Scaling Up Community Provision of Injectables through the Public Sector in Uganda

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This case study presents service monitoring data and programmatic lessons from scaling up Uganda's community-based distribution of depot medroxyprogesterone acetate (DMPA, marketed as Depo-Provera) to the public sector in two districts. We describe the process and identify implementation opportunities and challenges, including modifications to the service model. Analysis of monitoring data indicates that the number of women initiating DMPA with a community health worker (CHW) was 56 percent higher than the number of new DMPA acceptors served by clinics. Including continuing DMPA users, about three of every four DMPA clients chose CHWs as their service delivery point. CHW provision appears to be the preferred method of delivery for new DMPA users in this study, and may appeal even more to continuing clients. Lessons from scaling up in Uganda's public sector include recognizing the needs for ongoing assessment of support, a process to gain community "ownership," and spontaneous innovations to supplement CHW supervision.
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Healthy spacing and limiting of births through the use of modern contraceptives improve maternal and child health and subsequently the well-being of families and communities. Yet in Uganda, women have an average of seven children each, and one woman in 25 dies from complications of pregnancy or childbirth (UNICEF 2005). More than 40 percent of Uganda's married women have unmet need for family planning (FP) to prevent or space pregnancies (UBOS 2006), an exceptionally high level compared with neighboring Kenya (25 percent) and Tanzania (22 percent) (NBS [Tanzania] and ORC Macro 2005; KNBS and ICF Macro 2010). In this context, reaching the Millennium Development Goals (MDGs) of reducing the country's high rates of maternal and child mortality by 2015 seems unlikely.

Uganda, like many other developing countries, faces a shortage of professional health workers. In 2004, one physician existed for every 1,000 people (World Bank 2010), far short of the World Health Organization's threshold ratio of 2.5 per 1000. This shortage is particularly dire in Uganda because the vast majority of the population lives in rural areas, whereas medical professionals are concentrated in cities (Uganda Ministry of Health 2006). About half of the population lives more than five kilometers from the nearest health post (UBOS 2006). The difficulty medical professionals face in reaching rural populations is compounded by low staff numbers and heavy workloads.

Task shifting, also referred to as task sharing, has received increasing interest in the past five years as a strategy to address the critical shortage of professional health-care workers and improve access to services in hard-to-reach areas. Task shifting is defined as the process of assigning to health workers with limited training tasks traditionally carried out by higher-level staff such as medical doctors, where doing so does not compromise care, in order to improve access to or efficiency of primary health-care services at the community level (see, for example, WHO 2007). In the realm of family planning, global experts endorse the practice of providing depot medroxyprogesterone acetate (DMPA, marketed as Depo-Provera) injections by trained community health workers (CHWs), to supplement provision through clinics (Stanback et al. 2010). This practice is a safe and effective way to make injectables—the preferred method in many African countries (Lande and Richey 2006)—available to underserved populations with poor access to services (WHO 2009a; Stanback et al. 2010).

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Uganda was the first African country in which the feasibility and safety of community-based distribution (CBD) of DMPA was tested—in a 2005 pilot study. Since that time, the Ministry of Health (MOH) has supported testing and gradual expansion of the practice, assessing potential for national roll-out and policy change.[1] Uganda's phased expansion included replication of the service model to CBD programs managed by both the private and public sectors (Stanback, Mbonye, and Bekiita 2007; Akol et al. 2009; Poss et al. 2009). Expansion of the practice occurred without a national policy allowing appropriately trained CHWs to provide DMPA, but with full support from the Ministry of Health.

Scholars studying diffusion of innovation emphasize the need for—and relative scarcity of—published documentation concerning the process and management of scaling up successful innovations in health-care practices (Rogers 2003; Simmons, Fajans, and Ghiron 2007). Lessons learned from implementation are particularly useful as new practices spread and depart from the core service model (Rogers 2003; Simmons, Fajans, and Ghiron 2007). The pilot phases of CBD of DMPA are well documented (MSH 2007; Stanback, Mbonye, and Bekiita 2007; Huber, Saeedi, and Samadi 2009; WHO 2009a; Malarcher et al. 2010; Hoke et al. 2011), and unpublished program reports from Bangladesh provide details of the widespread scaling up of the practice during the 1980s and 1990s. Nevertheless, little has been published on the scaling up of this practice, especially within African settings. Because pilot projects are typically characterized by intensive resources, whereas scaling up is likely to rely on more typical program inputs, such evidence is essential if CBD of DMPA is to be institutionalized as part of ongoing operations. For the practice to become normative and sustained within community health programs, CBD of DMPA needs to be adopted into the public sector health system. Better data from experiences with scaling up are needed for end users or implementers to improve their level of certainty and make decisions, particularly in the public health field, which has been characterized as slow to adopt effective interventions (Rogers 2003).

This case study presents program monitoring data and programmatic lessons from Uganda's 2008–09 scaling up of community-based distribution of DMPA to the public sector, an initiative that received financial support from USAID. We describe the scaling-up process and identify how implementation opportunities and challenges were overcome and leveraged. We also highlight modifications to the service model when scaling up in the public sector, compared with CBD programs managed by nongovernmental organizations (NGOs). We conclude with recommendations for the strategic management of scaling up in the public sector, which is generally recognized to possess fewer resources than the private sector.

Data and Methods

The evidence used in this case study is drawn from program monitoring data from five communities in two rural districts in Uganda. The data were collected for a period of one year from February 2008 to February 2009. The data were collected and analyzed by FHI, the technical partner to the Uganda Ministry of Health for scaling up through the public sector. For comparison purposes, DMPA service-delivery reports were obtained from government health clinics in the relevant catchment areas for the same period. (Health clinics provide free family planning methods, such as condoms, pills, injectables, and, where available, implants and sterilization.) Service data from CHWs were drawn from the client register and activity log, which recorded new and returning clients, complications experienced, and referrals made. Data from clinics were drawn from the district's health management information system.

The method used is retrospective analysis comparing service data from the public sector CHW program with data from public sector clinics in the same communities. Concurrent documentation of implementation processes based on the authors' firsthand experience was used to construct and reflect on the programmatic lessons. Tests of statistical significance were not used in analysis between groups because the catchment populations of each service delivery point were unknown, precluding comparisons of proportions.

Process of Implementing Scaling Up

Selection of Expansion Sites

From 2003 to 2005, FHI, Save the Children, and the Uganda Ministry of Health collaborated on a pilot study that demonstrated that properly trained CHWs can safely and feasibly provide injectable contraceptives in settings other than clinics, and that the practice is accepted by communities. Satisfied with the results of the pilot study and subsequent expansion of the original community-based distribution program carried out by Save the Children, the Uganda Ministry of Health wanted to assess the practice in the public sector. The MOH recognized that such a program in this sector should have greater potential for sustainability, given that NGO implementing partners

often leave when their funding cycle ends. The Ministry of Health also recognized that scaling up the practice was particularly relevant and timely because the country's Village Health Team (VHT) strategy was being rolled out nationwide. The VHTs are trained community volunteers who serve as the primary village-level health contact for all villages in Uganda.[2]

In mid-2007, the Ministry of Health disseminated advocacy literature to all districts in Uganda, outlining the evidence supporting the proposed scaling up of CBD of DMPA and including an offer of limited support to local health officials wishing to replicate the practice in their district. The literature contained short research and program briefs from Africa, Asia, and Latin America that provided evidence of the safety and efficacy of CBD provision of DMPA, as well as job aids and a list of steps to initiate the practice within existing CBD programs.

In response to the dissemination, seven districts requested support. Of these, two district-led programs in eastern Uganda—in the Bugiri and Busia districts—were selected to receive technical assistance from the Ministry of Health and FHI with the goal of replicating the practice in government-run CBD programs. Decisionmakers favored sites with an active program of community-based distribution of family planning, interest and commitment at the program-management and community levels, and demonstrable unmet need for family planning in the community. Other considerations were the order in which requests were received and the availability of funds for technical assistance. The direct invitation and offer of support from the Ministry of Health to the districts was an adaptation from the original service model, which relied on NGO-supported CBD programs to identify sites.

The authors of the present study served as technical advisors to the project on behalf of FHI. The technical advisors from FHI, who were funded by USAID, provided 18 months of assistance (at approximately 25 percent of full-time hours) to public sector CBD programs in Bugiri and Busia to replicate the practice of CBD of DMPA. The role of FHI—the technical partner—was to provide guidance to the districts' core teams and to foster local ownership. Core teams were established to guide implementation, supervision, and monitoring of the CBD of DMPA; they were comprised of district health officers, and clinic managers and staff. We supported the district implementers by providing assistance with and support for training, materials and job aids, program management, development of a monitoring and evaluation strategy, and analysis of service data collected by CHW supervisors. We worked with Ministry of Health partners to build local implementation and monitoring capacity and to follow the nine steps outlined in the 2008 implementation handbook developed by FHI and Save the Children (Weil et al. 2008).

Initially, a rapid assessment tool was used to evaluate the need for CBD of DMPA services within the Bugiri and Busia communities and their capacity to provide injectables. The assessments revealed that CBD programming had weakened over the previous year as a result of funding constraints, resulting in a reduction of active CHWs and service activities, including supportive supervision. Nevertheless, district officials in the public sector were eager to address the decline in the provision of contraceptives in their communities and determined that the benefits of adding DMPA provision to their community health services would outweigh the costs, which were primarily associated with revitalizing supervision and purchasing of stationery and tools. Other essential inputs were already covered by the existing CBD programs, including provision of contraceptives free of charge, general family planning training, and activities to generate demand. District officials agreed to allocate more funding and staff time to support the management, supervision, and monitoring and evaluation of the program.

Management Teams

Challenges that emerged from the rapid assessments were addressed by the national and local resource teams in charge of replication. The national team, which was established during the pilot study, consisted of the Ministry of Health, FHI, and supporting NGOs that were also implementing the practice elsewhere. At the local level, district core teams were established in Bugiri and Busia to manage all operational activities related to expansion and were comprised of district health officers, clinic managers, clinic midwives, and health assistants. District core teams led consensus-building meetings with political and civil-society leaders who could influence district-level decisionmaking, thereby generating ownership within the district. In an effort to encourage acceptance of the new service, the technical partner and district health officers supported community sensitization meetings that provided information and introduced the CHWs trained to provide DMPA to the community.

Training

In the public sector, all CHWs currently or previously providing family planning services were selected for the DMPA training. Instruction was guided by a training manual specific to CBD of DMPA (FHI 2008). Two weeks of training were provided: the first week was devoted to

theory, the second to supervised provision by the CHWs of injections in clinics at the district level. In addition, CHW supervisors (typically midwives) from the local health post received a day-long orientation on supervision, supplies and waste, and monitoring and evaluation, because these tasks were new to their role. In contrast, training in the NGO pilot lasted up to three weeks, with the third week devoted to additional supervised practice in the CHW's local health post. No comparable orientation for health workers concerning supplies, waste management, or supportive supervision was provided in the NGO service model because the NGO health extension workers were already trained in these matters.

Although the CHWs in Bugiri and Busia previously had been trained in family planning and were distributing pills and condoms, they needed refresher updates. This need was not revealed in the rapid assessment, but as implementation proceeded it became apparent that CHWs needed to strengthen their knowledge and practice of family planning counseling.

Commodity Security and Waste Management

In the NGO service model, CHWs received contraceptive commodities and supplies from health extension workers paid by the NGO. The public sector model was adapted such that CHWs obtained supplies from the health centers in their service areas. In both districts, the USAID | DELIVER Project conducted training in logistics management for district core teams, health facility staff, and CHWs to ensure procurement and maintenance of adequate stocks of family planning supplies, including DMPA. Commodity stockouts still occurred, however, and required creative solutions such as borrowing between districts. Stockouts occur countrywide for reasons not specific to this project, such as the absence of a distribution mechanism to the lower health posts.

No new waste-management systems were developed. For disposal of used syringes, CHWs received safety boxes to take when full to health clinics in their districts for safe incineration.

Supervision, Monitoring, and Evaluation

Supervisors of CHWs in Bugiri and Busia used monitoring and supervision procedures and tools from the existing district health officer supervisory structure. To facilitate linkages with the health system, monthly supervision from clinic midwives was instituted through CHW visits to the health facility. This aspect of the supervision differed from that of the NGO model used earlier in Uganda in that the public sector CHWs did not have the extra input of ongoing technical support and monitoring provided by NGO extension workers.

After project launch, monthly supervision was found to be taking place with less frequency than planned because resource constraints at the district level precluded reimbursing CHWs for travel for monthly supervision. In the absence of regular and consistent supervision, CHWs in Busia created their own supervisory structure to address the need for ongoing supportive supervision: a designated "CHW leader" would provide scheduled as well as impromptu support and leadership for peers. This innovation was later adopted by other CBD programs in the country. To integrate reporting of routine service statistics into the public sector health management information systems (HMIS), CHWs recorded DMPA provision on forms adapted by district health officers and HMIS personnel to ensure compatibility with existing reporting tools and protocols.

Results

The safety and effectiveness of CBD of DMPA programs managed by nongovernmental organizations has been documented in Uganda (Stanback, Mbonye, and Bekiita 2007; Akol et al. 2009) and elsewhere (MSH 2007; Malarcher et al. 2010; Hoke et al. 2011). The data presented here permit examination of these matters in public sector programs.

Clients Served

In the 12 months studied, the 44 community health workers in Bugiri and Busia served 1,364 women (31 clients each, on average) (see Table 1). During the same period, the five clinics within the relevant catchment areas delivered DMPA to fewer women: 265 in Bugiri and 192

Table 1 Number of DMPA clients served, percentage who are new recipients, and couple years of protection, by district, according to type of provider, Uganda, 2008–09

District and number of CHWs	Clients receiving DMPA, provided by		Percentage of clients receiving DMPA for first time, provided by		Total DMPA couple years of protection, provided by	
	CHW	Clinic	CHW	Clinic	CHW	Clinic
Bugiri (24)	522	265	35 (183)	65 (172)	351	67
Busia (20)	842	192	27 (226)	47 (90)	449	48
Total	1,364	457	30 (409)	57 (262)	800	115

DMPA = Depot medroxyprogesterone acetate. CHW = Community health worker.
Note: Numbers in parentheses are sample sizes.

in Busia. In Bugiri, about two-thirds (65 percent) of the DMPA clients served by clinics were new DMPA recipients (though not necessarily new to practicing family planning), whereas about a third (35 percent) of the DMPA clients served by CHWs were first-time DMPA users. In Busia, approximately one fourth (27 percent) of clients served by CHWs, compared with almost half (47 percent) of those recorded by clinics, were new DMPA users. The number of women initiating DMPA with a CHW during the expansion in Bugiri and Busia was 56 percent higher than the number of new DMPA recipients served by clinics.

Total couple years of protection (CYP) provided during the 12-month period was 351 for Bugiri and 449 for Busia, which is 15 CYP per CHW in Bugiri and 22 CYP per CHW in Busia, on average. By comparison, health clinic reports in the relevant areas indicate that clinic-based providers distributed a total of only 67 CYP of DMPA in Bugiri and 48 CYP in Busia. CHWs thus contributed 87 percent of DMPA CYPs in the scaled-up districts.

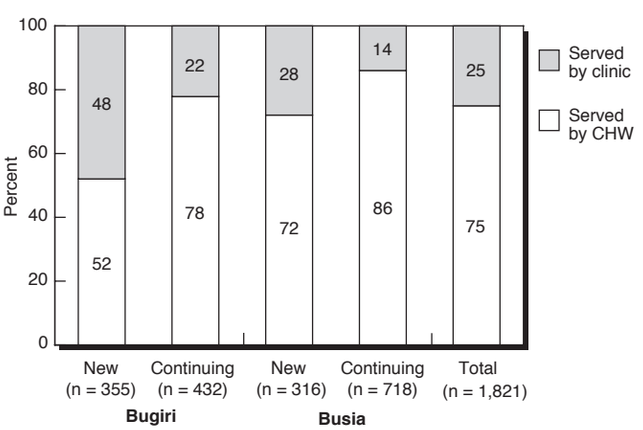
As shown in Figure 1, 52 percent of all women who initiated DMPA in Bugiri and 72 percent in Busia received this method from a CHW. Among continuing DMPA users, 78 percent in Bugiri and 86 percent in Busia were served by CHWs. Overall, 75 percent of all DMPA users during the reporting period chose CHWs as their service provider.

Reinjection and Continuation Rates

Although no standard measure for quality of CBD of DMPA services exists, acceptance of a reinjection—a proximate and direct outcome of clients' experience—is a useful proxy. Reinjection suggests some degree of satisfaction with the method and services received, including presumably the quality of the counseling and the injection experience.

Among the subset of women who during the reporting period could have received up to four injections, 79 percent received a second injection, 55 percent a third, and 42 percent a fourth (results not shown). Table 2 presents the three-month, six-month, and nine-month reinjection rates, calculated as the proportion of eligible recipients continuing from each injection to the next. The majority of CHW DMPA clients eligible for a second injection received it from the CHW: 77 percent in Bugiri and 68 percent in Busia. Of these, 68 percent of the women eligible for a third injection during the reporting period in Busia and 72 percent in Bugiri obtained the reinjection.[3] The proportion of continuing CHW DMPA clients was highest at the nine-month interval (fourth injection), at which 84 percent of eligible women who had received three injections accepted a fourth from a CHW (82 percent in Bugiri and 88 percent in Busia). These results indicate that most discontinuations occurred at the second or third injection, suggesting that by the time of the fourth injection, women had developed a strong commitment to the method and its delivery. Reinjections in clinics were not tracked because the health management information system (HMIS) used in the public sector is not set up to track individual clients; therefore, comparisons could not be drawn between the two service delivery points.

Figure 1 Distribution of new and continuing DMPA users, by service provider, Uganda, 2008–09



DMPA = Depot medroxyprogesterone acetate. CHW = Community health worker.

Safety

Avoidance of needle-stick injuries is an important aspect of safe delivery of DMPA at the community level, particularly given Uganda's relatively high HIV prevalence. No needle-stick injuries were reported during any of the injections given by CHWs in either district program during the reporting period.

Table 2 Reinjection rates among public sector CHW clients, Uganda, 1 June to 31 December 2008

	Percentage receiving reinjection among clients eligible[a]		
District	**At three months**	**At six months**	**At nine months**
Bugiri	77 (618)	68 (413)	82 (211)
Busia	68 (800)	72 (464)	88 (179)
Total	72 (1,418)	70 (877)	84 (390)

[a] Eligibility at three months is for the second injection, at six months is for the third, and at nine months is for the fourth. For clients who had missed an injection but followed through with subsequent injections, the missed injection and all subsequent injections were excluded from the calculation of reinjection rates.
Note: Numbers in parentheses are sample sizes.

To maintain protection against pregnancy, the World Health Organization recommends a grace period of two weeks before and four weeks after the scheduled reinjection date. For clients of public sector CHWs, only 2 percent of reinjections were given prior to the beginning of the reinjection window, 92 percent within the window, and 6 percent after the end of the reinjection window. Half of all injections were given on the exact day they were due. These data confirm the ability of CHWs to appropriately manage the reinjection calendar in the context of public sector programs.

Discussion

The findings from our case study are encouraging. We find that public sector CHW provision of DMPA can reach and retain new DMPA clients with their preferred method, providing a valuable service that enhances access to this method in underserved areas. Including continuing DMPA users, about three of every four DMPA clients chose CHWs as their service delivery point in this study. CHW provision appears to be the preferred method of delivery for new DMPA clients in this setting, and may appeal even more to continuing clients.

That 87 percent of couple years of protection in this study was provided by CHWs suggests that CHW provision of DMPA is an effective task-shifting strategy, and that a large number of DMPA reinjections can be delegated to this cadre of health workers. As more women select CHWs as their DMPA provider, health centers can presumably be freed to focus on other more critical services.

Prospective adopters of the practice, including the Uganda Ministry of Health, have voiced concerns about the safety of CHWs providing injections. Yet no needle sticks, unsafe practices, or adverse events were reported by either district.

We attribute the lack of reported accidental injuries in the scaling-up experience to the use of the "no touch" injection technique, wherein CHWs are taught to dispose of the needle into the safety box without first disconnecting it from the syringe. The data did not enable us to assess whether correct injection techniques or safe waste disposal was employed by public sector CHWs, although no problems were voluntarily reported.

One limitation of this study is the absence of baseline data concerning community-based family planning service prior to launch of the public sector program in the two districts. Analysis of improvement in couple years of protection over time or in comparison to clinics was, therefore, not possible. The increases in new DMPA users and the high proportion of continuing CHW clients continuing DMPA use may be attributable to a combination of factors: community-wide increase in demand for services, word of mouth among clients, and even such actions on the part of the CHW as favoring continuing clients. These influences are outside the scope of this review but warrant further exploration.

Given the study method, the nature of introducing an innovation, and variations in the strengths and weaknesses of community-based programs, we cannot make sweeping generalizations from this experience to future implementers. The findings are encouraging, however, and suggest that wide-reaching scaling up within the public sector, with typical inputs including technical assistance,[4] allows more women to access their preferred method and sustain reproductive health goals more easily than having to travel potentially long distances to a health center for service.

The most notable adaptations to the original service model with NGOs were the early, targeted engagement of district health officials as leaders, the additional training for CHWs in family planning concepts and logistics management, and the spontaneous development of a peer leader to supplement the supervisory needs of the CHWs. Taking these modifications into consideration, we believe the inputs into Uganda's initiative in scaling up were not prohibitively intensive and that the program yielded encouraging results that can contribute to the country's public health and development goals.

The long-term vision and stewardship of partners working through Uganda's pilot program and scaling up serves as a reminder that findings from successful pilots are not enough to introduce a best practice. Wide-scale adoption of a new service may require phases of testing, adaptation, and documentation, particularly with new users and in new geographic areas. Currently in Uganda, based partially on findings from this case study, the Ministry of Health has changed national policy to facilitate wider scaling up of CBD of DMPA in the public sector. The Ministry of Health plans to use the country's Village Health Teams—the government structure of community health volunteers—to facilitate expansion of the practice.

Based on the experience in Uganda analyzed here, we offer four key observations for the strategic management of scaling up the practice in Uganda and elsewhere. First, development partners and public sector agencies with low financial and technical capacity need to assess their readiness to undertake this service and determine the degree and type of support needed before scaling up. Tools exist for this type of assessment (Weil et al. 2008). Public

sector agencies will also need continued monitoring after launch to ensure that their systems sustain the new activity. Second, efforts need to be made to ensure community acceptance and "ownership," focusing especially on the early and active engagement of district and local health officials, including clinic supervisors. Local core teams, also known as resource teams (Fajans et al. 2007), are essential for establishing such ownership and providing the perseverance and insider perspective required to expand an innovative practice to new users. Third, all program components, including training, logistics, waste management, supervision, and monitoring, should be adapted and harmonized within existing systems used by public sector implementers for ease of adoption and to facilitate sustainability. Finally, programs that have already launched the practice of CBD of DMPA offer valuable learning experiences for other districts in the country and in neighboring countries, and a "south-to-south" approach between implementers to foster collaboration and share practical and innovative adaptations should be pursued.

The experience in Uganda provides the only formally documented example in Africa of scaling up CBD of DMPA in the public sector using appropriately trained, volunteer CHWs. Other countries such as Nigeria and Zambia that have piloted the practice using NGO-run CBD programs have not yet begun to offer the service through public clinics. Uganda's successful initiative can serve as a model for many sub-Saharan government-run community health programs, in which the potential for sustainability is typically greater than in NGO-run programs.

Notes

1 Moving beyond pilot studies into scaling up includes testing interventions in different settings and with different (or more typical) levels of resources. Understanding whether and how an intervention functions in new contexts is essential for establishing credibility and improving the capacity for widespread scaling up (Simmons 2009).

2 VHT volunteers—numbering five per village on average—provide free primary health care, including basic health education, referrals, and first-line prevention and treatment, addressing nutrition, tuberculosis, malaria, and distribution of contraceptives such as pills and condoms.

3 In our analysis, when an observation of a stockout was made, the missing injection and any subsequent injections were excluded from analysis of reinjection rates and of timeliness. Twenty clients were reported to have experienced stockouts, all in Busia district.

4 Input from the technical partner to the CBD program run by the public sector clearly constitutes external support but is distinguished from inputs provided by an NGO-run CBD program. In this case study, the technical partner did not provide supervision or manage logistics, two critical components of a CBD program.

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