



VOUCHERS FOR HEALTH: INCREASING UTILIZATION OF FACILITY-BASED STI AND SAFE MOTHERHOOD SERVICES IN UGANDA

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This case study shares the experience of Uganda using vouchers to stimulate uptake of services for sexually transmitted infections (STIs) and safe deliveries. P4P was first introduced to increase treatment of sexually transmitted infections (STIs); later a safe motherhood component was added to augment the number of facility-based deliveries. Specific vulnerable groups are targeted and receive subsidized vouchers, which they can use to access services at accredited private clinics. Findings reveal that STI symptom knowledge increased and that the reduction in syphilis prevalence was greater among respondents who lived closer to contracted private facilities. Yet STI treatment utilization did not increase significantly and the program experienced a handful of challenges (for example, with claims management). This case study provides an example of how a Government can regulate the private health sector through use of financial incentives and offers lessons for countries wishing to expand service access to safe motherhood and STI treatment through P4P engagement of private sector providers.





ABOUT THE P4P CASE STUDIES SERIES

Pay-for-performance (P4P) is a strategy that links payment to results. Health sector stakeholders, from international donors to government and health system policymakers, program managers, and health care providers increasingly see P4P as an important complement to investing in inputs such as buildings, drugs, and training when working to strengthen health systems and achieve the Millennium Development Goals (MDGs) and other targets that represent better health status for people. By providing financial incentives that encourage work toward agreed-upon results, P4P helps solve challenges such as increasing the quality of, as well as access to and use of health services.

Many developing countries are piloting or scaling up P4P programs to meet MDGs and other health indicators. Each country's experience with P4P is different, but by sharing approaches and lessons learned, all stakeholders will better understand the processes and challenges involved in P4P program design, implementation, evaluation, and scale-up.

This Health System 20/20 case study series, which profiles maternal and child health-oriented P4P programs in countries in Africa, Asia, and the Americas, is intended to help those countries and donors already engaged in P4P to fine-tune their programs and those that are contemplating P4P to adopt such a program as part of their efforts to strengthen their health system and improve health outcomes.

Annexed to each case study are tools that the country used in its P4P program. The annexes appear in the electronic versions (CD-ROM and Health Systems 20/20 web site) of the case study.

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ACRONYMS

ANC	Antenatal Care
CBD	Community-based Distributor
HSV	Herpes Simplex Virus
KfW	German Development Bank
MOH	Uganda Ministry of Health
MSI	Marie Stopes International
PNC	Postnatal Care
STI	Sexually Transmitted Infection
SM	Safe Motherhood
RPR	Rapid Plasma Reagent test for syphilis
TPHA	Treponema pallidum hemagglutination assays for syphilis
UDHS	Uganda Demographic and Health Survey
USh	Uganda Shillings
VDRL	Venereal Disease Research Laboratory test for syphilis
VMA	Voucher Management Agency



INTRODUCTION

This case study describes voucher services developed for treatment of sexually transmitted infections (STIs) and safe motherhood (SM) perinatal care in Uganda. To address very poor reproductive health outcomes and inefficient health care management, the Uganda Ministry of Health (MOH), with support from the German Development Bank

(KfW), carried out a feasibility study in 2004 and, in 2005, designed an innovative voucher program for STI treatment that restructured incentives to patients and providers. A similar process was undertaken for the safe motherhood voucher in 2007 and 2008. The pilot services were launched in western Uganda in response to the public health need: prevalence of many STIs were at epidemic levels and more than 55 percent of women were delivering at home, where they were at higher risk of life-threatening complications, rather than at a health facility.



Local clinics such as the FP Association of Uganda allow patients to redeem their vouchers for SM and STI services.



Beginning in 2006, vouchers for STI treatment were extensively marketed over the radio in the four pilot districts of Mbarara, Isingiro, Ibanda and Kiruhura. Participating providers attended to more than 19,000 patient visits in the first 22 months of the program. More than 30 percent of voucher patients were partner referrals and more than 40 percent of patients were men, who are overall much more likely to seek treatment at informal drug shops rather than at a qualified medical professional. An impact evaluation of the pilot found that knowledge of STI symptoms, an important factor in seeking treatment, increased significantly in the four districts and that prevalence of syphilis fell between June 2006 and October 2007.

The STI pilot showed that the voucher model, which directly links healthcare delivery to provider reimbursement, could be effective at increasing utilization of facility-based services. Wanting to expand the model, the MOH agreed to implement a safe motherhood voucher program. Desiring to continue the model, the MOH agreed to implement a voucher. The World Bank agreed to share funding with the German Development Bank KfW on the new service in 2007, and the SM voucher was launched in 2008 with the goal of paying for 51,000 deliveries in the first three years. The same partnership agreed to continue the STI treatment voucher with a new goal of treating 35,000 STI patients in the same three-year period.

This latter voucher program has two primary objectives: 1) to reduce the disease burden associated with maternal delivery and STIs, and 2) to make health care delivery more accountable by linking services to reimbursement. Because the program uses private providers, the voucher model also has given the MOH greater leverage to regulate private sector health care provision through the use of financial incentives. This public-private partnership can serve as a model for other governments considering strategies to work more closely with the private sector.



BACKGROUND

STIS AND PERINATAL HEALTH IN UGANDA

STIS

STIs constitute a large health and economic burden in Uganda and other developing countries: 75–85 percent of the estimated 340 million annual new cases of the four most common curable STIs (gonorrhea, syphilis, trichomoniasis, and chlamydia) occur in low-income countries, and STIs, excluding HIV, account for 17 percent of economic losses due to illness in 15–44-year-old women (Mayaud and Mabey 2004). STIs also facilitate the sexual transmission of HIV, thereby indirectly imposing additional morbidity, mortality, and economic burdens on developing countries (Grosskurth et al. 2000; Grosskurth et al. 1995).

In spite of the discomfort and long-term sequelae from many STIs and the risk of infecting others, many individuals in Uganda with a probable infection do not seek care. A 2006 population survey in western districts around Mbarara town found that the non-HIV STI burden was high; 7 percent of adult respondents had syphilis (per the VDRL test for syphilis) and 5 percent of adult respondents had gonorrhea (Bellows et al. 2007). Yet, utilization of STI treatment services was low; the same 2006 survey found that only a third of respondents who reported having any STI symptoms in the previous six months sought care.

Ugandans fail to seek treatment for STIs because of financial barriers, lack of knowledge, and concern about the quality of care. Lack of



financial resources is a major constraint. Financial barriers include the direct costs of transportation, consultation fees, and medication and the indirect costs of lost work. In the aforementioned 2006 population survey, “lack of money” was the most common reason given by respondents with STI symptoms for not seeking care (Bellows et al. 2007). In focus group discussions conducted by Steadman Associates in 2005, respondents named the cost of treatment and the lack of transport as common reasons why STI cases do not seek treatment (Hagenmeyer 2005).

Lack of information on STI symptoms and where to seek care is another common barrier to seeking STI treatment. A 1999 study in the Mbarara region noted a general misunderstanding of STIs; study participants named tuberculosis, leprosy, and skin fungal infections as being sexually transmitted (Nuwaha et al. 1999). The 2006 population survey of the voucher pilot region identified a moderate level of knowledge of STI symptoms with fewer than 50 percent of respondents able to correctly name at least two symptoms commonly associated with STIs (Bellows et al. 2007). Anecdotally, in and around Mbarara, syphilis is a term used for a wide range of health complaints from rashes to backache.

Finally, many Ugandans have a low opinion of the quality of care at clinics (Kyomuhendo 2003). Many patients did not visit public health care providers, believing that the facilities would either lack drugs or have expired drugs. Providers do not respect patients and are known to verbally abuse mothers who do not bring antenatal cards, or may disclose a patient’s STI status in gossip (Hagenmeyer 2005; Kyomuhendo 2003).

MATERNAL HEALTH

The 2006 Uganda Demographic and Health Survey (UDHS) report observed one of the world’s highest estimated total fertility rates, with an average of 6.7 children born in a woman’s lifetime (Uganda Bureau of Statistics and Macro International Inc. 2007). The same report estimated that only 43 percent of maternal deliveries took place in a health facility. It also observed apparent socioeconomic inequalities in facility-based births. Rural women were much less likely to deliver in a facility than urban women: only 40 percent of rural deliveries occurred in a clinic, compared with 80 percent of urban deliveries. Only 27 percent of women with no education delivered at facilities, compared with 42 percent among women with a primary education and 75 percent among women with a secondary education (UDHS 2006).



Women delivering outside a health facility are at high risk of maternal morbidities and death as they lack access to life-saving treatments like obstetric surgery, blood banks, and vascular constrictive medications such as misoprostol. It is estimated that 400-500 Ugandan women die in childbirth per 100,000 live births (UDHS 2006). In contrast, maternal mortality in many high-income countries is less than 15 deaths per 100,000 live births.

Yet giving birth at any health facility entails significant costs to patients' families. Even at a public facility, although patients are not typically charged for the provider's time, they must purchase the necessary medications and provide basic medical supplies. For deliveries, supplies would include gloves, gauze, blankets or sheets, and plastic bags for disposal of waste. Private facilities charge consultation fees in addition to all the above costs.

ORIGIN OF VOUCHER SERVICES IN UGANDA

KfW played an important role in conceptualizing and financing the STI pilot voucher program. For 10 years prior to the voucher program, KfW had financed the social marketing of condoms through the nonprofit Marie Stopes International (MSI). In December 2003, with the agreement

of the MOH, KfW renewed its East African HIV prevention portfolio to include: 1) a third five-year phase of a condom social marketing program and 2) collaboration with the private sector through a voucher system with a focus on STIs. The stated goal of the KfW project was "to reduce HIV transmission by developing effective and efficient allocation of all health services including those offered by the private sector; increasing preventive knowledge, attitude and behavior among the target population; reducing HIV/AIDS related stigma and discrimination, and improving access to high quality and affordably priced condoms" (Griffith 2004). KfW was interested in the voucher program as a measure that, in addition to furthering public health goals, would be a promising health finance strategy that could overcome multiple barriers to effective health care delivery.

A nurse instructs patients on how to properly complete a claims reimbursement form.





For its part, the MOH considered the STI voucher program a promising strategy to deliver subsidies to targeted groups, thus removing financial and other barriers to accessing STI treatment. It also saw the program as a vehicle for incentivizing better management in the private sector health care – the ministry felt that the program could be used to standardize the highly variable quality of private sector health care. In any case, it would have been difficult to contract public clinics due to cost-sharing constraints – reimbursements would have gone to the district health budget rather than directly to the facility, providing little or no mechanism by which to hold public providers accountable for service quality.

Procurement of financing, development of the scope of program activities, setting voucher distribution goals, and planning the program roll-out took two years. In 2004 and 2005, there were planning meetings between the MOH, KfW, Ugandan stakeholders in the nonprofit and health sectors, and European consultants with experience in voucher programs. By June 2005, the voucher concept was framed. The MOH identified the greater Mbarara region as an area with many private providers available to contract. It was also within four hours of Kampala, allowing for easier monitoring and management follow-up. MSI was awarded the role of voucher management agency (VMA) given its previous work with KfW in condom social marketing and strong institutional history running a network of reproductive health clinics. A high-level workshop was held in Frankfurt, Germany in June 2005 to raise awareness of the program among international partners and interested parties (U.K. Department for International Development, DKT International, Abt Associates, USAID, and MSI, among others). One year later, MSI organized the official program launch at the Mbarara Lakeview Resort.

Although MSI had no voucher management experience prior to June 2006, the organization did have significant experience in social marketing of condoms. That background was important to convincingly distribute STI treatment vouchers to the general adult population of the Mbarara region. MSI's capacity to manage claims reimbursement, marketing, fraud control, and other systems in voucher services grew with the program.

The SM voucher service was conceptualized in June 2006 as a way to increase the proportion of poor women delivering at a health facility. The SM service, built on top of MSI's voucher management experience gained in the STI voucher roll-out, covers the costs of three antenatal care (ANC) visits, facility-based delivery including any emergency obstetric care, and one postnatal care (PNC) visit. Included in the



ANC package is malaria prophylaxis, iron supplements for anemia, HIV screening and services, and general monitoring of the health of mother and fetus. PNC monitors the health of the newborn's and the mother's recovery. The voucher program reimburses facilities for medical supplies, examinations, drugs, and pays a consultation fee for normal and complicated deliveries.

The initial proposal called for 100,000 voucher deliveries in three years for 22 districts of western Uganda, covering a total population of approximately 8 million. In 2007, the Global Partnership on Output-based Aid (GP-OBA) at the World Bank signed the grant to finance the SM voucher services. The program was officially launched in October 2008, and the first voucher baby was born on February 28, 2009.

Like the STI voucher program, the SM program contracts with private providers. Public facilities are not included because they do not currently have the capacity to receive reimbursements directly, which is thought necessary to support provider accountability. The contracted private facilities are grouped broadly in two categories. The first tier sees patients for ANC, delivers normal births, receives mothers and babies for PNC, and conducts routine STI diagnostics and treatment. A second tier of larger facilities are referral sites for complicated deliveries and STI cases. Few facilities provide both STI and SM services; most provide only STI or only SM care.

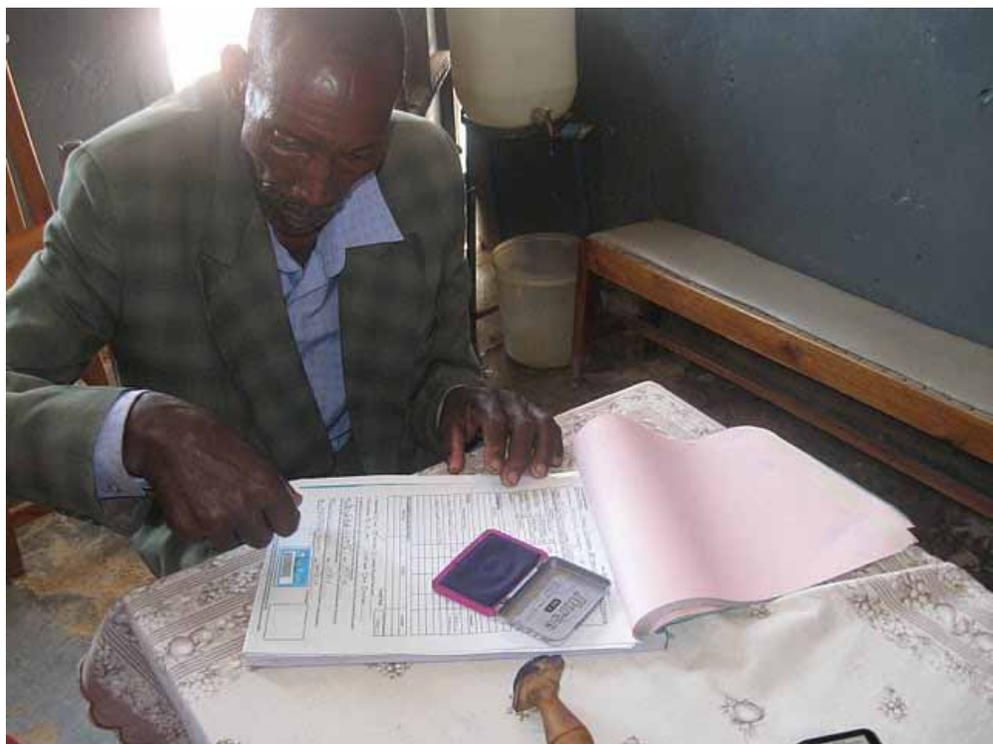
It should be noted that having champions in the MOH contributed greatly to the establishment of the voucher programs. Dr. Elizabeth Madraa of the MOH STD/AIDS Control Programme was a key supporter of the STI voucher pilot. Her steadfast involvement was important in moving the project through the ministry and seeing it launched in June 2006. Dr. Madraa worked closely with the director of MSI-Uganda, Christine Namayanja, to develop a functional program in which the MOH would help to improve both patient choice and private sector health care quality through the purchase of health care in the private market.

The SM program was championed by Dr. Anthony Mbonye, MOH assistant commissioner for reproductive health. Dr. Mbonye worked closely with MSI to design a program that would meet the MOH policy objectives of reduced maternal mortality and morbidity.

PROGRAM STRUCTURE AND MANAGEMENT

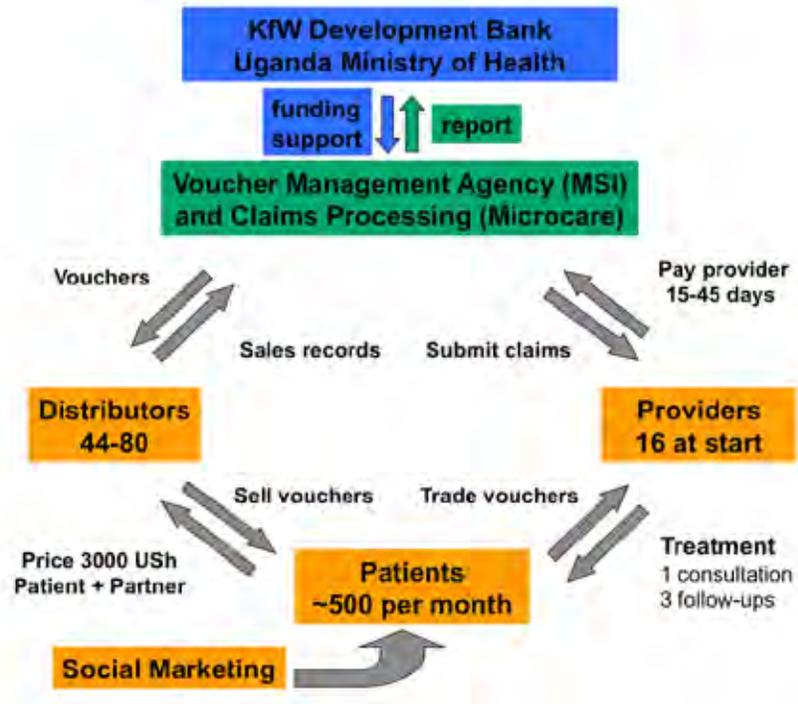
STI PROGRAM SET-UP AND MANAGEMENT

Before the STI voucher service was launched in June 2006, MSI opened a voucher management office in Mbarara town to coordinate claims processing, clinic supervision, voucher distribution, and ongoing marketing efforts. MSI had to decide how to accredit clinics, develop information systems, track financial flows, and control fraud. Figure 1 depicts the STI program structure and functions for each of the major actors. Program structure for the SM voucher service is identical, although the two programs' pools of providers, patients, and distributors are distinct.



A patient verifies the accuracy of a claims reimbursement form by providing a thumbprint.

FIGURE I: ORGANIZATIONAL FLOWCHART FOR THE UGANDA STI VOUCHER PROGRAM



STI VOUCHER PROGRAM BUDGET

Table I summarizes MSI program expenses for the ongoing STI voucher program from May 2006 to May 2008.¹ The costs of patient care in the form of payments remitted to providers for the costs of treatment (“Claims Reimbursement”) represented a relatively low 18 percent of net costs for the two years shown. The overhead item “Claims Processing” refers to claims data entry and database management and accounted for relatively high 21 percent of net costs. A nominal income (“Voucher Income”) came from vouchers sales.

¹ Although the first vouchers were not in circulation until July 2006, the program incurred early marketing costs and set-up expenses that were tabulated from May 2006 onward. Also note that in other parts of this report, the voucher claims data only continue to April 2008, whereas the accounting figures in Table I continue to May 2008.

**TABLE 1: STI VOUCHER PILOT PROGRAM COSTS
RECORDED BY MSI, MAY 2006–MAY 2008**

EXPENDITURES	2006	2007	2008	Total
	May - Dec	Jan - Dec	Jan - May	
General operating costs	\$85,608	\$107,008	\$37,717	\$230,334
BCC marketing costs	\$23,950	\$48,522	\$6,621	\$79,093
Radio and TV marketing	\$235	\$12,614	\$3,074	\$15,923
Evaluation and program start-up	\$18,407	\$12,658	\$8,754	\$39,819
Claims processing	\$69,365	\$80,245	\$16,268	\$165,877
Consultancy costs	\$34,455	\$23,196	\$33,924	\$91,576
Training and recruitment	\$42,951	\$1,420	\$970	\$45,341
Claims reimbursement	\$19,494	\$93,514	\$25,264	\$138,272
TOTAL	\$294,466	\$379,177	\$132,592	\$806,235
Voucher income	\$5,559	\$10,077	\$2,235	\$17,871
Net expenditure	\$288,906	\$369,099	\$130,358	\$788,363
% for patient care	7%	25%	19%	18%

Note: All costs were calculated using an exchange rate of US\$ 1,700 per US\$1.00, typical for this period

Approximately 15,000 patients (20,000 patient visits) were seen during this period with multiple visits for about one-third of the patient population. Based on the full program budget, the numbers of patients seen represents an average cost of \$53 per patient. The program quality could be maintained and efficiency improved with reductions in program overhead costs, particularly in the area of claims processing.

The STI voucher reimbursed the cost of lab tests, treatment, and a consultation fee separately, rather than establish a single case-based reimbursement price for all STI patients. One concern was that because providers are reimbursed for each service in the patient visit, they are incentivized to source the cheapest inputs and make a profit on the difference between what they paid for the inputs and what they were reimbursed by MSI.

FACILITY SELECTION: STI VOUCHER SERVICE

A Kampala-based consulting firm owned by Dr. Paul Kiwanuka, PS Consulting, was contracted to identify appropriate clinics for the STI program in June 2005. Providers were first identified from facility lists kept by the registering bodies, the Uganda Medical and Dentists Council and the Allied Health Professionals Council. From available records, 79



private facilities were identified in Kiruhura, Ibanda, Isingiro, and Mbarara districts. Twenty-eight facilities were surveyed with a standardized instrument (Kiwanuka-Mukiibi 2005).

MSI and the MOH agreed to a list of desirable infrastructure and equipment characteristics: a basic level of laboratory capacity (functional microscope and gram staining), presence of electricity during some part of the day, telephone or radio call, running water, one or more private treatment rooms, nearby drug store or pharmacy, toilets, waste disposal (incinerator or other), use of Jik or other sterilization, presence of a lab technician or assistant, and use of disposable products. Although only half of the facilities had running water, all had hand-washing facilities, with water carried onto the premises in jugs. Clinics in Kazo Trading Center had very limited laboratory capacity, for instance, but the clinics were contracted despite this because the area was considered underserved.

All facilities had the capacity to carry out a combination of syndromic and lab-based STI diagnosis. All but five clinics had laboratory services for STI diagnosis and treatment on the premises. Two of the five clinics had a relationship with a nearby laboratory. Of the 23 facilities offering laboratory services for STIs, most could conduct VDRL/RPR as well as do both gram staining and simple investigations requiring microscopy. Most clinics already had a referral system in place for complicated STI cases, usually relying on the nearest in patient (often public) facility.

HEALTH AND FINANCIAL MANAGEMENT INFORMATION SYSTEMS

In every voucher program, technical and financial information management is critical for fraud control, monitoring patient health, and improving facilities' technical and financial competence. In December 2005, MSI contracted Microcare Limited, a private insurance company in Kampala, to develop a database to manage the technical and financial information contained in patient claims forms; this would include identifying fraudulent and improperly completed claims. The initial concept provided a general structure that could have benefited at times from additional operational detail (Ho et al. 2009). It noted for instance that "at the end of each month, they [the providers] hand in – respectively the claims processing agency [Microcare] collects" (page 7). Left unaddressed were details such as: Was the program coordinator supposed to drive to each facility to collect claims? Were providers expected to carry claims to the Mbarara voucher management office at



their own expense? How would incentives be used to encourage claims to be submitted each month? Additional details could have helped the initial system to perform adequately. Although an interim solution was in place by 2007, the partnership between Microcare and MSI came to an end near the closure of the first pilot in 2008. MSI continued to review STI claims and archive data using commonly available spreadsheet software for the remainder of 2008.

In February 2009, MSI contracted Lotus Ltd., a Kampala technology firm, to develop a new database and information system for both the STI and SM voucher services. The new system will incorporate the lessons of the initial STI program. MSI continued to use spreadsheets to manage medical and financial information in both the STI and SM programs until the launch of the new database in January 2010.

VOUCHER MARKETING AND DISTRIBUTION

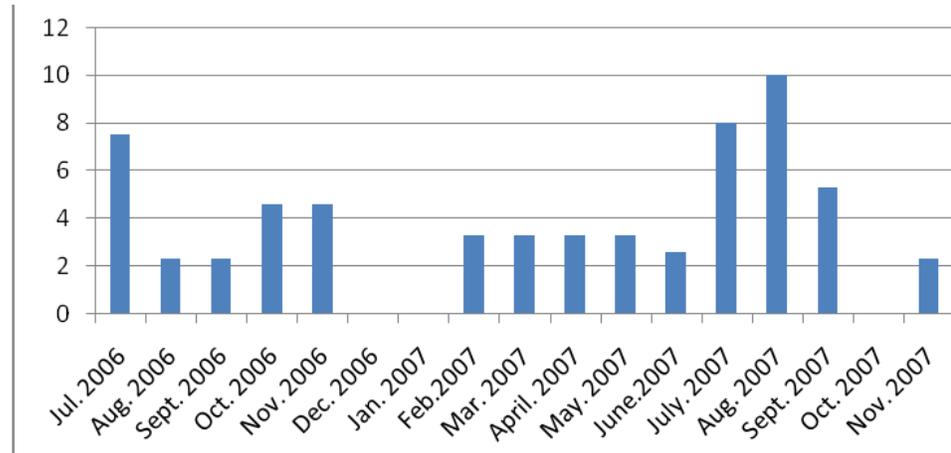
STI VOUCHERS

As noted above, the target population lacked knowledge of STI symptoms and where to seek effective care. To reach large numbers, the STI voucher program could not rely on word-of-mouth publicity; it had to run a sensitive but extensive campaign. For example, the language in promotional materials had to be sensitive in order to capture audience attention and educate them about STI symptoms and treatment.

To build its campaign, MSI drew on its many years of experience with the social marketing of condoms. In early 2006, it developed a multimedia strategy to inform the target audience and promote the vouchers: the STI voucher was branded “HealthyLife,” with a colorful logo that appeared both on the voucher and on the placards that identified participating facilities and distribution locations (mostly small drug shops). Prior to program launch in mid June, radio advertisements were run on five regional stations. Radio call-in shows and call-in quizzes also were broadcast, designed to educate listeners on STI symptoms and to increase awareness of the HealthyLife voucher. MSI staff managed market day booths that handed out program information. MSI borrowed a MOH film vehicle to show educational films about STIs and the voucher in selected villages. Figure 2 indicates the number of hours of marketing conducted each month by MSI.



FIGURE 2: NUMBER OF RADIO HOURS (ADVERTISEMENTS AND TALK SHOWS) PER MONTH OVER THE FIRST 16 MONTHS OF THE STI VOUCHER PROGRAM



Once demand was created, MSI had to be sure that the systems were in place to distribute vouchers to the population. MSI sold vouchers at small drug shops for USh 3,000 (approximately \$1.80) to any individual who complained of STI symptoms. The voucher price represented an estimated 80 percent savings over average out-of-pocket expenses of USh 15,000 for STI treatment in the region (Bellows et al. 2008). The voucher did not cover transport costs, which can be prohibitive for the poorest STI patients. In the first two years of the program, more than 80 shops participated at one time or another; at any given time, there were about 40 shops selling vouchers.

Unlike many other voucher programs, the Uganda STI service did not use an explicit poverty grading mechanism to determine voucher eligibility – given the recognized need for a provider to see all persons with a potential STI, anyone who thought he/she might have an STI was encouraged to purchase a voucher and seek treatment. It was also assumed that in a society with dense overlapping sexual networks and high HIV risk, there were significant preventive health benefits to seeing as many people as possible. Patients used half of the voucher at accredited facilities and were encouraged to give the other half of the voucher to their sexual partner.



SM VOUCHERS

It was assumed that SM vouchers would be easier to market than STI vouchers as they would benefit from word-of-mouth promotion so long as the service was generally seen as high quality. For example, mothers returning home with their newborn would be asked immediately about the level of voucher-funded care in a way that STI voucher users would not. Nevertheless, in 2009, MSI developed a radio campaign to raise awareness of the SM vouchers.

MSI contracts community-based distributors (CBDs) to sell the SM voucher to qualified low-income mothers. CBDs frequently live in the same village as the expectant mothers, or a neighboring village. They use a poverty grading tool to screen the mother to determine her eligibility for the voucher. If the woman scores low enough on the poverty grading tool, she is eligible to purchase the voucher for USh 3,000 (approximately US\$1.60).

The poverty grading tool uses deprivation indicators that MSI developed in 2007 based on participatory exercises held with community focus groups; the exercises gleaned the groups' definitions and perceptions of poverty (Porksen 2003). The indicators vary by district. For instance, community groups in the Kyenjojo district considered a woman poor if her family ate mostly cassava or potatoes without sauce with only one or two meals a day, if there was no tea or sugar in the home, if the house was built from sundried mud or grass, and if the household had to fetch water from the river without any filter, had a small plot shared with other families, had few livestock but no land for grazing, had no latrine, and visited traditional herbalists. In Mbarara district, women were determined to be poor if they ate only one daily meal of steamed, mashed bananas (matooke) or ground maize porridge (posho) with sauce, if their homes were made of sundried bricks, and if they drew water from an unprotected well, had fewer than three animals, did not own land, had to share a latrine, and could not afford to visit private clinics and government facilities accessed by transport.



CLAIMS PROCESSING

Vital to the success of any voucher program is an efficient system of claims review and data entry allowing for rapid claims processing and provider reimbursement. This need for both accuracy and speed creates an interesting tension in the claims review process: accurate claims review, which includes review for medical and financial accuracy, identifies true fraud when it happens. Speedy claims review is needed to retain providers in the program. In both voucher services, it can take more than two months from the time the patient is seen to the day the electronic payment to the provider is approved.

CLAIMS FORM DETAILS FOR STIS AND SM

In the Uganda voucher program, each provider has to file a claim after seeing a voucher patient (Annex A has copies of the claims forms). The STI claims form is a single page documenting voucher number, patient residence and demographic data, relevant health history, presentation with any syndrome, the results from any lab or clinical investigation,

the diagnosis, and treatment details including all service related costs. The patient gives his or her thumbprint, the medical officer and pharmacist (if involved) also signs. The SM service covers ANC, delivery, and PNC costs. Separate forms are used for each type of care. The ANC claim form is two pages and records voucher number, patient residence, current pregnancy statistics, relevant health history, results from physical exams, any medications given for pregnancy-related conditions, and itemized service-related costs. The delivery form is two pages and records the voucher number, patient residence and demographics, delivery presentation, the newborn's details including APGAR score, mother's post-delivery presentation, any medications given, and the itemized costs for clinical time, drugs, and other service-related costs. The PNC form is a single page and records voucher number, patient residence and

demographics, post partum history, physical examination, counseling services provided, drugs, and itemized service costs. Each claim must be accompanied by the original voucher stub, which is tagged with a unique number to authenticate the voucher.



A nurse tries a pilot mobile information technology application as part of ongoing management innovation in the OBA project.



CLAIMS REVIEW FOR STI AND SM SERVICES

The provider either periodically carries claims from his or her facility to Mbarara or has the claims delivered in batches to the voucher project office in Mbarara. The original claims database designed by Microcare could automatically check claims for compliance with medical and financial standards; however, it lacked a mechanism to adjust claims that were flagged as non compliant. In the first months after the 2006 launch, so many claims were flagged as non compliant that a backlog of unpaid claims accumulated. In response to this backlog, claims entry staff began to track actual reimbursement amounts using spreadsheets in addition to the claims database, resulting in near duplicate claims entry. In early 2007, a physician was hired to manually vet paper claims. However, there were weeks when the reviewer was not available and the providers complained that the review rules were inconsistently applied. By February 2008, faced with program budget constraints, MSI suspended the medical review process. In October 2008, a new physician consultant from Mbarara University was hired and began a new round of careful medical review of the STI vouchers and, once the SM service was active, reviewing the SM claims as well. By September 2009, a team of four claims reviewers and two medical advisors reviewed claims and met with providers who had problematic claims.

In addition to medical review, each claim's itemized costs have been reviewed since the program began in 2006. If the claims processor finds incorrect sums, the claims processor adjusts the reimbursed amount accordingly. In some cases, suspicious, illegible, or incomplete claims are rejected. The claims review and data entry usually takes 23 weeks. Every week a payment summary sheet is sent to MSI's Kampala office, which then sends electronic funds transfers twice a month to providers' bank accounts.

CHALLENGES WITH CLAIMS FORMS

There are challenges in the current claims system. There are bottlenecks in claims submission and there are weaknesses in the claims distribution and reimbursement process where fraud could happen. In spite of these challenges, the program's use of claims to cost each patient visit has distinct appeal as service data must be recorded to receive payment, providers are incentivized to manage service inputs carefully to optimize revenue, and the program pays providers for work that is completed rather than allocating funds on estimated future facility utilization.



There are three recognized points in the claims submission process where delays can occur: 1) the delay in the health clinic between the day the health clinic sees the patient and the day the claim is submitted, 2) the time it takes to process the claims, entering each one into the database, and 3) administration of feedback to the health clinics, especially in case of errors (Ho et al. 2009).

Since the beginning of the Uganda voucher program, STI and SM service providers have been reimbursed according to a negotiated price schedule for specific services after each patient visit. Although fee reimbursement is appealing because it covers the unique combination of service costs for each patient, there are situations where different treatment regimes for the same disease have different cost structures; for example, treating a patient with syphilis could be US\$ 10,000 if the patient were pregnant and treated with erythromycin and US\$ 5,000 for other syphilis cases treated with penicillin. Distinguishing whether a female patient were truly pregnant from the claims form is impossible without additional costs to verify her status. The most worrying potential for fraud under the current system is a provider buying vouchers from distributors and filing fake claims. There is currently no routine patient follow-up; however, blatant provider fraud has been detected and dealt with in the past. For instance, providers have submitted a batch of claims in which 50 forms are for patients seen for the same unusual condition in the same week and the thumbprints looked suspiciously similar. In situations like this, the MSI Mbarara office manager calls or visits the provider to discuss the unusual claims. In many cases, the claims are rejected or paid a fraction of the claimed

amount. In extreme situations, clinics are suspended from the program.

In spite of irregularities, few clinics have left the program. Zzimbe and Kazo Central clinics voluntarily left in 2006 citing reimbursement delays and a low volume of voucher patients. The program has made an effort to work with clinics, emphasizing the program standards and making prompt payments every month for each vetted claim.

Health facilities' participation in voucher programs is based upon meeting specific criteria which assess infrastructure and equipment characteristics.





MEASURING PERFORMANCE

As noted above, the primary goal of the STI and SM voucher programs was to increase care seeking for STIs and delivery services (ANC, delivery care, and PNC). Since the SM voucher program is still in its first year, it has not yet been evaluated, although a population impact evaluation and health facility assessments will be undertaken by Venture Strategies for Health and Development and the Population Council. The following sections focus on findings from the earlier STI program particularly how the goal of increasing STI knowledge and use of STI treatment services was achieved.

QUALITY OF CARE

STI claims data contained patient demographic information, village of residence, treatment date, laboratory test results, diagnosis, and any drugs prescribed. The STI voucher service saw 19,656 voucher patient visits between July 2006 and April 2008. Several indicators of program performance and service quality can be gathered from the routinely collected claims data. These indicators can be used as part of routine management to compare quality among providers and over time, and identify providers who may need closer supervision and/or additional training to comply with the standard of care. Proposed STI indicators of service quality and program performance:

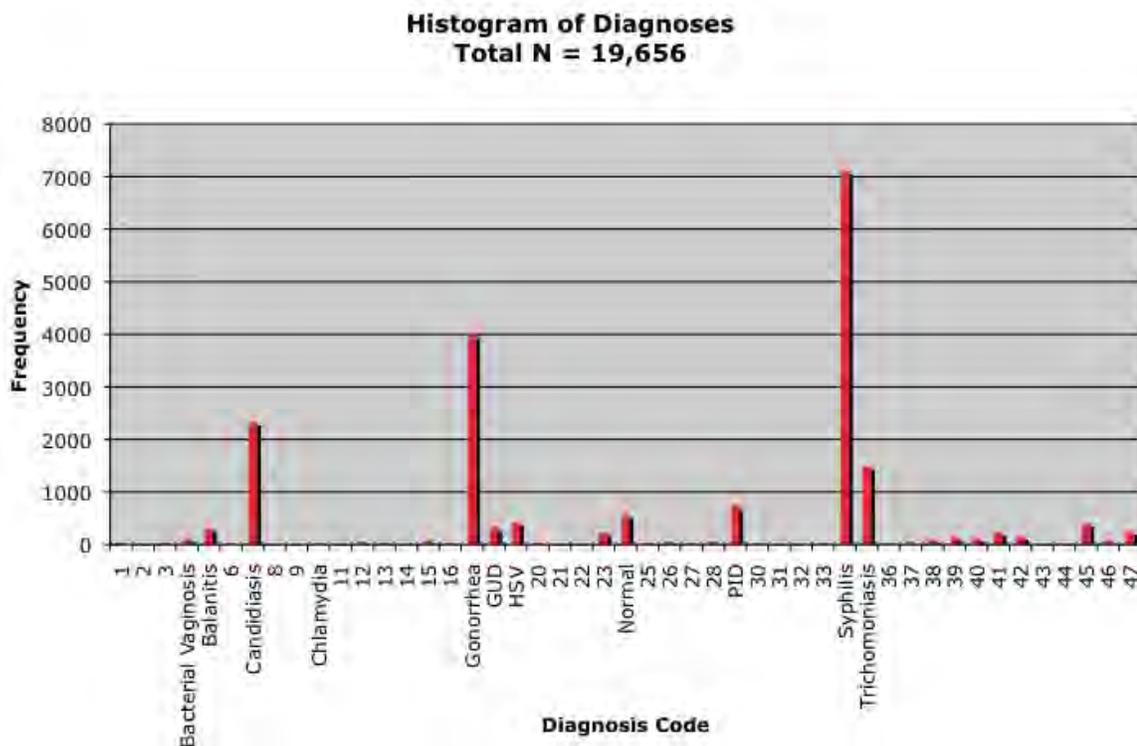
- Fraction of diagnoses correctly addressed with treatment, by disease and by provider.



- Fraction of diagnoses based on a disease-positive laboratory test, by disease and by provider.
- Approximate cost per cure over the entire program, by disease and by provider. Calculated under assumptions about accuracy of diagnosis and patient adherence, as best-, middle-, and worst-case cross product sensitivity analysis.
- Variation in the quality of laboratory tests, in terms of frequency of incorrectly specified and poorly reported test results.

Figure 3 shows a histogram of all diagnoses made among 19,656 patient visits between July 2006 and April 2008. Eleven of the most common and important lab-based diagnoses are listed by name. A handful of diagnoses dominated in the patient population; syphilis was most common (36 percent), followed by gonorrhea (20 percent), and candidiasis (12 percent), a non specific yeast infection. Providers occasionally reported conditions that were not STI related, such as Normal and Pregnant.

FIGURE 3: A HISTOGRAM OF ALL DIAGNOSES REPORTED IN THE 19,656 PATIENT VISITS JULY 2006–MAY 2008





A handful of diagnoses dominate; syphilis was most common (36%), followed by gonorrhea (20%), and candidiasis (12%), a non-specific yeast infection.

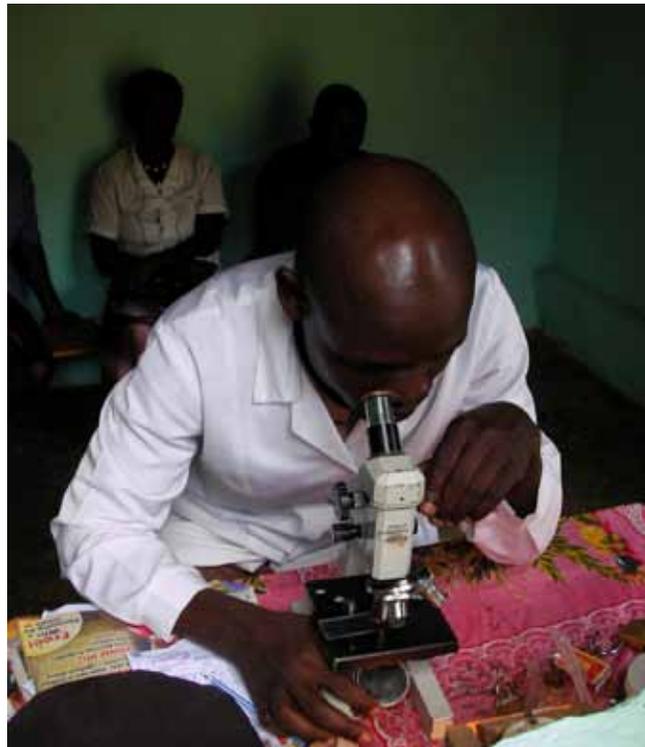
Relying on these claims data to directly represent the level of health care quality is challenging for two reasons: 1) patient follow-up to verify whether the STI was cleared was too expensive to implement, and 2) there was no way to independently verify patients' diagnosis or infection status. However, assuming that provider knowledge is correlated with health care quality, an indirect assessment of quality is possible by reviewing how often providers prescribed an appropriate drug for a given diagnosis.

Table 2 contains the percentage of instances of a particular diagnosis for which an appropriate drug was prescribed, for seven of the most common diagnoses in the claims database. A drug was considered appropriate if it conformed to any of three distinct but largely overlapping standards: the official program Standard of Care manual, the U.S. Centers for Disease Control and Prevention (CDC) Treatment Guidelines, or the recommendations of a Western physician with several years' experience practicing in the region. The proportion of appropriately treated diagnoses ranged from 79 percent for balanitis to 98 percent for gonorrhea. That is, among the 339 cases of balanitis identified in the 19,656 patient visits, 79 percent received a treatment that was considered standard. This table presents one example of how to use routine claims data to test aspects of quality in STI treatment. The most common diagnoses seen in Figure 3 (syphilis, gonorrhea, and candidiasis) were treated correctly more often than rarer diagnoses. This finding has implications for program practice. The voucher management agency needs to decide whether sufficient numbers of patients would benefit from additional provider training on proper treatment of uncommon STIs.

TABLE 2: PERCENTAGE OF DIAGNOSES (DX)

Diagnosis	All Visits		Visit 1		Visit 2		Visit 3		Visit 4	
	%	N	%	N	%	N	%	N	%	N
Balanitis	79	339	81	289	3	40	50	6	75	4
HSV	88	442	85	324	98	64	95	44	100	10
Bacterial Vaginosis	79	110	77	86	85	20	100	4	–	0
Candidiasis	88	2,693	88	2,086	85	399	85	191	65	17
Gonorrhea	98	5,823	98	3,488	99	1,589	99	683	90	63
Syphilis	95	10,386	95	6,622	95	2,443	99	1,198	62	123
Trichomoniasis	96	2,080	97	1,330	96	546	94	163	78	41
All Selected Dx	95	21,873	94	14,225	95	5,101	97	2,289	73	258

CORRECTLY TREATED, BY PATIENT VISIT FOR SEVEN SELECTED DIAGNOSES AMONG 19,656 PATIENT VISITS



Health clinic staff

More than one diagnosis was given per patient visit. The percentage of correctly treated drugs is higher for more common diagnoses.

Analysis of service quality using claims data is described further in Annex B.

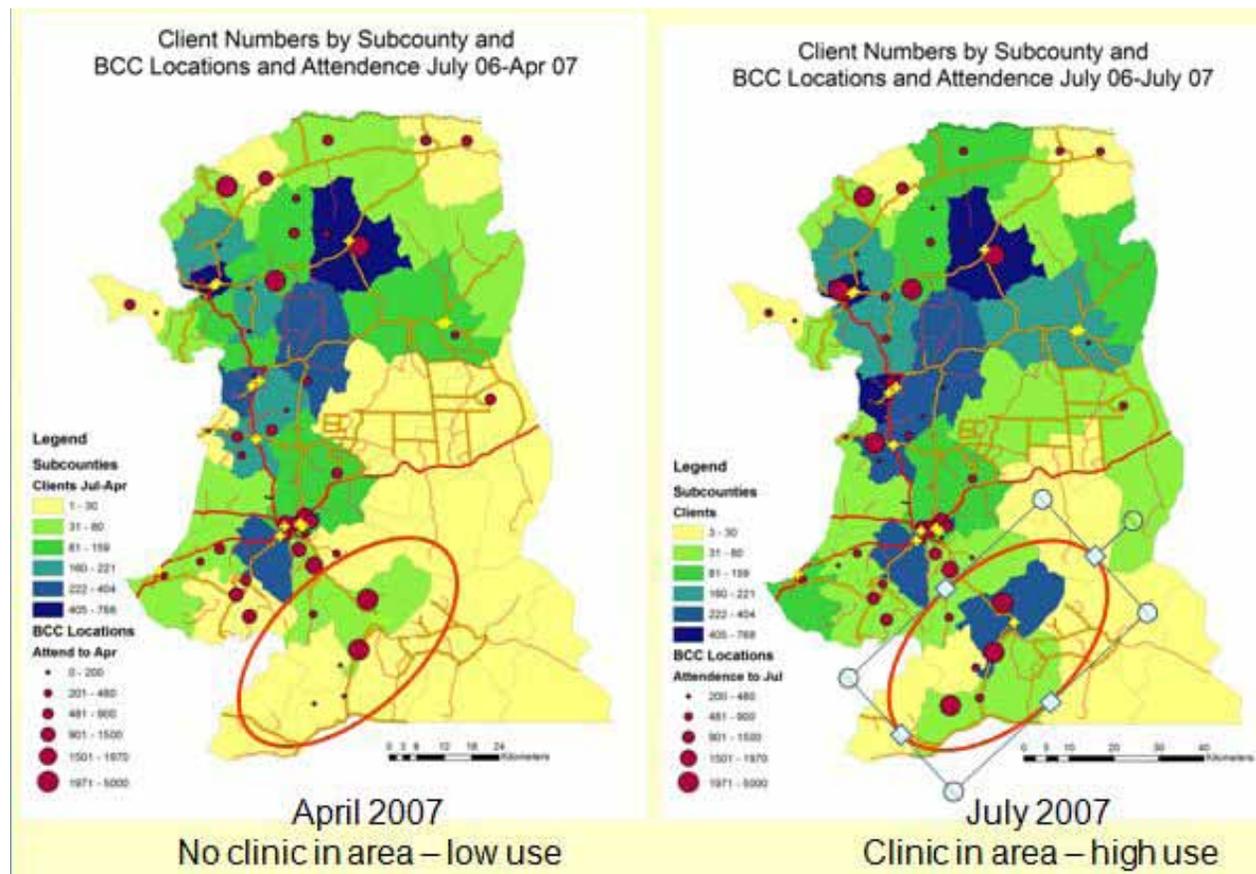
DISTANCE TO CARE

Distance from home to clinic can be an important barrier to care. When setting up voucher programs across large areas, program managers need to be mindful of locally accessible facilities and the costs of transportation. An interesting example of the importance of local access was made with the entry of a new contracted clinic 10 months after the STI program began. In Figure 4, the map on the left shows the cumulative number of patients by subcounty from July 2006 to April 2007. Note the low utilization among subcounties of southern Isingiro district, circled in red, relative to other subcounties located nearer to contracted facilities.

Several large marketing presentations were conducted over the initial 10 months in southern Isingiro communities, despite the fact that the nearest clinic was only accessible by dirt road in Mbarara town

30 kilometers away. Then, at the end of April 2007, Clinic Africa was contracted to establish a clinic in the main town of Isingiro district. Three months after the facility opened, voucher visits by Isingiro district residents increased dramatically, as the right hand map in Figure 4 shows.

FIGURE 4: CHANGE IN UTILIZATION FOLLOWING THE



ENTRY OF A NEW CLINIC IN ISINGIRO DISTRICT IN APRIL 2007

Note: Despite social marketing in the circled region, utilization remained low until the new clinic opened. This example highlights the importance of distance for access.

Geographic data on patients' village of residence and clinic locations were used to measure the distances that patients traveled to clinic. The distance from home to clinic has implications for identifying and enrolling clinics to provide services for targeted populations. It is possible to use the distances that patients travel for health care to estimate which populations would be excluded from the program in the future because of distance. (Because data on road paths are lacking, all distances had to be measured along a straight line, "as the crow flies." There is thus some introduced error, which proscribes detailed analysis, but does not alter the general picture.)



The STI claims data showed that about 60 percent of patients visited a clinic within 10 kilometers of their village of residence. Many of those patients were simply visiting the nearest clinic. About 55 percent of all patients visited the nearest clinic and the remaining 45 percent of patients traveled to a more distant clinic for three possible reasons: 1) they preferred the more distant clinic because of a quality or similar characteristic, 2) the distance measurement was incorrect and the actual route by road was shorter, or 3) patients were traveling to the farther location for another reason.

Using the spatial and claims data sets, it is possible to measure clinic preferences for local areas and answer questions such as: Do all patients from a local area visit many clinics or only the nearest one? How many people live in parishes within 10–15 kilometers from more than one clinic (and therefore may choose on criteria other than distance)? Definitions of what is a reasonable distance to travel for specific health services vary based on the topography, transport systems, patient socioeconomic status, and type of health service sought.

EXTERNAL EVALUATION: CHANGES IN KNOWLEDGE, BEHAVIOR, COST, AND DISEASE BURDEN

With support from KFW in 2006, the lead author of this brief – at the time a doctoral student at the University of California, Berkeley – undertook an external impact evaluation of the STI voucher program in collaboration with the Mbarara University of Science and Technology. The evaluation measured the population impact of the program using selected indicators of knowledge, utilization, cost, and disease burden. It was based on two population surveys of the greater Mbarara region, conducted in July 2006 and November 2007.

Analysis of the survey data produced several interesting findings. Knowledge of STI symptoms increased 18 percent between the first and second years (adjusted odds ratio, aOR=1.43; 95 percent CI=1.22-1.68). STI treatment utilization among those reporting having had one or more STI symptoms in the previous six months increased 15 percent in the same period; however, the increase was not statistically significant (aOR=1.14; 95% CI=0.89-1.47). The prevalence of syphilis, as measured by the VDRL test, decreased 42 percent between the two surveys (aOR=0.63; 95 percent CI=0.48-0.79). There was a greater reduction in the prevalence of syphilis among respondents who lived within 10 kilometers of a contracted facility than among respondents who lived more than 10 kilometers from a contracted clinic (57 percent decrease versus 20 percent decrease).



CONCLUSION

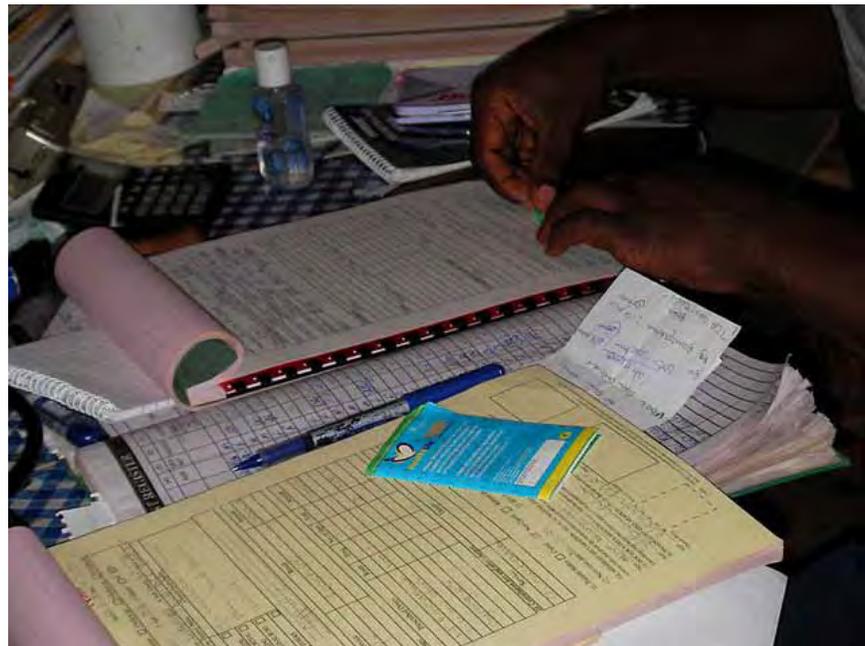
The Uganda program has shown that the voucher model can provide a range of facility-based health services to thousands of patients per year. There are significant challenges, particularly with claims management. However, the challenges offer opportunities to learn and make improvements in the system. The programs would benefit from more rigorous quality monitoring at facilities, more accurate claims vetting, and faster reimbursement. More generally, the voucher management agency should be incentivized to continuously improve the quality of the program, by creatively using available information, and by sedulously exploiting opportunities for changes in program function (e.g., introducing marketing incentives to voucher distributors or rewarding facilities with high-quality laboratories, or creating incentives for the VMA to meet utilization goals or granting conditional loans to high-performing facilities) that could improve overall efficiency and efficacy.

The long-term sustainability of both programs remains uncertain. Donors expect that programs should become self-sustaining, and if the voucher approach is to continue, the Ugandan government will need to take greater ownership of the voucher services. Although the program saw nearly 20,000 STI patient visits in the first 22 months of operations, it incurred significant overhead costs compared with the amounts reimbursed to providers. Database development and claims entry represented over one-fifth (21 percent) of total program costs while claims payments constituted only 18 percent. Nevertheless, donors and



government were sufficiently satisfied with the STI pilot to launch the SM voucher program in 2008.

It is expected that the cost structure in several years will resemble that of the Kenya SM program, in which approximately 80 percent of costs go to provider reimbursement for health care delivery (Bellows et al. 2009). There were two primary motivations behind the voucher program in Uganda: reducing the disease burden associated with STIs and maternal delivery and, by linking health care services to reimbursement, making participating providers more accountable for quality. From the perspective of the Uganda MOH, the voucher model is unique and valuable in that it allows the government to regulate private sector health care through the use of financial incentives for individual providers. There is significant worldwide interest in models that link health care delivery to reimbursement, and Uganda's public-private partnership serves as a model for other governments considering strategies to work more closely with the private sector.



Health clinic staff assist in processing claims forms to be submitted to the Voucher Management Agency.



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