we first stratified the 42 facilities by the four program districts. Within each district, we further stratified the facilities by ownership type (PNFP and PFP). We targeted 20 facilities for the costing component of this study, selected randomly from each stratum, with two or three PFP and PNFP facilities selected per district. In total, 10 PFP and 10 PNFP facilities were selected for the costing study, including 7 medium and 13 small facilities. Figure 2 shows the process used to select the study sample.

FIGURE 2. SELECTION OF STUDY FACILITIES (QUANTITATIVE AND QUALITATIVE)



For the qualitative study, we selected a purposive sub-sample of 12 of the 20 sample facilities (Table 2). We allocated the facilities proportionately to the number of facilities sampled for the costing component by district. Thus, we sampled more facilities in districts with a higher distribution of program facilities, ensuring that small, medium, PFP, and PNFP facilities were represented in the sample. The following criteria were used to select the 12 qualitative study facilities:

1. *Representation of program districts:* We wanted to ensure that each SMGL district was represented in the qualitative sample.
2. *Facility size:* We categorized facilities as small and medium based on the number of staff and beds in order to ensure we had at least one facility of each category per district in the sample.
3. *Location:* We chose both rural and urban based facilities
4. *Willingness:* Facilities had to agree to participate in the study.

TABLE 2. HBVP FACILITIES SAMPLED, BY SIZE AND OWNERSHIP

District	Size		Ownership type		IDI Sample description
	Small	Medium	PFP	PNFP	
Kabarole	3	0	3	0	2 facilities also included in IDIs. All were PFP and small facilities
Kamwenge	4	2	4	2	4 facilities included in IDIs: 2 small PFP, 1 small PNFP and one medium PNFP
Kibaale	4	3	4	3	4 facilities included in the IDIs: 1 small PFP; 2 small PNFP and 1 medium PNFP
Kyenjojo	2	2	2	2	2 PFP facilities, all medium
Total	13	7	13	7	12 facilities sampled for the IDIs

The number of PNFP facilities visited turned out to be fewer than for PFP, even though the original random selection had yielded equal numbers. Researchers reclassified some facilities after finding that their ownership type did not fit the criteria we used to determine the study sample; time and budget constraints did not permit a correction to select additional PNFP facilities. Figure 2 (above) illustrates the sample selection procedure.

3.2 DATA COLLECTION

The costing study team consisted of eight data collectors, working in two teams of four, plus a supervisor assigned to each team. The data collectors and supervisors were selected through a competitive process. The lead researchers trained the data collectors and supervisors over three days prior to fieldwork. The training included an overview of how the health facility functions, to give data collectors an idea of what to expect when visiting the study facilities. Training also included: the basics of health facility costing, and the importance of each piece of data collected; familiarization with the data collection instrument, and how to submit the data online; piloting the data collection process at two facilities; and field logistics.

A competitively selected consultant (currently a lecturer at Makerere University) conducted the qualitative study, and he recruited the research assistant. The SHOPS Deputy Research Director trained the qualitative research team on the IDI guide and conducted a supervised pilot test of the guide in one HBVP health facility.

SHOPS used a structured web-based survey instrument designed specifically for this study. It was designed to work offline, to allow data collection to continue even without internet access. Data collectors had printed surveys to record responses in draft form. Each had his/her own copy of the printed survey, so that surveyors could collect data in separate areas of the facility and later enter them into a shared laptop at the end of the day. Data collector supervisors reviewed all surveys before submitting them through the online portal for the study. The online tool included various error checks, flagging them so supervisors could easily spot mistakes. Data collection included a systematic review of financial and health management information system (HMIS) records and discussions with health facility staff.

3.3 DATA ANALYSIS—COSTING AND QUALITATIVE

3.3.1 COSTING

Researchers analyzed data in Microsoft Excel, using a combination of top-down and ingredients approaches to determine average cost of each HBVP service. The top-down approach enabled the calculation of overall average costs per outpatient visit and per inpatient day. Most facilities only had maternity inpatients. This approach also helped to identify direct costs (DC) and indirect costs (IC). We calculated an indirect cost rate (ICR) as the ratio of indirect costs to direct costs, expressed as a percentage:

$$ICR = (IC/DC)\%$$

ICR was calculated separately for inpatient and outpatient care.

We used the ingredients approach to calculate the direct costs of the resources used to deliver each of the HBVP services: staff time; drugs and other supplies; laboratory tests; and ultrasound scans. We added indirect costs to these total direct costs to arrive at a total cost for the service:

$$Total\ costs = Total\ direct\ costs + (Total\ direct\ costs \times ICR)$$

3.3.2 QUALITATIVE

The lead consultant analyzed the data thematically from the transcripts that had been prepared by the research Assistant. ATLAS.ti 7.1.7 computer program was used for analysis. The process involved; first, creating codes deductively for each theme (i.e., relevant data segment) from the discussion guide and then creating sub-themes inductively in the ATLAS.ti program. Once most components of the coding structure had been created, transcripts in rich text format were uploaded onto the ATLAS.ti screen for review and content analysis. Meaningful quotations in each transcript were then tagged/linked to the respective thematic codes. Outputs for each thematic/sub thematic area were then auto-generated using Atlas.ti 7.1.7 query tool, and were cleaned, fed into the report, and interpreted. Interpretation focused on explaining emerging patterns, similarities, and differences among the responses obtained at the 12 participating facilities.

3.4 LIMITATIONS OF THE STUDY

The major limitations of this study were:

1. The study was conducted only in the four program districts, so the results may not apply in other districts or regions of Uganda.
2. The sample facilities did not include hospitals, as the bulk of vouchers were redeemed at health centers (71 percent by total value of claims and 88 percent by number of facilities claiming). During the program, hospitals were used mostly as referral centers for complicated deliveries that could not be handled at the lower facilities.
3. Small sample size precluded detailed analysis of some variables.
4. For some of the health facilities, incomplete financial and HMIS records were supplemented with data from registers, invoices, and supplier statements.
5. Grants and free supplies from MOH could not be accurately quantified, and therefore were not included in cost analysis.

4. FINDINGS

This section summarizes the findings from the costing data collected at the 20 target facilities, along with the qualitative data collected through in-depth interviews with 12 providers. Detailed findings are provided below, by topic.

1. *How do costs of services vary among facilities?*

Costs for the smaller health facilities tended to be higher than for medium sized facilities; one reason was the low volume of patients in the smaller health facilities. Average costs could be lowered by making fuller use of existing capacity (beds, staff, equipment, etc.) through increased patient volumes.

2. *How do reimbursement rates compare with actual costs of service delivery?*

For a few services, reimbursement rates did not cover costs. In scaling up the voucher program, a reimbursement structure would ideally take into account the cost structure for specific services, by calculating a standard weighted average cost per service.

3. *How do reimbursement rates compare with fees?*

Reimbursement rates were set by reference to the prevailing fee structures of participating facilities. While this is a common practice in voucher programs, it fails to recognize the different cost structures of the facilities involved due to their different sizes and ownership structure. For example, PNFP facilities that receive grants and other material support from the ministry of health do not experience the same cost burden as private for profit facilities without such government support.

4. *What are the providers' experiences with and opinions about the HBVP?*

The voucher program is a good mechanism for strengthening private health care service delivery, and thus for alleviating pressure on the public health system. Voucher programs can motivate greater improvements in the capacity of the private sector to deliver healthcare. Evidence from the findings shows that providers improved and expanded their practices.

4.1 PROVIDER COSTS RELATED TO MATERNAL HEALTH SERVICES

A common question is whether there are predictable cost differences between private for-profit and private not-for-profit facilities, or between small and medium facilities. Provider costs vary among the facilities, with small facilities tending to have higher average costs than medium facilities. The sample size did not permit drawing conclusions that can be generalized to the whole population. PNFP and PFP cost patterns were not clearly distinguishable: PNFP showed lower costs in antenatal care, but no consistent difference in the other services.

4.1.1 AVERAGE COSTS

As a demonstration of the variability in average costs, Table 3 gives a summary of average costs for voucher program services (excluding caesarean section, which was provided by only

one facility). Median costs are not shown, as they were quite close to the average in most cases.

Small facilities have higher average costs in all but two services: post-natal care, and urinary tract infection (UTI) treatment. One factor is higher average indirect costs for small facilities, across services, as shown in the data. Further details of these average costs are included in the annex of this report.

TABLE 3. SUMMARY OF AVERAGE COSTS (IN USH)

Facility Size	Normal Delivery	Normal Del. with Episiotomy	Post-partum Hem	ANC #1	ANC #2	ANC #3	ANC #4	Post-natal Care	Severe Malaria	Non-Severe Malaria	UTI
Small	32,141	42,034	49,204	12,214	8,734	8,756	7,557	6,040	37,294	20,705	17,597
Medium	24,745	42,069	48,892	25,023	10,870	11,540	10,684	9,316	23,803	14,385	13,742
All											
Min	9,224	10,741	4,987	5,138	2,065	1,751	1,354	481	9,765	3,986	4,937
Avg	29,552	42,046	49,110	16,697	9,482	9,731	8,651	7,187	32,572	18,493	16,248
Max	50,952	74,392	172,403	33,728	21,582	16,966	20,481	89,786	64,697	56,523	34,980

The higher indirect costs of small facilities relative to the volume of services explains why these facilities have higher average costs compared to medium-sized ones with higher service volume, as reflected in their ratios of indirect to direct costs. Thus, the indirect cost rate (applied as a multiplier of the direct costs) was consistently higher for small facilities than medium facilities, as shown in Table 4. Indirect costs include administrative costs, depreciation of fixed assets, utilities (water, electricity, fuel, communication), and building maintenance.

TABLE 4. AVERAGE INDIRECT COST RATE

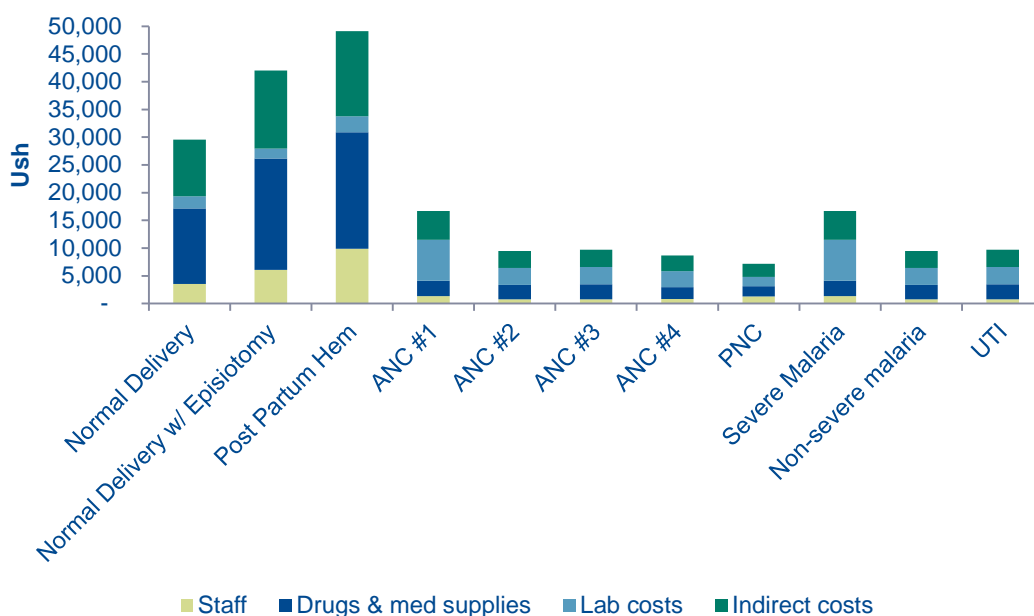
	Maternity	Outpatient	ANC	PNC
Small	62%	53%	57%	63%
Medium	45%	43%	44%	44%

4.1.2 COMPONENTS OF UNIT COSTS

As demonstrated in Figure 3, the most significant components of costs are drugs, medical supplies, and indirect costs. Staff costs are the least significant, which could be due to the low salaries that nurses are paid. Government data indicate that over 46 percent of those leaving the PNFP facilities joined the public sector, and that low salaries were the most common reason given for leaving (Ministry of Health, n.d.).

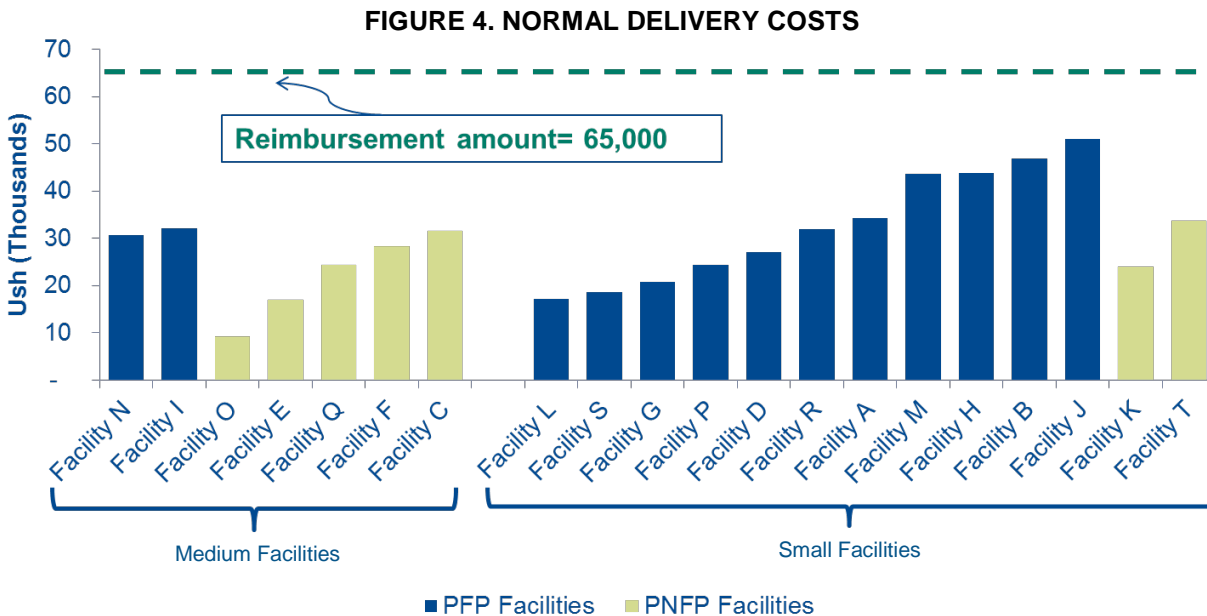
Nurses frequently leave the private sector due to the heavy workload and low salaries, to seek better opportunities in the public sector. The public sector may be perceived as offering better remuneration due to the (possibly) lower workload and more flexible working environment, where staff may be able to do other personal activities during slack periods. According to a study by the Uganda Catholic Medical Bureau, many staff who have left PNFP units for the government units (often in the neighborhood) talk of the freedom to report late to work at their new jobs and to leave early each day, thus doing less for the same or more money (Catholic Health Network, n.d.).

FIGURE 3. COMPONENTS OF UNIT COSTS



4.1.3 COST COMPARISONS OF NORMAL DELIVERY BY FACILITY SIZE AND TYPE

Small facilities in our sample appear to have higher average costs than medium-sized ones, as indicated by costs of normal deliveries (Figure 4). Average costs for normal delivery in the two small PFP facilities were similar, but in the small PNFP facilities, we found a wide (and unexplained) variation, ranging from Ush 9,000 to Ush 32,000.



Volume of normal deliveries for small facilities averaged 328, while for medium facilities this was 490. This difference in volume helps to explain the lower costs at the medium-sized facilities.

4.1.4 COSTS OF MATERNAL HEALTH AND CURATIVE CARE

When we compare PFP with PNFP, we find that services at PNFP are less costly for antenatal and postnatal care, but they are more expensive for curative care (Figure 5). Some of the PFP providers who participated in the IDIs suggested that PNFP costs were lower because of the free drugs and medical supplies PNFPs receive from the MOH to provide maternal and child health services.

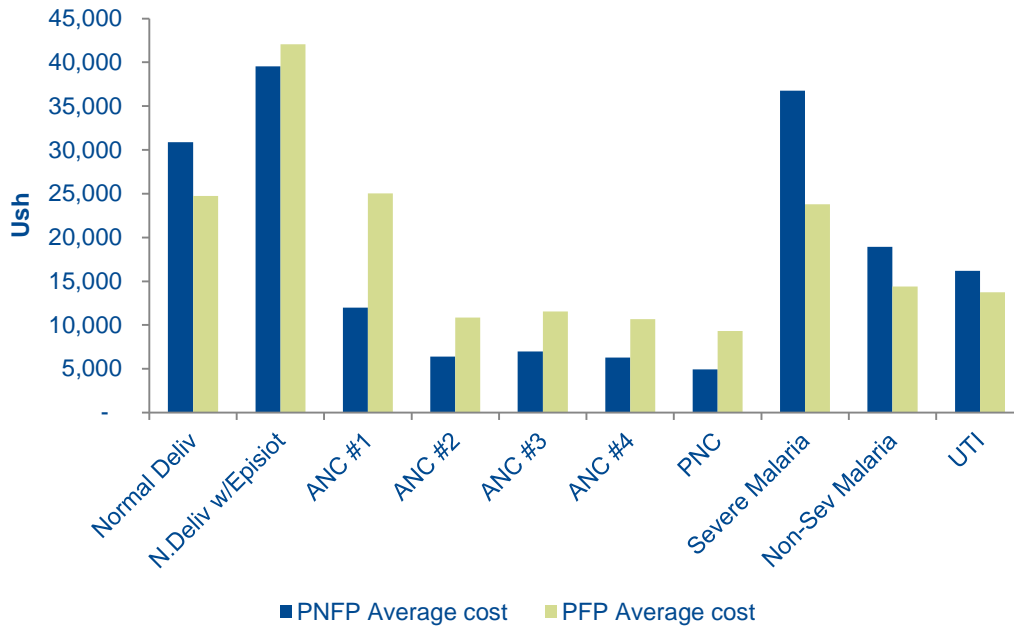
PNFP facilities receiving free drugs and consumables indicated that services related to these free medical supplies are provided at no cost to the clients. Costs for delivery of these services are thus not reflected in financial statements. However, providers noted that the supply of government drugs and medical supplies is irregular. No financial data were available at the PNFP facilities to allow us to impute a value on these donations.

In most cases, the drugs and laboratory tests prescribed, according to the information collected from the providers in the costing survey, exceeded the clinical guidelines, raising the question of whether clinicians were following the recommended Uganda Clinical Treatment Guidelines.³ However, researchers did not investigate this issue during data collection; some of these

³ The Uganda Ministry of Health recommends the Clinical Guidelines to private sector providers, but they are not legally required to follow them.

treatments may have been addressing other co-occurring health issues. In the future, it would be informative to assess adherence to clinical guidelines among private and public providers.

FIGURE 5. AVERAGE COSTS (PNFP AND PFP)

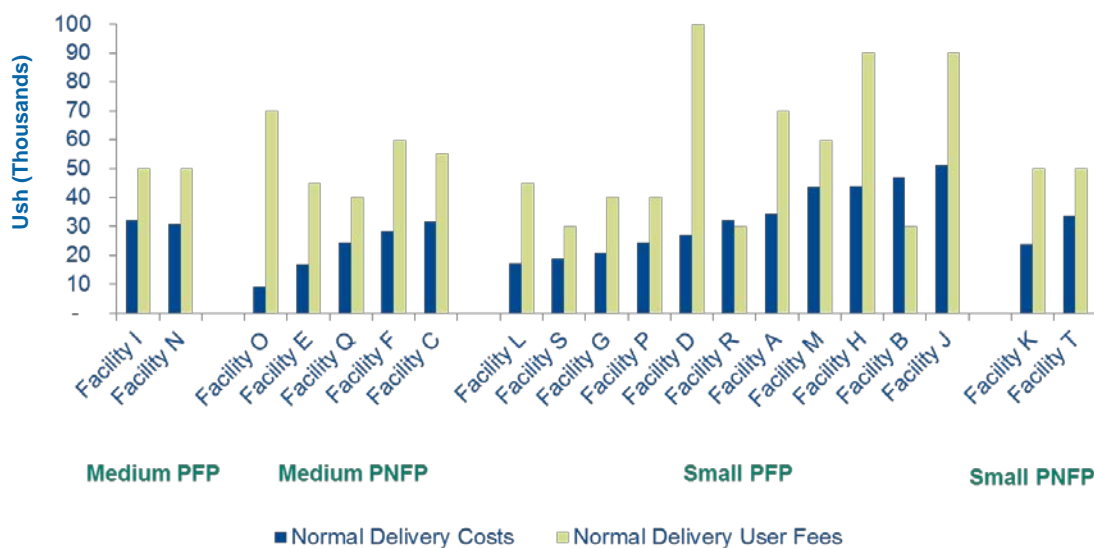


4.2 REIMBURSEMENT RATES, FEES AND COSTS

4.2.1 FEES AND COSTS

This study found that most fees charged to paying clients were higher than the actual costs of providing those services. There are many factors that go into setting fees, including the actual costs of services, competition in the market, desired profit, and the ability to cross-subsidize. However, according to observations made by the researchers regarding data availability and use, providers do not have complete cost information to inform their pricing decisions, except perhaps for such direct costs as drugs and staff salaries. This means that the fees they charge are not necessarily backed by financial information. Figure 6 shows the cost/fee relationship for normal deliveries.

FIGURE 6. NORMAL DELIVERY COSTS VS. PROVIDER FEES



Average fees charged by PNFP are consistently lower than those of PFP facilities. Their costs may also be lower, as they apparently receive grants, supplies and drugs from the government (though this support has not been examined in detail); they also receive alternative funding from donors. One PNFP proprietor explained:

We receive PHC grants from the district quarterly. We also used to get support from UNICEF for child and maternal care, but it stopped two years back. Then we had Supplemental Nutrition Assistance Program (SNAP) funding from Baylor. This one gave allowances to staff in anti-retroviral treatment and voluntary HIV counselling and testing (ART and VCT) or even VHTs for motivation. It also gave us ART supplies two years back, but now we only have the Baylor Voucher Program that caters for the transport costs of women in ANC and delivery. They can also send an ambulance for referral, but most mothers transport themselves. — PNFP Facility, Kamwenge.

Table 5 compares average fees for PNFP and PFP.

TABLE 5. AVERAGE PNFP AND PFP FEES CHARGED TO NON-VOUCHER CLIENTS (USH)

SERVICE	PFP	PNFP
Normal delivery	60,385	44,286
Normal delivery with episiotomy	71,923	57,857
ANC visit #1	30,231	14,000
ANC visit #2	17,654	10,143
ANC visit #3	17,269	9,571
ANC visit #4	16,500	9,571
Severe malaria	69,231	44,571
Non-severe malaria	31,538	22,500
UTI	27,231	22,000

4.2.2 REIMBURSEMENT RATES AND COSTS

The voucher program set reimbursement rates that were common to all facilities irrespective of size. This is a simple way to set reimbursement rates, but it means that some facilities will receive more (sometimes much more) than it costs them to deliver the service, while others may receive less than their cost for the service. Given that the providers do not have either sufficient financial information or skills to determine how much it really costs them to provide each service, they may agree to participate in the program as long as the reimbursement is reasonably close to the fees that they would normally charge.

In the private sector, one expects fees to be higher than costs so that providers make a profit. Accordingly, a voucher program should set reimbursement rates higher than costs, to motivate providers to participate. However, it is very difficult to quantify the right amount of profit to achieve this end, in the absence of studies to evaluate provider behavior. This study found that reimbursement rates were generally higher than the costs of the services; in many cases, they were equal to, or higher than, the actual fees charged to non-voucher clients/patients. Figure 7 shows the number of facilities that received reimbursements higher than their cost of service, across a range of services covered by the vouchers. The bar represents the number of facilities (out of all 20) that received more for that service than it cost them to provide the service. Overall, most facilities more than covered their costs. Only UTI services had the majority of facilities receiving less than it cost to treat it: only two facilities were covering their costs. Post-natal care (PNC) also showed a low reimbursement rate: only 13 of the 20 facilities had a positive return for those services. Note that the PNC offered to mothers did not just involve monitoring baby growth but included family planning counselling, Vitamin A, folic acid and iron supplements, and in many cases some antibiotics (especially Amoxil and erythromycin).

FIGURE 7. FACILITY REIMBURSEMENTS EXCEEDING COSTS

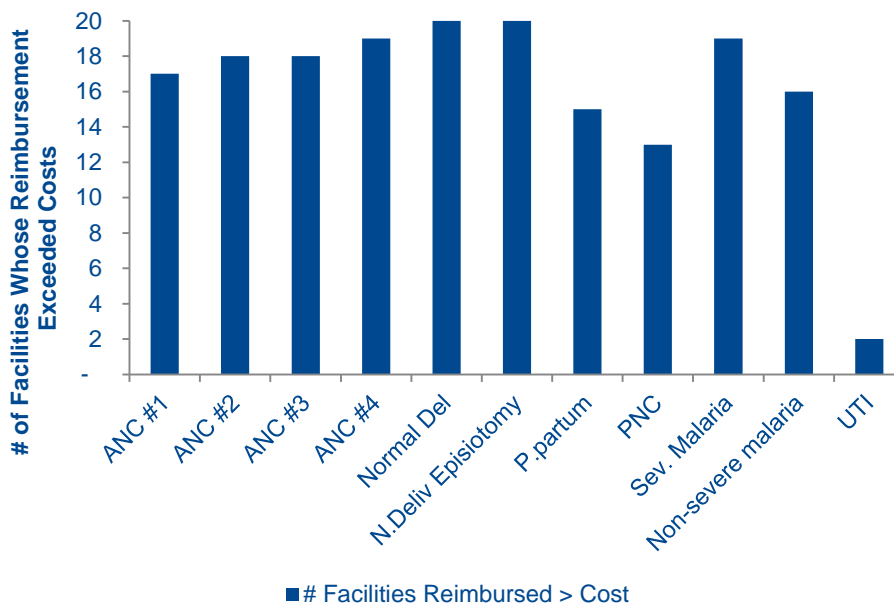
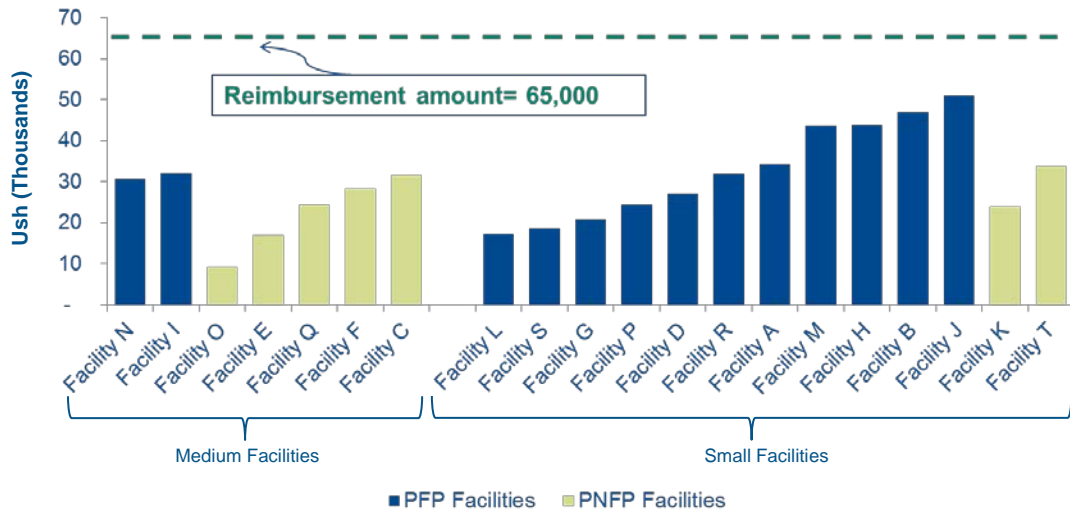


Figure 8 examines the surplus on a normal delivery. Reimbursed at Ush 65,000, all facilities received more than it cost them to deliver the service. The surplus ranged from Ush 14,048 to Ush 55,776. Only one facility provided caesarean section, and this was also fully reimbursed.

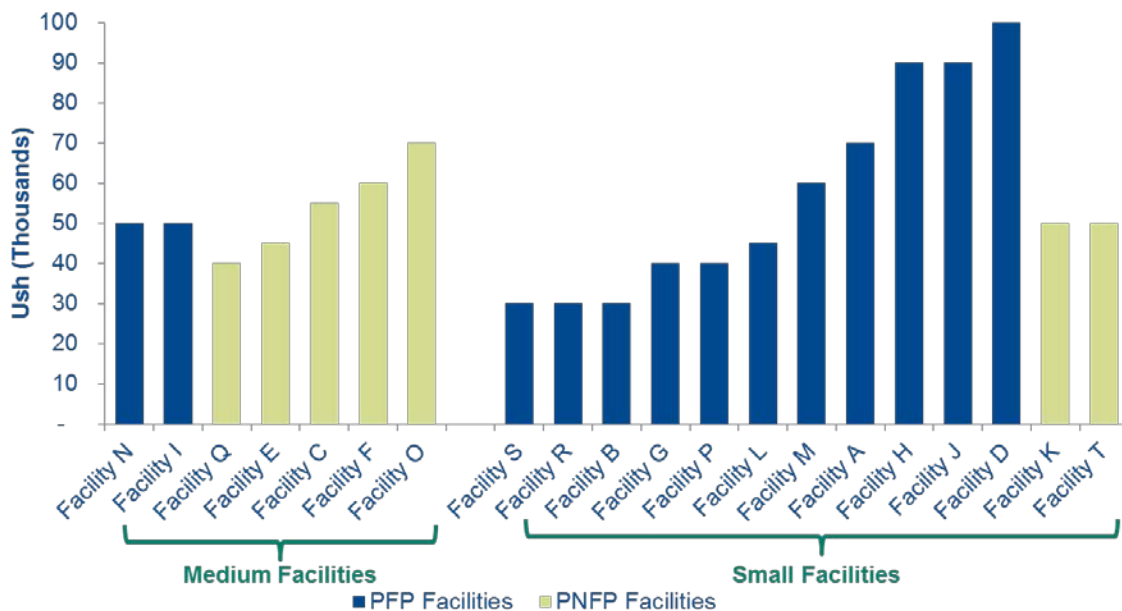
FIGURE 8. NORMAL DELIVERY REIMBURSEMENT AND COSTS



Facilities are reimbursed for the cost of transport for referral of patients who develop complications that require a higher level of care than they can provide. The transport reimbursement, however, does not cover the staff time of preparing the mother for transfer, nor for accompanying her to the referral facility.

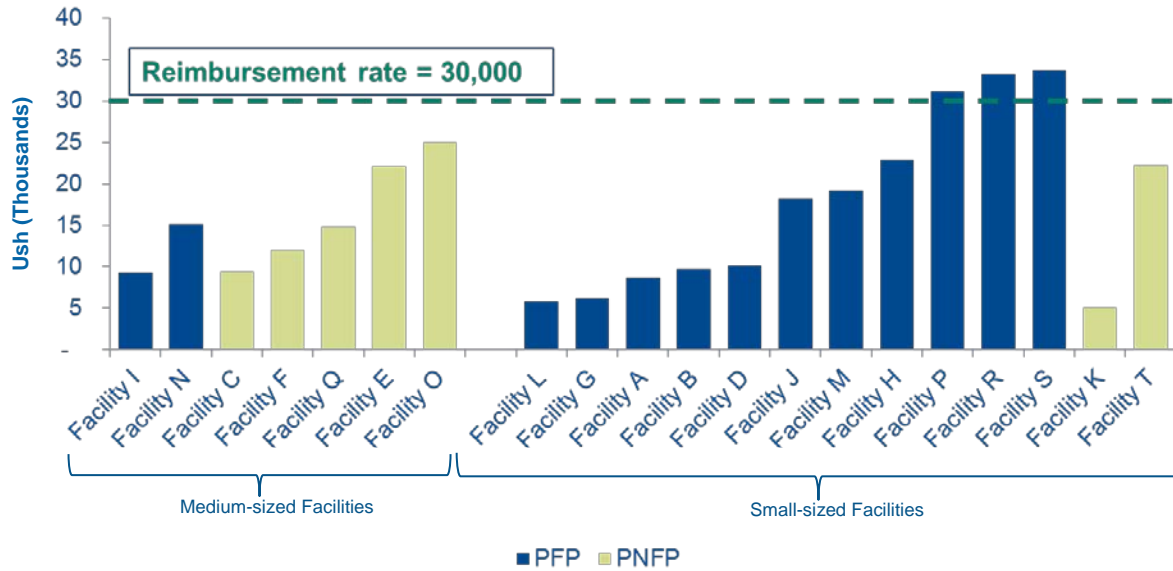
Reimbursement rates were also higher, in most cases, than the fees providers charged to non-voucher clients for the same service. Figure 9 compares reimbursement rates to facility fees for a normal delivery. Fifteen facilities (6 medium-sized and 9 small) received reimbursements for normal delivery that were higher than the fees they charge.

FIGURE 9. REIMBURSEMENT RATES VS. FACILITY FEES



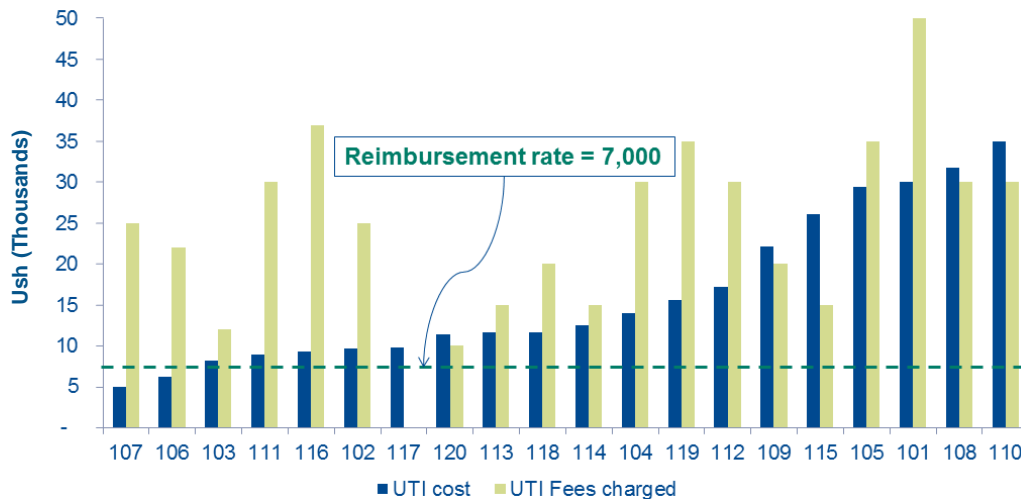
A similar result obtains for ANC visit #1 (Figure 10). Only three facilities had higher average costs than the Ush 30,000 reimbursement. These were all small PFP facilities.

FIGURE 10. ANC VISIT #1 REIMBURSEMENT VS. COSTS



For UTI treatment, costs and fees were generally higher than the reimbursement received (Figure 11). The providers interviewed gave their treatment protocol for the most common UTI they encounter. It is not clear how the reimbursement rate was set, given that it is lower than the fees charged by all the providers in the sample.

FIGURE 11. UTI COST, FEES, AND REIMBURSEMENTS

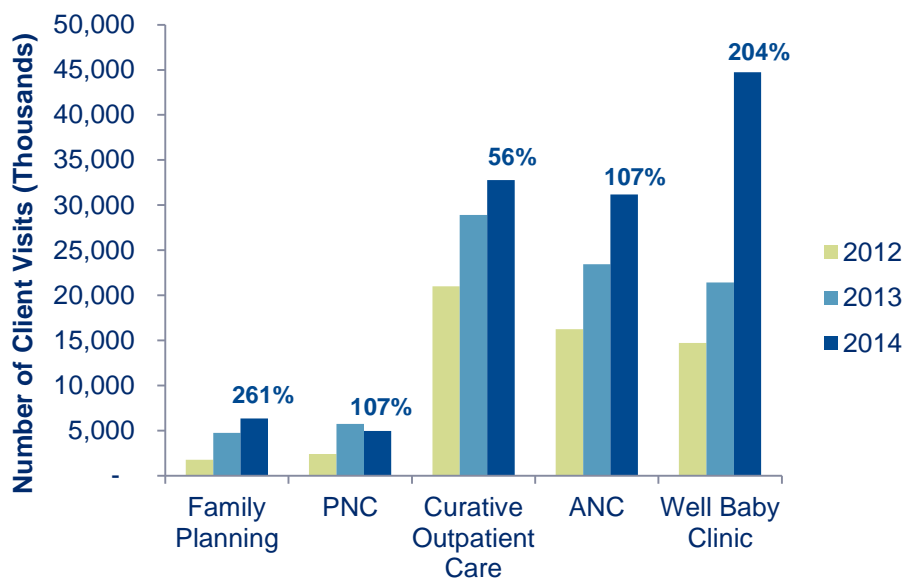


4.3 UTILIZATION OF FACILITIES INCREASED OVERALL

During the period that the voucher program was active (2012–2014), utilization of services increased both in services covered by the program and in other services as well (Figure 12).

Family planning increased by 261 percent, PNC by 107 percent, curative care by 56 percent, and well-baby services by 204 percent. These increases seem to suggest that the voucher program attracted use of other services, as mothers took advantage of being at the health facility for their maternal health.

FIGURE 12. TRENDS IN SERVICE UTILIZATION



These findings from service statistics are corroborated by the observations of providers who participated in the IDIs. All reported an increase in client volume during the program period, an increase they linked with their participation in the voucher program, as in these comments:

We used to deliver 10 mothers per month before the HBVP. The number increased to between 30 and 40 when HBVP came. — PNFP facility, Kyenjojo district.

Before HBVP, I had 30–40 deliveries per month. During HBVP it peaked at 93 per month. Now that the program has ended, I get about 50 deliveries/month. — PFP facility, Kabarole district.

When we were having the program, we even increased on the number of health workers ... you could not work upon all clients ... We increased the number of health workers so that we can catch up. — PFP facility, Kamwenge district.

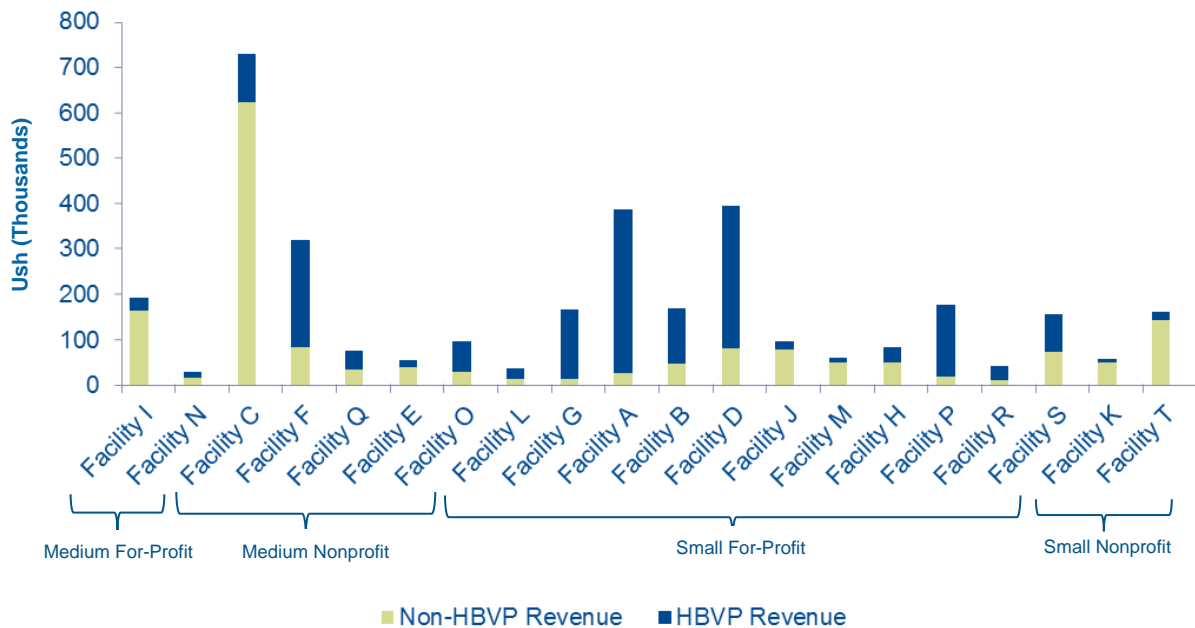
However, regardless of these findings, since we do not have comparison data or a control group from non-voucher facilities, we cannot make a causal claim of vouchers driving service utilization.

4.4 CONTRIBUTION OF HBVP TO FACILITY REVENUE AND PROFITS

4.4.1 HBVP REVENUE

The HBVP provided a major revenue stream for participating facilities. Voucher revenue represented more than 50 percent of total revenue in 11 out of the 20 facilities and was an especially important source for the small PFP providers (Figure 13).

FIGURE 13. FACILITY HBVP REVENUE AND NON-HBVP REVENUE



During the in-depth interviews, all the providers interviewed expressed the view that their participation in the HBVP resulted in increased revenue and profitability. The following quotes illustrate this observation:

Our income improved greatly. HBVP came when I had just lost my husband. It found me badly off. I had only Ush 1000. It was a miracle for me. — PFP Facility, Kabarole district.

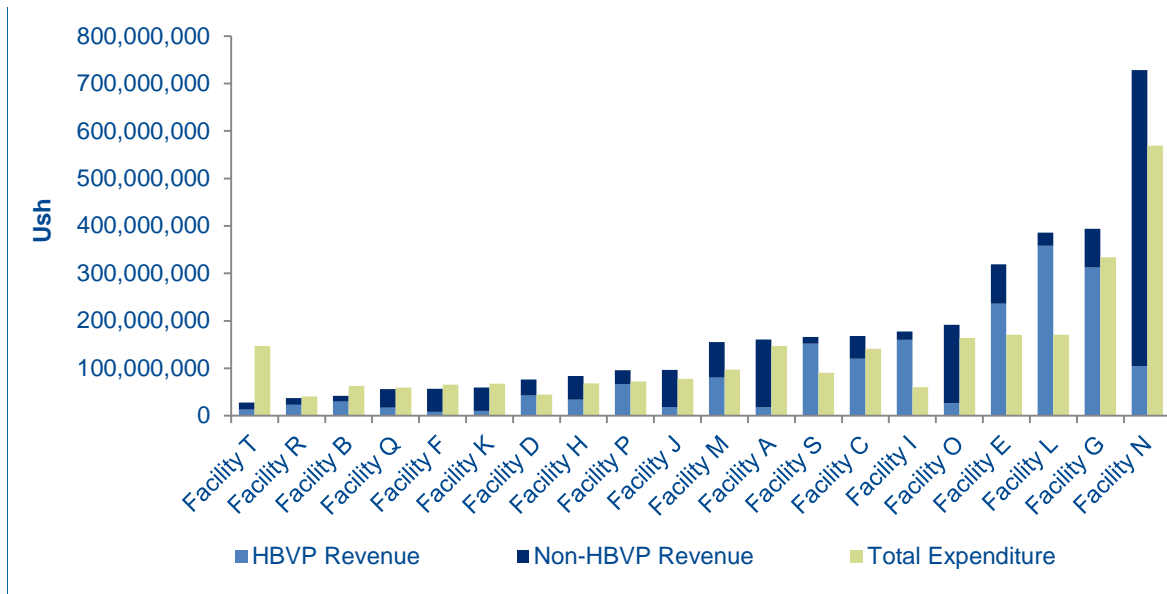
Revenues increased, yeah the revenues increased...that was a benefit. — PNFP Facility, Kibaale district.

Our revenues improved by 30 to 40 percent and staff morale went up because I paid them an extra allowance of 40,000 and gave them breakfast because they were too busy. — PFP Facility, Kibaale.

4.4.2 PROFITABILITY

Of the 14 facilities that broke even or generated a profit, 11 facilities only broke even or made a profit with the inclusion of the HBVP revenues. In Figure 14, the red and blue bars represent HBVP and non-HBVP *revenue*; the green bar represents total *expenditure*. The difference in height between the red/blue and the green shows the profit or loss the facility made in 2014. Six out of 20 facilities (facilities T, R, B, Q, F, and K) experienced a loss during this period, even with HBVP revenues. Three facilities made a profit, even if HBVP revenues are excluded (facilities S, I, and E).

FIGURE 14. FACILITY INCOME AND EXPENDITURE



4.4.3 HOW THE ADDITIONAL REVENUE FROM HBVP WAS USED

IDI respondents indicated that they greatly valued the HBVP program. Several material benefits of the program were cited, including: funding structural improvements, helping to maintain drugs stocks, acquiring new equipment, and improving human resources. These improvements were judged to have improved the private provider businesses across several dimensions.

Structural improvements

The program impacted structural improvements in the participating facilities in two ways: improvements undertaken by the providers to meet the minimum selection criteria into the program; and subsequent improvements resulting from the additional income from the HBVP.

To be selected into the HBVP, facilities had to meet certain thresholds, one of which was the facility’s capacity to handle an increased volume of clients. Related criteria included bed capacity, staffing composition and number, and equipment. Those facilities that did not qualify but were interested in participating in the program invested their own resources to address any critical gaps that disqualified their facilities.



Renovations made in a PNFP facility in Kyenjojo district, using additional revenue from HBVP

“As the program started, there were some requirements which were needed for the facility to start to provide the services. ... Part of it was a sort of quality check list, what things you have at your facility and what is missing.” — PFP Facility, Kabarole

Subsequent facility improvements were attributed to the additional income opportunity created by the program. All 12 facilities that participated in the qualitative study reported investing profits from the voucher program, as well as from personal or borrowed funds, to improve the physical structure of their health facilities, with the aim of better meeting program results. Examples of improvements mentioned included renovations, facility expansion, completion of ongoing construction, building of placenta pits and installation of solar systems to support laboratory tests, and in-patient services. Providers stated that these improvements had a positive impact on their service delivery environment and safety, created more space in the wards, lit up the facilities at night and attracted more clients.

Various quotes from the providers describe the improvements they made to their facilities:

“The clinic is now much better. All the rooms have ceilings, tiles, information, education and communication (IEC) materials and equipment.” — PFP facility, Kamwenge.

“I renovated the maternity and outpatients department (OPD) building to cover some cracks in the floor and painted the wall.” — PNFP Facility, Kyenjojo.

“We have lit up our maternity with solar.” — PNFP facility, Kamwenge.

“I completed and furnished this facility that is housing an entire HC IV clientele. I also bought three acres of land for expansion within the trading center.” — PFP facility, Kibaale.⁴

“I repaired the clinic and put up a maternity ward using the HBVP money. I was in a small place—a garage. I almost refused to join the HBVP because I said I am not worthy of it but they said, start slowly. You will manage. Money came. I saved it and invested in the facility. I also put up a new 10 bed maternity and I am now looking for money for more equipment.” — PFP facility, Kabarole



A 10-bed maternity ward which was previously a garage, renovated and equipped with revenue from the HBVP.

⁴ HC IV refers to the official Ugandan designation of Health Center Category IV, the highest level of health center, equivalent to a mini-hospital.



A facility in Kibaale completed and furnished with HBVP revenues

There was also a view that revenues from the program have also supported business growth in all the participating facilities, spilling even to districts outside the program, as some of the providers expanded their geographic coverage. With the motivation of more income from the HBVP, one provider in Kabarole established a facility in a very remote village that had no health facilities in the area. Another PFP provider, in Kamwenge, observed, “We have built another medical facility in Isingiro district and bought two acres of land here for our expansion in the near future.”

Procurement of drugs, consumables, and equipment

Responses from all 12 facilities reported major improvements through using the extra revenue to improve drugs, consumables and equipment stocks. The assured cash flow through HBVP gave providers the capacity to keep on hand adequate pharmaceutical supplies. A PNFP manager in Kibaale said, “Our revenue improved, allowing us to buy drugs in bulk.”

All HBVP providers received a supply of autoclaves from the project whether or not they already had one, supplied by the project as part of the intervention. In addition, facilities purchased various other pieces of medical equipment, including items such as delivery kits, delivery beds, and especially maternity beds (mentioned in all facilities, ranging from 5 to 10 beds). Facilities at HC IV/referral level also reported purchasing a C-section set (procured by a PFP facility in Kyenjojo) and an additional advanced oxygen machine (procured by a PFP facility in Kibaale). One PNFP in Kyenjojo also procured a TV for the waiting room.

“Our equipment improved because we added three more delivery kits and one C-section set to be ready for a scenario where three mothers are delivering at ago.” — PFP facility, Kyenjojo

“We bought a TV for the waiting clients, a delivery bed and an autoclave for sterilization of equipment. Now we have an electric one plus the charcoal machine MSU gave us.” — PNFP facility, Kyenjojo

“We got an oxygen machine from MSU and an autoclave for sterilization of equipment.”
— PFP facility, Kamwenge

The four facilities in Kibaale and one in Kamwenge district (three PNFP and two PFP) also reported buying cars, to ease referrals of emergency clients and to facilitate office work. The manager of a PNFP Facility in Kibaale explained, “We added equipment and a vehicle (Toyota Noah) for referrals and office use.” All the cars were reportedly paid for from the revenues from the project.



A car purchased by a PFP facility in Kamwenge district, used to transport referral clients

HUMAN RESOURCES

All facilities reported that the additional income from the voucher program led to improvements in staffing levels, compensation, and timeliness of pay. Due to the increase in client volumes resulting from the HBVP, the staff at HBVP facilities reportedly complained about the volume of work versus their pay. Most of the facilities responded to the work volume concerns of the staff by increasing salaries and hiring more workers.

“When we were having the program we even increased on the number of health workers...you could not work upon all clients... We increased the number of health workers so that we can catch up.” — PFP, Kamwenge district.

“We raised the number of our staff from four to thirteen by adding nine more staff members. They included two midwives, one clinical officer, two enrolled comprehensive nurses, one laboratory assistant, two cleaners and two CBDs.” — PNFP facility, Kibaale district.

“I had only three nurses so I recruited four more including one enrolled comprehensive nurse with midwifery, one enrolled comprehensive nurse and two nursing assistants.” — PFP facility, Kabarole.

“I increased staff by one nurse to specifically handle paper work.” — PFP facility, Kyenjojo

To motivate staff, most of the facility proprietors increased staff salaries, and a few also paid performance-based allowances.

“I used it to improve staff motivation by raising staff (midwife) salaries from Ush 250,000 to 300,000. Now that the project has ended salaries have gone back to Ush 250,000.”— PNFP Facility, Kibaale

“Our revenues improved by 30-40 percent and staff morale went up because I paid them an extra allowance of 40,000 and gave them breakfast because they were too busy.” — PFP Facility, Kibaale

“We were able to pay staff and increase their salary by 20 percent.” — PNFP Facility, Kamwenge

4.5 UNPLANNED OUTCOMES, POSITIVE AND NEGATIVE

4.5.1 COMMUNITY OUTREACH

The results from the IDIs revealed that there was a keen interest among providers to ensure that distribution and redemption of vouchers were maximized. A majority of the providers reported developing creative strategies to increase awareness about HBVP, targeted program beneficiaries and procedures for obtaining vouchers. A key strategy used by the providers was community outreach. All PNFP facilities (five) and more than half of the PFP facilities (four) indicated that they started conducting community outreach programs. While some of the PNFP facility respondents stated that they sometimes received grants from government for outreach—especially for immunization campaigns and malaria—the grants were irregular.

We are having a problem with the government quarterly grant. For example, since October, 2014 [to April, 2015] we have not received that money. So we are following why the government hasn't given us. Because after immunization, outreach of those people (staff), are expecting to have some money to eat (for meals). — PNFP facility, Kyenjojo.

The need to mobilize women to buy and redeem vouchers from the HBVP influenced these PNFP facilities to invest their own resources to undertake community outreach, even when government grants had not been disbursed.

We mobilized voucher holders to come to the facility for free maternal services during immunization outreaches [sic]. We tell them in these outreaches not to deliver in villages but to make use of the cards available, to deliver in the facility for free. — PNFP facility, Kibaale.

Yes, during our outreaches [sic] we would capture them by telling them about the free HBVP and other services in our facility. We would also do health education particularly, why it is important to deliver in a HC. This is why our numbers went up. — PNFP facility, Kamwenge.

The providers interviewed emphasized that this is not a usual practice for private providers, especially for PFP facilities. They noted that the main motive of this involvement was to increase awareness about HBVP and to encourage qualifying women to take advantage of the program.

4.5.2 INTEGRATION

Eight of the 12 providers integrated health education into their community outreach activities, covering maternal health, HIV counselling and testing, and family planning. Albeit with irregular government funding, a few of the PNFP facilities already had outreach programs to conduct interventions such as immunization and malaria testing using rapid diagnostic tools (RDT). All facilities also introduced and publicized some free or subsidized services, with the intent of attracting both voucher and non-voucher clients. These services included free child health services for mothers who already had children (e.g., immunization and growth monitoring), providing some drugs at no cost to the clients, family planning counselling and method provision postpartum, and HIV counselling and testing.

We provided free general treatment (i.e., case management) and homapak (paracetamol) during school outreaches, to make people feel that this is their facility. — PNFP facility, Kibaale.

4.5.3 SKILL DEVELOPMENT

Besides involvement in outreach and offering some services free of charge to clients, all providers reported acquiring new skills from the MSU training and mentorship, resulting in the introduction of new services. These included resuscitation of newborn babies, pelvic examinations, and management of high blood pressure among pregnant women.

We got training from MSU on resuscitation of newborns and handling of expectant mothers with high blood pressure. Now we offer all these. — PFP Facility, Kamwenge

Three staff members (2 midwives and 1 clinical officer) were trained in family planning and HMIS documentation ... The benefit is that before the introduction of the HMIS we were not doing pelvic examinations, but because we need those details in the HMIS we now do those tests. — PNFP Facility, Kamwenge

In Kabarole, one participating provider — a renowned retired midwife — reported receiving referrals of cases deemed complicated from a nearby public HC IV; she also volunteers her time to provide free services to the public facility. She observed:

Most of my clients are young women in their first pregnancies because they trust me more. Even in the public HC IV they send them to me. They even call me for meetings, and I am on the health committee with the HC IV. I go and supervise quality. The little I know we share. — PFP Facility, Kabarole

The provider trainings and workshops apparently contributed to establishing networks among participating providers and sharing new ideas, as indicated in this quote:

The training workshops brought participants together as they supported inter-facility networking, exchange of ideas and best practices. During these workshops for example, we hatched an idea of adopting an insurance scheme for maternal health services. We are picking this from the HBVP model. — PFP Facility, Kibaale

4.5.4 PERCEIVED NEGATIVE EFFECTS

Despite the positive implications of the program, there were also some concerns noted. The IDI participants noted that non-participating facilities, both public and private, saw a reduction in client loads. In the overextended public sector, this was seen by the IDI respondents as positive, in that the provider workloads were lowered and stock-outs of drugs declined due to lower client volumes.

They lost clients because we offer first class services free of charge using an HBVP model that runs like a medical insurance scheme. In addition we have free transport, and there is always a health worker, which is not the case in government facilities” — Proprietor, PFP facility, Kibaale (also serving as a medical officer in a public health facility).

We were having people who are coming from Rubirizi and Ibanda (other districts) ... so the effect is that they got reduced on their number of clients. — PFP facility, Kamwenge

Most of the time, the patients or the mothers admire qualified people or qualified health workers, for here they have a midwife and for those clinics they can't afford those ones. —PFP facility, Kamwenge

Other people mention that ... we don't shout to them, we take them gently ... You know sometimes they have pain, then they slap [in other facilities]. 'Haaa omusawo antile (the doctor has slapped me). So ... I'm not going there, they slap the mothers.' — PNFP facility, Kyenjojo

It was also widely noted that the program resulted in congestion at facilities, especially the small facilities, due to high demand and limited capacity. Providers made investments (described in the previous section), attempting to bring capacity to the level of demand.

At times you could get 4–5 deliveries within an hour, so you find you are supposed to basically retain a mother at a facility for 24 hours observing her. So this [demand] at times could force us to see who is more stable, if she is very stable you could discharge her before that time has elapsed. — PFP facility, Kibaale district.

The next section discusses challenges related to management of facility inventory and registers, something that private providers were generally not previously practicing in any systematic way.

4.5.5 RECORD-KEEPING ISSUES

A key health-system-related finding was the widespread difficulty with record keeping. Private providers face challenges both in maintaining adequate financial and health information records and in using this internally generated data for decision-making. They accordingly experienced high staff turnover due to the increased workload. Record-keeping issues included documentation errors and lost files, that led to delayed or rejected reimbursements.

“We had not mastered how to fill the claims ... until they gave us more training.” — PNFP facility, Kibaale

“Payments sometimes delayed for 3-4 months because not all people submitted their claims at the same time; but sometimes MSU would also delay on its own.” — PFP facility, Kabarole

The records required to be maintained for this costing study included: summary monthly and annual HMIS reports; financial reports and statements; lists of expenditures; lists of fixed assets; and pharmacy registers or stock cards. Only 7 out of the 20 facilities were able to maintain complete records that did not require supplementing from the facility's registers.

Observations made during the collection of cost data suggest that most facilities are not using the data for planning or decision making, and that the capacity for effective record keeping is very low — a limitation which (some IDI respondents suggest) puts facilities at risk of financial losses. We conclude that many facility managers were unaware of the importance of record-keeping. Indeed, all the additional revenues from HBVP were directed to support service delivery rather than administration, resulting in some losses:

Six out of ten of our claims were cancelled due to documentation mistakes. The commonest included claims submitted but not entered in the service registers or in the dispensing rolls. When they came for reconciliation in December 2014, for example, we expected 4 million but only 900,000 was approved. — PNF facility, Kamwenge.

We had no records assistant. Because of this, a mother would be worked on but you would find that the attendant forgot to get her a sticker. Sometimes the claims are documented but the case was not entered in the register. Sometimes this was because of the workloads, but where it happened the claims couldn't be paid. — PFP facility, Kibaale.

In addition to inadequate staffing to manage financial and service delivery records, the lack of computers hampered record keeping and retrieval. Only a few HBVP providers had computers and used them for recording service delivery and financial transactions.

4.6 DISCUSSION

This study on the costs of services provided under the HBVP provided an opportunity not only to calculate unit costs, but also to identify some issues confronting private sector providers in southwest Uganda as well as potential steps to support the private health sector. The study found that:

- Costs varied across all services, by facility type and size.
- Providers rarely understood the costs of delivering maternal health services, or used cost information as the basis for setting user fees.
- Reimbursement rates under the HBVP were generally higher than fees charged by the facilities and higher than the costs for providing those services.
- HBVP was an important revenue stream for the participating facilities, enabling them to make improvements in physical infrastructure and human resources to respond to the increased demand for maternal health services.
- Utilization of covered maternal health services increased in participating facilities during the program period, according to data in service delivery registers.
- Most facilities did not immediately have sufficient resources to meet the demand created by the program.
- Poor record keeping was widespread among facilities.
- The program triggered some positive unintended outcomes related to outreach, integration of services, and enhancement of provider skills.

Other studies have similarly concluded that voucher programs contribute to increasing use of health services (Meyer, Bellows, Campbell and Potts, 2011; Nguyen et al., 2012).

A key area of concern is management capacity. Many service providers established their health facility with little or no business background, relying on their prior experience as employees. The ability of the private sector to continue to make a positive contribution to the health sector in Uganda depends on viable businesses that are sustainable; for-profit facilities need to make a profit, and not-for-profit facilities need to be able to operate with limited external support.

More specifically, a key component of viability is the control of costs, so facilities can charge fees that their target patient population can afford while yielding an adequate return or profit. This study found that most providers did not have a clear grasp of how much it costs them to provide care to their patients. Timely and accurate financial information would enable them to

make informed decisions about costs and fees; and improved cost efficiency would make their services more affordable. The capacity to keep accurate, up-to-date financial and health information records is essential in tracking costs and assessing efficiency. Most health facilities did not have this capacity, and a scaled up voucher program in the future should provide basic training in financial management for the proprietors or managers of the facilities.

Reimbursement levels for the voucher program services were based on a study of fees charged by providers in the program districts (MSI, 2011). A flat reimbursement rate was set for each service, without distinction of facility size, type (PNFP and PFP), or geographic location. Such a flat fee approach is administratively easier to manage than negotiated fees for each facility or for groups of facilities. Some maternal health voucher programs do use tiered pricing, which distinguishes public from private providers and primary facilities from tertiary hospitals (Bellows et al., 2013). A tiered pricing structure recognizes the different cost structures and subsidies that some facility types may already be receiving. For example, in Uganda, the PNFP facilities receive support from MOH in the form of drugs and medical supplies, reducing their costs. While we had anecdotal evidence that these subsidies exist, we could not readily establish the monetary value of the support. The calculation of average costs for PNFP facilities did not factor in the value of MOH support.

For purposes of scaling up the voucher program, however, it would be advisable to develop a reimbursement structure that recognizes the differences in cost structure. This could be achieved by calculating a standard weighted average cost per service, and applying a variable markup on this cost to determine the reimbursement for each type of facility.

The voucher program demonstrated that it can have far reaching effects, not only on the health of mothers but also in the sustainability of private sector providers, enabling them to continue to make a positive contribution to the health sector. Many providers cited benefits to their businesses from the voucher program, including the following: improving their facility infrastructure; procuring equipment, drugs, and other consumables; hiring additional staff; and increasing salaries and allowances (to retain existing staff). These investments would likely not have been possible without the new and more reliable income stream provided by the voucher program.

The improvements in the health facility and in other inputs to service delivery contributed to improvements in the quality of care available to all patients, including those not covered by the voucher program. This is an effective mechanism for strengthening the service delivery building block of the health system; it can be combined with other pay-for-performance initiatives to target critical aspects of private sector involvement in health service delivery, especially in offering affordable services to underserved populations. Some providers noted that they had become involved in new community outreach activities as a result of the voucher program, promoting not only the use of the vouchers, but other health education messages as well.

In discussions with the heads of the facilities visited (usually the proprietor) about their treatment protocol for the services provided under the voucher program, we found wide variation in terms of drugs prescribed and laboratory tests performed. By comparing these with the Uganda Treatment Guidelines, we concluded that every provider interprets the guidelines differently. It is possible that the drug variations reflect variations in the market, as each provider sources their supplies from the most convenient and least expensive supplier. In any case, quality of care could be further enhanced by establishing regular reviews of provider practices, including adherence to clinical guidelines among both private and public providers.

5. RECOMMENDATIONS

The following recommendations are based on study questions and findings, including the opinions gathered in interviews with providers.

1. Build capacity — especially for smaller facilities — for marketing and public awareness.

Attracting more paying patients will build sustainability of the private sector and will ensure fuller use of expanded capacity (beds, staff, equipment, etc.) resulting from the additional investments stimulated by voucher programs. It will also help reduce the burden on the public health system.

2. In scaling up the voucher program, align reimbursement levels with the actual costs of services.

The reimbursement structure should take into account the cost structure for specific services, by calculating a standard weighted average cost per service. It should also include an appropriate mark-up; while a higher margin will attract more providers and can motivate facility improvements, it also limits the number of facilities supported through a fixed program budget.

3. Reimbursement rates should avoid double payment from both the voucher program and a government subsidy.

Note, however, that government support is irregular and may not be assured from year to year, or even from one quarter to another.

4. The voucher program could be combined with other pay-for-performance initiatives to expand private sector involvement in health service delivery, especially in underserved areas.

Voucher programs can motivate greater improvements in the capacity of the private sector to deliver healthcare. Evidence from the findings shows that providers improved and expanded their practices.

5. Community outreach activities and healthcare education should be encouraged as part of a scaled-up voucher program, promoting not only the use of the vouchers, but other health services as well.

Involvement of the private sector providers in community outreach fosters integration of services while increasing public access to health messages that promote positive health-seeking behaviors. It also increases access to health information by complementing the outreach efforts from the public sector.

6. Participating facilities should be offered skills training to improve systems for documentation, retrieval of information, and filing of claims.

- 7. To enable facilities to maintain adequate stocks of drugs and other medical supplies, claim processing must be managed efficiently.**

A mechanism for direct supply of essential drugs and consumables could also be considered as a component of a voucher program.

- 8. Quality of care could be enhanced by conducting regular reviews of provider practices at participating facilities, including monitoring their adherence to clinical guidelines.**

- 9. A scaled-up voucher program should invest resources in basic training in financial management for proprietors or managers.**

Participating facilities should be encouraged to hire dedicated staff to handle record-keeping, and especially to handle the higher demand during the voucher program, to enable providers to file voucher claims accurately and promptly. Financial management training should emphasize the importance of using available data (on performance, costs, and revenues) for decision-making.

ANNEX. SERVICE COSTS

Facility size and type		Normal Delivery	Normal Del w/Episiotomy	Post-Partum Hem	ANC #1	ANC #2	ANC #3	ANC #4	Post Natal Care	Severe Malaria	Non-severe Malaria	UTI
Small PFP	Min	17,203	18,630	11,336	5,826	3,280	1,751	3,333	481	16,320	6,891	4,937
	Average	32,714	43,007	44,404	18,076	11,575	10,521	9,437	6,380	32,480	22,049	17,329
	Max	50,952	74,392	129,458	33,728	21,582	23,050	20,481	21,159	50,119	56,523	34,980
Small PNFP	Min	23,948	38,420	23,589	5,138	4,646	9,099	9,314	1,505	24,737	3,986	8,873
	Average	28,818	52,091	97,996	13,658	8,927	11,153	10,585	9,253	37,448	12,320	10,103
	Max	33,688	65,761	172,403	22,178	13,207	13,207	11,856	17,001	50,159	20,654	11,333
All Small		32,115	44,405	54,680	17,397	11,168	10,618	9,614	6,822	33,244	20,552	16,218
Medium PFP	Min	30,762	30,591	48,912	9,285	2,963	7,071	1,601	747	31,244	8,445	12,499
	Average	31,464	41,571	64,997	12,197	5,165	7,377	4,113	30,266	47,970	11,859	17,293
	Max	32,165	52,552	81,082	15,110	7,367	7,683	6,625	89,786	64,697	15,273	22,088
Medium PNFP	Min	9,224	10,741	4,987	9,407	2,065	4,351	1,354	558	9,765	9,983	6,168
	Average	22,125	36,105	33,552	16,678	6,826	8,364	7,965	8,154	24,665	15,792	15,908
	Max	31,661	59,651	63,341	25,005	15,429	16,966	15,429	17,270	52,459	30,738	29,408
All medium		24,793	37,667	42,536	15,398	6,351	8,082	6,864	7,864	31,324	14,668	16,304
All Facilities	Min	9,224	10,741	4,987	5,138	2,065	1,751	1,354	481	9,765	3,986	4,937
	Average	29,552	42,046	49,110	16,697	9,482	9,731	8,651	7,187	32,572	18,493	16,248
	Max	50,952	74,392	172,403	33,728	21,582	16,966	20,481	89,786	64,697	56,523	34,980

REFERENCES

- Abuya, Timothy, et al. 2012. *A Policy Analysis of the Implementation of a Reproductive Health Vouchers Program in Kenya*. BMC Public Health 12:540. <http://www.biomedcentral.com/1471-2458/12/540>.
- Bellows, Ben, et al. 2013. *A Taxonomy and Results from a Comprehensive Review of 28 Maternal Health Voucher Programmes*. Journal of Health Population and Nutrition 31(4) Suppl. 2:S106-S128.
- Catholic Health Network. n.d. *Challenges of Retaining Health Workers in the PNFP Sector: The Case of Uganda*. Department of Health Sciences of Uganda Martyrs University. <http://www.bioline.org.br/request?hp08005>. Accessed 10/30/2015.
- Grainger, Corinne, Anna Gorter, Jerry Okal, and Ben Bellows. 2014. *Lessons from Sexual and Reproductive Health Voucher Program Design and Function: A Comprehensive Review*. International Journal for Equity in Health 13:33. doi:10.1186/1475-9276-13-33.
- Mandelli, Andrea, Lennie Bazira Kyomuhangi, and Susan Scribner. 2005. *Survey of Private Health Facilities in Uganda*. Bethesda, MD: The Partners for Health Reformplus Project, Abt Associates Inc.
- Marie Stopes International (MSI). 2011. *Report on Cost Review of the Reproductive Health Voucher Project in South and Western Uganda (Draft)*. Kampala: Kisaka and Company Certified Public Accountants and Management Consultants.
- Meyer, Carinne, Nicole Bellows, Martha Campbell, and Malcolm Potts. 2011. *The Impact of Vouchers on the Use and Quality of Health Goods and Services in Developing Countries: A Systematic Review*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.
- Ministry of Health (MOH). n.d. *Annual Health Sector Performance Report: Financial Year 2009/2010*. Kampala: Ministry of Health.
- . 2015. *Annual Health Sector Performance Report: Financial Year 2014/15*. Kampala: Ministry of Health.
- . 2010. *Uganda Health Sector Strategic Plan III 2010/11-2014/15*. Kampala: Ministry of Health.
- Musgrove, Philip. 2011. *Financial and Other Rewards for Good Performance or Results: A Guided Tour of Concepts and Terms and a Short Glossary of RBF*. Washington, DC: World Bank.
- Nguyen, Ha T.H., Laurel Hatt, Mursaleena Islam, Nancy Sloan, Jamil Chowdhury, Jean-Olivier Schmidt, Atia Hossain, and Hong Wang. 2012. *Encouraging Maternal Health Service Utilization: An Evaluation of the Bangladesh Voucher Program*. Social Science and Medicine 74(7): 989-996.
- Requejo, Jennifer, Cesar Victora, and Jennifer Bryce. 2015. *A Decade of Tracking Progress for Maternal, Newborn and Child Survival: The 2015 Report*. Geneva: UNICEF and WHO.
- SHOPS Project. 2014. *SHOPS Uganda Healthy Baby Voucher Program: From the Eyes of the Provider*. Bethesda, MD: Abt Associates Inc.
- Uganda Bureau of Statistics (UBOS) and ICF International Inc. 2012. *Uganda Demographic and Health Survey 2011*. Kampala: UBOS and Calverton, Maryland: ICF International Inc.
- World Bank. 2015. *Fertility Rate, Total (Births per Woman)*. World Bank. <http://data.worldbank.org/indicator/SP.DYN.TFRT.IN>. Accessed 11/24/2015.