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Long-Acting Reversible Contraception Crucial to Meeting Unmet Need Goals by 2020: Key Papers From the 2016 International Conference on Family Planning

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INTRODUCTION

Long-Acting Reversible Contraceptives: An Important Focus at the 2016 International Conference on Family Planning

The fourth International Conference on Family Planning (ICFP) was held in Nusa Dua, Indonesia, on January 25–28, 2016. Themed “Global Commitments, Local Actions,” the conference stressed the importance of global and local partnerships to shape and influence the role and contributions of family planning in attaining health and development goals, in particular the new Sustainable Development Goals. Hosted by the Bill & Melinda Gates Institute for Population and Reproductive Health at Johns Hopkins Bloomberg School of Public Health and the National Population and Family Planning Board of Indonesia, the conference attracted more than 3,000 participants and featured more than 500 oral presentations, 400 posters, and 90 panels and plenaries.

We conceived this special issue of GHSP, comprising articles presented at ICFP, in collaboration with the Gates Institute to help disseminate important findings and lessons learned beyond conference participants to the larger health and development community. When reviewing the individual oral presentations accepted to the conference, we found at least 64 (13% of those accepted) that focused on long-acting reversible contraceptives (LARCs). It was clear to us that LARCs were an

important focus of the conference and had unparalleled potential to reduce unmet need for family planning and improve contraceptive prevalence around the world.

This special issue includes 11 articles that focus specifically on programs that deliver LARCs and how they were implemented so that others can learn from their experience. The articles address a range of cross-cutting topics, from training, supervision, mentoring, and task sharing to quality of care (including removal of IUDs and implants when requested by the client or when the effective duration of the method ends), vouchers, postpartum family planning, postabortion family planning, and family planning service delivery in fragile environments. The countries featured in the articles include Bangladesh, Cambodia, Chad, the Democratic Republic of the Congo, Kenya, Pakistan, Senegal, Uganda, and Yemen.

This special issue is by no means an exhaustive review of the issues related to LARCs, but the articles provide important insight into the benefits and challenges of delivering LARC services, yielding important lessons that can be applied in other settings and that are also applicable to delivery of family planning services in general. —*Global Health: Science and Practice*

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Effective LARC Providers: Moving Beyond Training

James D Shelton,^a Anne E Burke^a

Effective and productive providers are the key to successful provision of long-acting reversible contraceptives (LARCs). But LARCs demand more of providers than short-acting resupply methods. In addition to sound training, key elements to developing highly productive providers of LARCs include a thorough understanding of the service delivery system context; selecting providers with the most potential, especially from mid-level cadres; strong mentoring and supportive supervision; and attention to the supply chain and to demand-side support.

This special issue of GHSP, focused on long-acting reversible contraceptives (LARCs) based on papers presented at the 2016 International Conference on Family Planning, provides testimony to the remarkable rise in the popularity of implants and intrauterine devices (IUDs), as well as some limited evidence on permanent methods. As these articles report, we see substantial uptake of LARCs in a wide variety of situations when they are provided in a quality fashion, including provision of a wide choice of methods. These situations include:

- Public and private sectors
- Postpartum
- Postabortion
- Difficult crisis-affected settings
- Peri-urban slums
- With vouchers for those particularly in need
- Via a range of provider cadres.

Moreover, these articles provide insights specifically into the acceptability and provision of IUDs, which have long been recognized as underutilized.

WHAT IS NEEDED FOR GOOD LARC PROVISION?

For any health service to be successful, going beyond the technology or basic intervention alone is crucial. This lesson is particularly important for LARCs and permanent methods, which are more complicated to provide than short-acting methods. It is essential to address the local context, systems, and infrastructure through which LARCs are provided. Key situational issues include physical resources, staffing, organization of work, and cultural context.

Providers are central to the success of any health program. The global health field tends to focus on training to assure providers' capabilities. But training alone is not enough. Drawing largely on articles in this issue, we offer observations on some program elements that are necessary to help providers be highly productive in LARC programming.

Selecting Providers With the Most Potential

Inserting and removing LARCs requires particular skills and more effort than providing many other family planning services, such as pills or injectables. Thus, providers of LARCs must be not only technically competent but also motivated to provide the service again and again. So, one selection criterion is whether a provider is likely to be able to provide LARCs often enough to keep her or his skills and have confidence in them. And that calls for selecting staff who are already motivated to provide, and even be champions for, family planning in general. Also, many nonphysician providers may find satisfaction from "task sharing"—being able to provide a service that was previously reserved for physicians—and so may be enthusiastic about providing LARCs. Providers such as midwives and qualified nurses often suit this role. In addition, it appears crucial to select providers who are likely to remain in their posts for a number of years rather than staff who are going to retire or could be transferred soon.

Mentoring and Supervising

It is telling that many of the articles in this special issue that describe full programming efforts emphasize ongoing support to providers, variously referred to as mentoring, supportive supervision, or coaching (Samuel,¹ White,² Gueye,³ Muthamia,⁴ Pleah⁵). A common strategy is to begin by recruiting, training, and deploying a core cadre of mentors, who then train and mentor

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other providers. Good mentoring greatly benefits any service, providing technical support, accountability, and motivation. But it is especially productive for a potentially challenging intervention such as provision of LARCs, which calls for a higher level of skill, commitment, and motivation, and for which skills are easily lost if not practiced. Good mentoring also provides broader support for provision of all family planning methods, including counseling and practical problem solving.

Assuring the Supply Chain

A provider without the proper commodities cannot provide the service. And a disrupted supply chain undermines confidence in the entire service. Thus, several of the articles in this issue focus on building and maintaining a reliable supply chain. In addition to the contraceptives themselves, LARC provision requires equipment and supplies such as gloves, antiseptics, and local anesthetics. While external donors may supply the implants and IUDs, especially at the beginning of a project, disposable supplies cannot be overlooked or assumed. A reliable source of ongoing supply is crucial to sustain continuous services, particularly once programs leave the shelter of donor funding.

Supporting the Demand Side

Several of the articles emphasize demand promotion activities, especially outreach to the community, including religious leaders, and some mass media communication. Promotion of IUDs, in particular, benefits from such activities. Misperceptions about IUDs persist among both providers and the general public, as documented by Twesigye and colleagues.⁶ Addressing such misperceptions is essential. In addition, the use of vouchers can increase demand and service seeking among clients particularly in need, as reported by Boddam-Whetham and colleagues⁷ and Bajracharya and colleagues.⁸

CONTRAST WITH A LESS SUCCESSFUL PROJECT

The project in Bangladesh reported by Rahman et al.⁹ resulted in some appreciable increase in use but less than in comparison districts, which had no such intensive intervention. The project included substantial training, with some focus on the supply chain and demand-side support. However, it appears the intervention was operating in a much

more challenging system context than that in the comparison districts. For example, there were substantially more provider vacancies and fewer clients were contacted by community health workers in the program districts than in the comparison districts. The high vacancy rate of providers speaks to the possible importance of a stronger selection process from the outset. Notably, an appreciable ongoing mentoring or supportive supervision activity was absent. Would the Bangladesh project have been more successful had it had included stronger provider selection and mentoring components? Yes, we believe so.

CONCLUSION

In the context of availability of a wide range of other methods, provision of LARCs can be the linchpin in the effort to attain FP2020 goals to meet the contraceptive needs of millions of people. The global health community must make the necessary investment to foster the skills and motivation of LARC providers and give them sufficient system support to facilitate program success.

Competing Interests: None declared.

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LARC providers must be not only technically competent but also motivated to provide the service again and again.

Good mentoring benefits any service but is especially important for the provision of LARCs.

Provision of LARCs can be the linchpin in the effort to attain FP2020 goals.

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ORIGINAL ARTICLE

Rapid Contraceptive Uptake and Changing Method Mix With High Use of Long-Acting Reversible Contraceptives in Crisis-Affected Populations in Chad and the Democratic Republic of the Congo

Jesse Rattan,^a Elizabeth Noznesky,^a Dora Ward Curry,^a Christine Galavotti,^a Shuyuan Hwang,^b Mariela Rodriguez^a

Offering a broad choice of contraceptives can rapidly expand use in crisis-affected settings, particularly when the choice includes long-acting reversible contraceptives (LARCs). Over 5 years, the governments of Chad and the Democratic Republic of the Congo, with support from an NGO, provided nearly 85,000 new clients with contraceptives. LARC users, which included an increasing number of IUD users, accounted for 73% of the new clients.

ABSTRACT

The global health community has recognized that expanding the contraceptive method mix is a programmatic imperative since (1) one-third of unintended pregnancies are due to method failure or discontinuation, and (2) the addition of a new method to the existing mix tends to increase total contraceptive use. Since July 2011, CARE has been implementing the Supporting Access to Family Planning and Post-Abortion Care (SAFPAC) initiative to increase the availability, quality, and use of contraception, with a particular focus on highly effective and long-acting reversible methods—intrauterine devices (IUDs) and implants—in crisis-affected settings in Chad and the Democratic Republic of the Congo (DRC). This initiative supports government health systems at primary and referral levels to provide a wide range of contraceptive services to people affected by conflict and/or displacement. Before the initiative, long-acting reversible methods were either unknown or unavailable in the intervention areas. However, as soon as trained providers were in place, we noted a dramatic and sustained increase in new users of all contraceptive methods, especially implants, with total new clients reaching 82,855, or 32% of the estimated number of women of reproductive age in the respective catchment areas in both countries, at the end of the fourth year. Demand for implants was very strong in the first 6 months after provider training. During this time, implants consistently accounted for more than 50% of the method mix, reaching as high as 89% in Chad and 74% in DRC. To ensure that all clients were getting the contraceptive method of their choice, we conducted a series of discussions and sought feedback from different stakeholders in order to modify program strategies. Key program modifications included more focused communication in mass media, community, and interpersonal channels about the benefits of IUDs while reinforcing the wide range of methods available and refresher training for providers on how to insert IUDs to strengthen their competence and confidence. Over time, we noted a gradual redistribution of the method mix in parallel with vigorous continued family planning uptake. This experience suggests that analyzing method mix can be helpful for designing program strategies and that expanding method choice can accelerate satisfying demand, especially in environments with high unmet need for contraception.

BACKGROUND

Globally, approximately 225 million women have an unmet need for modern contraception—meaning

that there are 225 million women who want to avoid pregnancy but are not currently using a contraceptive method.^{1,2} This global number obscures substantial geographical differences; 73% of women with unmet need live in the world's poorest countries, with the majority living in Asia and sub-Saharan Africa. The proportion of women with unmet need in Central and

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West Africa is the highest in the world, at 81% and 74%, respectively.² This high unmet need has serious public health consequences that contribute to high maternal mortality ratios. They include early, late, and poorly spaced pregnancies, pregnancy complications, and unsafe abortion.

The challenges of high unmet need and unintended pregnancy (and the attendant high rates of maternal death and unsafe abortion) in sub-Saharan Africa are not easily solved, but a necessary first step is to attract new users into family planning programs.³ These programs must reach women and girls who do not currently have access to services, while simultaneously increasing access of all users to the full range of contraceptive methods, especially highly effective and easy-to-use methods. Expanding access to a broad method mix has been recognized as a programmatic imperative.⁴ Lack of choice is associated with method discontinuation.⁵ Bradley and colleagues suggest that method failure is responsible for almost one-third of unintended pregnancies.⁶ Other research suggests that more than half of recent unwanted births in 14 countries with Demographic and Health Survey (DHS) data followed method failure or discontinuation.⁷ Furthermore, the addition of a new method to the existing mix tends to increase total contraceptive use.⁴

Since 2011, CARE has been implementing the Supporting Access to Family Planning and Post-Abortion Care (SAFPAC) initiative to increase the availability, quality, awareness, and use of contraception in crisis-affected settings in southern Chad and eastern Democratic Republic of the Congo (DRC). The initiative focuses on improving voluntary access to highly effective, easy-to-use long-acting reversible contraceptives (LARCs)—intrauterine devices (IUDs) and implants. The SAF PAC initiative supports government health systems that are chronically weak or unable to meet the demands of the populations they serve, especially communities experiencing chronic conflict or with large refugee and internally displaced populations. As of the end of November 2015, the project was supporting services in 19 facilities across 3 zones in DRC, reaching an estimated population of 505,447, of whom an estimated 126,362 were women of reproductive age. In Chad, the project supported 14 health facilities until January 2013, when it scaled up to support 21 facilities in 2 health districts in 2 regions, then reaching an estimated population of 543,480, of whom an estimated 135,870 were women of

reproductive age. The initiative supports the entire range of methods included in the family planning programs in each country. CARE team staffing in both countries includes an overall coordinator for the zone or district, a clinical training coordinator, a clinical officer who leads supportive supervision, often in collaboration with government management, and a community mobilization and behavior change communication officer. Zonal and district teams also receive support from CARE staff members focused on procurement, supply chain management, and overall management. These teams work closely with government provincial, district, and zonal leadership and management teams, who co-lead all programmatic interventions.

Our strategy includes strengthening the government health facilities, in particular, providing competency-based training with follow-up clinical assessment and coaching, ensuring a continuous supply of contraceptives and the medical supplies and equipment required to deliver them in accordance with international norms and standards, and conducting facility supervision on a regular basis in partnership with district and zonal health management staff. A key element of supportive supervision activities and a major part of the program overall is collecting monitoring data every month from each facility on the number of clients and the type of contraception they choose.

We also support competency-based training, coaching, and supervision for health care providers—nurses, midwives, and doctors—in government-managed facilities on 3 clinical skills: insertion and removal of IUDs and implants, postabortion care, and in-depth family planning counseling based on the Population Council's "Balanced Counseling Strategy Plus Toolkit."⁸ We do not train private providers in these countries. In DRC and Chad, SAF PAC-supported services, including long-acting methods, are offered during clinic hours (generally 8 am to about 1 pm) and do not include mobile clinics or special events or contraceptive/health days outside normal facility hours. In Chad, family planning services are technically free, but the client is often asked for an informal fee. In DRC, health workers receive a modest wage drawn from the national system of cost-recovery, meaning that clients are charged for certain services, including contraception. However, the SAF PAC approach requires contraceptive services to be provided free of charge. To manage this tension, CARE developed detailed

The initiative focuses on improving access to highly effective, easy-to-use, long-acting reversible methods.

agreements with government district and facility staff in Chad for the duration of the period discussed in this article, and in DRC in the second half of the program. The successful performance of these agreements is measured by the availability and high quality of free family planning services that *include all methods*, as well as the collection of monitoring data in addition to data already collected as part of the usual scope of providers' work. We intentionally and explicitly do not set any contraceptive targets or offer incentives connected to numbers of clients or specific methods.

Because raising people's basic awareness of new and underused methods is a necessary (if insufficient) first step, we also work at the community level. We work with community health workers (CHWs) in DRC (there is no formal CHW cadre in Chad), local community-based organizations, theater groups, and radio stations to increase understanding and awareness of all contraceptive methods and especially less familiar long-acting methods. In addition, an important part of the SAFPAC community strategy is engaging and inspiring the whole community to consider the benefits and opportunities inherent not only in planning and spacing births and decreasing unintended pregnancies, but also in clearing the path for women to use services. Each country program carries out a context-specific strategy to develop champions among influential men and women in the community, most often religious leaders, municipal authorities, and leaders of women's associations in Chad and *misadis*, or trusted, supportive, and influential women, in DRC. We use participatory learning and action methods in collaboration with these leaders to engage communities in dialogues on the sensitive topics of contraception and women's right to manage their fertility. We describe our programmatic interventions in more detail elsewhere.⁹

This article focuses on our work in Chad and DRC, where maternal mortality ratios at the beginning of our program were especially high (1,099 per 100,000 live births in Chad¹⁰ and 846 per 100,000 live births in DRC¹¹). Since one-third of all maternal deaths might be prevented by satisfying unmet need for contraception,¹² we can assume that very low levels of use of modern contraceptive methods contribute substantially to these high maternal mortality ratios, in part by fueling high rates of unsafe abortion.

We looked at DHS data before starting our program. The 2004 DHS for Chad found that only

2.5% of all women of reproductive age currently used a contraceptive method.¹⁰ Slightly more than half of these women reported using either periodic abstinence (0.9%) or condoms (0.4%). These 2 methods have some of the highest "actual use" failure rates of either traditional or modern methods. Of the 1.5% of women using a modern method, short-acting methods dominated the mix, with long-acting reversible and permanent methods comprising only 7.5% of the modern method mix. Although total unmet need for contraception was reported as 18.3% of all women of reproductive age surveyed, it is likely to be much higher, since the need of women using traditional methods for more effective methods was not expressed.²

In DRC in 2007, the DHS reported that 20% of all women of reproductive age currently used a contraceptive method.¹¹ Among contraceptive users, two-thirds (13.4% of all women of reproductive age) reported using a traditional method, whereas only one-third (6.7% of all women of reproductive age) reported using a modern method. Among those using modern methods, condoms comprised 72% of the method mix. Unmet need in DRC was 24%. As in Chad, this is most likely an underestimate. Less than half (48%) of all sexually active unmarried women surveyed had ever used a contraceptive method. This and the use of methods with high failure rates suggest a much greater need for highly effective contraception.

Before the start of SAFPAC, family planning services were available, in theory, through the government health facilities in both Chad and DRC. In practice, however, people rarely used these services, especially outside of hospitals and urban areas. Furthermore, in the intervention zones where the SAFPAC initiative started in Chad and DRC in mid-2011, these services were largely limited to short-acting methods. Our pre-program assessments identified a number of reasons for this. In Chad, national guidelines authorized only doctors based in hospitals to provide IUDs and implants, and, in both Chad and DRC, few providers had been trained to provide either family planning counseling or LARC services. As a result, providers lacked both the skill and confidence to deliver these services. Even when trained providers were available, extremely weak contraceptive supply chains led to chronic stock-outs, which meant that most of the time there were few, if any, methods available. The cost of services was also an inhibiting factor.

Successful performance is measured by the availability and high quality free family planning services that include all methods.

In Chad, only 1.5% of women of reproductive age used a modern contraceptive method in 2004. In the DRC, 6.7% used a modern method in 2007.

Although both contraceptives and consultations are supposed to be free in accordance with Chad's national reproductive health policy, providers often charged informal fees for their services in order to supplement meager and irregularly paid salaries. In DRC, facilities are permitted to charge user fees for certain services, including contraceptive services, in order to recover their cost of operation. Demand for services was further weakened by the lack of good information about contraceptive services, especially LARCs, combined with conservative social norms that stigmatize the use of contraception. These factors are challenges in stable populations. In the crisis-affected areas where CARE works in DRC and Chad, these barriers are magnified for displaced people and refugees who may not be aware of the different methods available to them, may not know where to get them, or, because of insecurity, may be unable to consistently access these services, even though studies show that they have a need for spacing and limiting births, as in any population.¹³

We noted a dramatic and sustained increase in new users of all contraceptive methods, especially implants.

In the first 3 years of programming in Chad and DRC, we noted a dramatic and sustained increase in new users of all contraceptive methods, especially implants. In the first 6 months following provider training, demand for implants was so strong that implants consistently comprised more than 50% of the method mix each month (reaching as high as 90% in Chad and 74% in DRC). While there is no correct mix of contraceptive methods, women must be able to access and freely choose from a wide range of contraceptives. A skewed method mix, defined as more than 50% of users relying on a single method, can indicate lack of choice.¹⁴ We expected a robust uptake of methods previously unavailable, as a result of pent-up demand. Nevertheless, 6 months after the initial trainings on LARCs, we decided to examine method mix patterns more closely and to investigate the dynamics driving choice of methods, especially implants and IUDs. We wanted to ensure that our program was promoting full contraceptive method choice and client-centered services.

METHODS

We used both quantitative and qualitative methods to examine contraceptive use patterns and factors contributing to the observed method mix.

Quantitative Data

Beginning in January 2012, we reviewed monthly routine service delivery data collected from

33 supported health facilities (14 in Chad and 19 in DRC), reaching a combined population of 1,053,927 in Logone Oriental and Moyen Chari provinces in southern Chad and in Maniema and North Kivu provinces in DRC between June 2011 and June 2015. These data include the number of new contraceptive users by method, month, and facility. We define a new family planning user as a client who is starting a modern method, switching from a traditional or a different modern method to a new modern method, or who is restarting a modern method after 6 months of nonuse. Our programmatic goal was to increase access to all methods, with attention focused on increasing the availability of little-known, highly effective long-acting reversible methods. We collected data on 6 modern contraceptive methods: oral contraceptive pills (OCs), injectables, implants, IUDs, tubal ligation, and no-scalpel vasectomy. We did not count traditional methods. We also did not track methods with typical-use effectiveness less than 90%.¹⁵ Thus, while we ensured that condoms were widely available and offered, we did not track new users of condoms. The Lactational Amenorrhea Method and Standard Days Method/CycleBeads are not consistently offered in the facilities that we supported, and so we did not monitor their use. This means that our reported method mix is not comparable to the broader contraceptive method mix studied in many national population surveys. However, it is possible to see trends in the data from each health facility.

Without training, coaching, guidance, simple tools, or positive support for data collection, the quality of data from public health facilities in eastern DRC and southern Chad can be very poor. One of the SAFPAC initiative's core elements was developing, in collaboration with government providers and managers, a robust system to track basic monitoring information (see the [supplementary material](#) for the monitoring and evaluation data flowchart). Service delivery data were drawn from existing government tools, such as registers, as well as new tools that we designed to fill the need for simple tools to track contraceptive users as well as for our specific monitoring needs for this program. CARE staff and providers collected de-identified user information, including choice of method, on a hard-copy monthly data collection form designed by CARE. Each district team entered this information by facility and month into a Microsoft Excel spreadsheet. District information was then rolled up to the

country level, where SAFPAC staff members compiled and reviewed the data as a Microsoft Excel data set and then sent it to the global program team for compilation and analysis.

Data quality was spotty in the initial phase of programming, as CARE facility and district staff learned how to use the new indicators, definitions, and data collection tools through a series of intensive 5-day trainings. One of the key factors in building data quality was consistent, regular supportive supervision by SAFPAC staff and government district and zonal staff. SAFPAC staff conducted regular data quality checks during monthly supervisory visits by cross-checking data in different records/datasheets. The global team was not the only group to analyze data; facility, district, and CARE staff members met during these visits to review, double-check, analyze, and make rapid action plans based on trends in the data. Teams at multiple levels also reviewed the data for errors. The initiative further benefited from a third-party monitor who made annual visits to all project sites from 2012 through 2015 to review the overall progress of the initiative and, in particular, to review data quality, completeness, and use.

For this article, we analyzed data from the global aggregated datasheet for the period from June 2011 to November 2015. We created pivot tables and generated graphs and charts to describe trends in the percentage distribution of new users by method at national and subnational levels.

Qualitative Data

We created a set of activities designed to assess communities' and providers' understanding of and attitudes toward various contraceptive methods. We integrated these activities into our participatory community reviews of facility data on trends in new users of contraception. We began our investigation by comparing the high uptake of implants to the relatively low uptake of IUDs. In Chad and DRC, during monthly and quarterly data review meetings with providers, health officials, community leaders, and community members, we explored reasons that implants were popular and IUDs were not. Data visualization was a core part of our participatory monitoring strategy and featured in the focused investigation of the unusual method mix. Facility staff members drew pie charts for contraceptive method mix and line graphs for trends over time

on flip charts that were displayed in the health facility and modified monthly based on data drawn from the register and collected in a simple form. During community meetings, men and women leaders in the community would review the wall charts, and they updated and sometimes corrected them.

In Chad, for this focused investigation, we reviewed the hand-drawn flip chart with user data displayed in the form of pie charts and graphs, and then we conducted informal focus group discussions with 15 community members from each of the 14 facility catchment areas, totaling 210 male and female community leaders (including both users and nonusers of contraception among the women leaders). We also interviewed 60 providers in small, informal focus group discussions. In Chad, the basic questions that we asked were: What are the factors underlying the high uptake of implants? Do women prefer them and, if so, why? Do providers prefer them and why? What are the positive and negative aspects of implants and of IUDs? What could be some strategies to communicate more effectively with clients and the public about a full range of contraceptive methods, including IUDs?

In DRC, we employed CARE's Social Analysis and Action approach,¹⁶ a participatory rapid appraisal technique, to conduct activities with women (both users and nonusers of family planning), adolescents (both in school and out of school), CHWs, health officials, and religious leaders (imams, pastors, and priests) to explore attitudes and beliefs concerning implants and IUDs in a nonjudgmental manner. The Social Analysis and Action approach is built on participatory learning and action tools and activities that help groups and individuals to raise and nonjudgmentally explore underlying factors related to power, gender, and culture that support or inhibit people's access to health services. In DRC, 500 people participated in small-group discussions. This number was slightly higher than in Chad, because the DRC initiative supported 19 health facilities, thus serving more communities than in Chad (which supported 14 health facilities). CARE's community engagement officers, who convened these discussions, asked questions similar to those asked in Chad: Why is the uptake of implants so high? Why do women choose implants more than any other method? What are the barriers to more women using IUDs? Do providers prefer implants to IUDs and, if so, why? Are there barriers to women's

One of the key factors in building data quality was consistent, regular supportive supervision.

Discussion questions included: "Why do women choose implants more than any other method?" and "Do providers prefer implants to IUDs and, if so, why?"

access to a full range of contraceptive methods, especially IUDs and, if so, why? What are some strategies to ensure that women have access to a full range of modern contraception? Teams in both countries took notes in notebooks or on computers during the discussions, debriefed together after them, and proposed a set of solutions, including key messages, drawn from community and provider feedback and their own analysis. The Chad and DRC teams then further developed potential solutions with the SAFPAC global team, either face-to-face or virtually.

Both quantitative and qualitative data were collected for the purpose of the continuous quality improvement of the project, not for the purpose of conducting systematic research in a strictly defined model. All data collection and analysis were conducted according to international principles of maintaining privacy and confidentiality of personal information.

RESULTS

Quantitative Data: Contraceptive Use and Method Mix Patterns

The SAFPAC initiative delivered family planning services to 82,855 people in Chad and DRC between June 2011 and November 2015. In Chad, we provided family planning services to 46,571 new users, for an average of 862 new users per month, reaching 34% of the eligible population (i.e., women of reproductive age). In DRC, we provided services to 36,284 new users, for an average of 685 new users per month, reaching 29% of the eligible population. In Chad, 55% (n=25,610) of all new users received services from primary health centers at the community level. Some 17% (n=7,942) received services from the district hospital, and the remaining 28% (n=13,019) received them from the regional hospital (Table 1). In DRC, 61% (n=22,103) of all new family planning users received services from primary health centers at the community level. Some 22% (n=7,835) received services from the referral primary health center. The remaining 17% (n=6,346) received services from the referral hospital for the health zone (Table 1).

In both countries, large numbers of people started using family planning methods, but the contraceptive method mix differed somewhat, even though the same methods were available in the intervention areas in both countries (Figure 1). In Chad, 53% (n=24,753) of all new users chose implants; 29% (n=13,601) chose

injectables; 14% (n=6,485) chose IUDs; 4% (n=1,679) chose OCPs; <1% (n=53) chose tubal ligation; and none chose no-scalpel vasectomy. In DRC, 51% (n=18,495) of all new family planning users chose implants; 30% (n=10,696) chose IUDs; 10% (n=3,629) chose OCPs; 8% (n=3,049) chose injectables; 1% (n=388) chose tubal ligation; and less than 1% (n=27) chose no-scalpel vasectomy.

In Chad, during this period primary health centers, district hospitals, and the regional hospital had similar contraceptive method mixes, with implants dominating, followed by injectables, IUDs, and OCPs, while a small number chose tubal ligation. Although primary health centers contributed only 55% of all new family planning users, they accounted for a disproportionate 65% of new OCP users and 60% of new IUD users. The district hospital, which contributed 17% of all new family planning users, accounted for two-thirds (66%) of the few tubal ligation clients. The regional hospital, which contributed 28% of all new family planning users, accounted for one-third (33%) of new users of injectables (Table 2).

In DRC, during this period all 3 facility types (primary health centers, referral primary health centers, and referral hospitals for the health zone) had similar contraceptive method mixes, with implants dominating, followed by IUDs, injectables, OCPs, tubal ligation, and a few no-scalpel vasectomies. Although primary health centers contributed 61% of all new family planning users, they accounted for a disproportionately large share of new OCP users (72%) and injectables users (72%). The referral primary health centers, which contributed 22% of all new family planning users, had a disproportionately large share of tubal ligation clients (35%) and new IUD clients (30%), whereas the hospital, which contributed 17% of all new family planning users, accounted for a disproportionately large share of no-scalpel vasectomy clients (67%) and tubal ligation clients (39%) (Table 2).

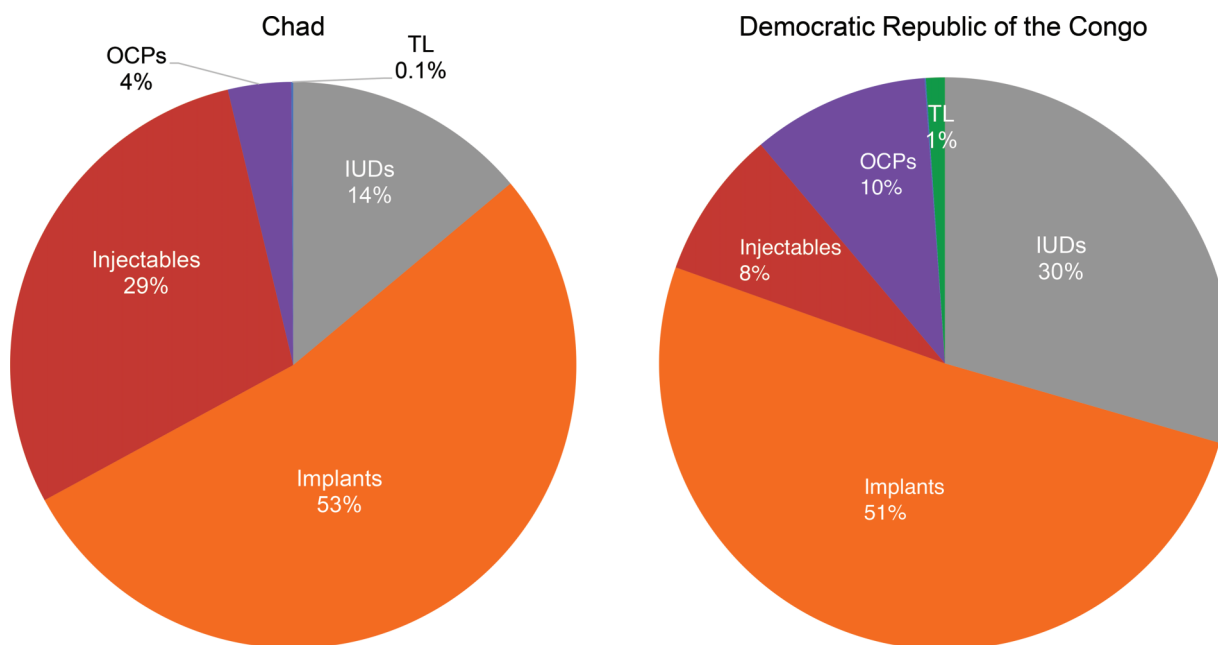
However, these cumulative figures mask the fact that the contraceptive method mix changed dramatically in both countries over 4 years. Figure 2 shows the percentage change over time in the 2 countries for the 6 main methods we focused on—implants, IUDs, injectables, OCPs, tubal ligation, and no-scalpel vasectomy, even though the latter 2 methods were available in only a minority of facilities in both countries.

Both countries saw a sharp increase in the uptake of implants after providers were trained on

TABLE 1. Number and Percentage of New Family Planning Users by Facility Type, Chad and DRC, June 2011 to November 2015

Health Facility Type	Chad No. (%)	DRC No. (%)
Primary health centers	25,610 (55)	22,103 (61)
District hospital ^a /referral primary health centers ^b	7,942 (17)	7,835 (22)
Regional hospital ^a /referral hospitals for the health zone ^b	13,019 (28)	6,346 (17)
Total	46,571 (100)	36,284 (100)

Abbreviation: DRC, Democratic Republic of the Congo.

^a For Chad.^b For DRC.**FIGURE 1.** Contraceptive Method Mix Among New Family Planning Users in Program Areas in Chad^a and DRC, June 2011 to November 2015

Abbreviations: DRC, Democratic Republic of the Congo; IUDs, intrauterine devices; OCPs, oral contraceptive pills; TL, tubal ligation.

^a None of the family planning users in Chad chose no-scalpel vasectomy.

TABLE 2. Source of Family Planning Service by Type of Method, Chad and DRC, June 2011 to November 2015

Method	Chad—No. (%)				DRC—No. (%)			
	Primary Health Centers	District Hospital	Regional Hospital	Total	Primary Health Centers	Referral Primary Health Centers	Referral Hospitals for the Health Zone	Total
IUDs	3,878 (59.8)	1,095 (16.9)	1,512 (23.3)	6,485 (100.0)	5,843 (54.6)	3,166 (29.6)	1,687 (15.8)	10,696 (100.0)
Implants	13,910 (56.2)	4,207 (17.0)	6,636 (26.8)	24,753 (100.0)	11,363 (61.4)	3,596 (19.4)	3,536 (19.1)	18,495 (100.0)
Injectables	6,723 (49.4)	2,376 (17.5)	4,502 (33.1)	13,601 (100.0)	2,189 (71.8)	447 (14.7)	413 (13.5)	3,049 (100.0)
OCPs	1,089 (64.9)	229 (13.6)	361 (21.5)	1,679 (100.0)	2,600 (71.6)	490 (13.5)	539 (14.9)	3,629 (100.0)
No-scalpel vasectomy	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	8 (29.6)	1 (3.7)	18 (66.7)	27 (100.0)
Tubal ligation	10 (18.9)	35 (66.0)	8 (15.1)	53 (100.0)	100 (25.8)	135 (34.8)	153 (39.4)	388 (100.0)
All users	25,610 (55.0)	7,942 (17.1)	13,019 (28.0)	46,571 (100.0)	22,103 (60.9)	7,835 (21.6)	6,346 (17.5)	36,284 (100.0)

Abbreviations: DRC, Democratic Republic of the Congo; IUDs, intrauterine devices; OCPs, oral contraceptive pills.

The method mix in both countries was more evenly distributed by the end of 2013 and has remained balanced and fairly stable since then.

long-acting reversible methods in November and December of 2011. Implants dominated the method mix for the next 5–6 months, displacing injectables in Chad and OCPs in DRC as the most popular method. In terms of percentage of the method mix, implants reached their peak in Chad in April 2012 at 90% and in DRC in March 2012 at 78%.

From this point onward, both countries saw a steady, gradual decline in the percentage of the mix attributable to implants, so that the method mix in both countries was more evenly distributed by the end of 2013. Since then, the total number of new users per month has remained stable or increased, and the method mix has remained balanced and fairly stable in both countries. In both countries, OCP use relative to other methods has decreased the most, and in DRC, IUD use has increased to more than 40% of the total method mix.

Qualitative Data: Factors Contributing to Early Contraceptive Use Patterns

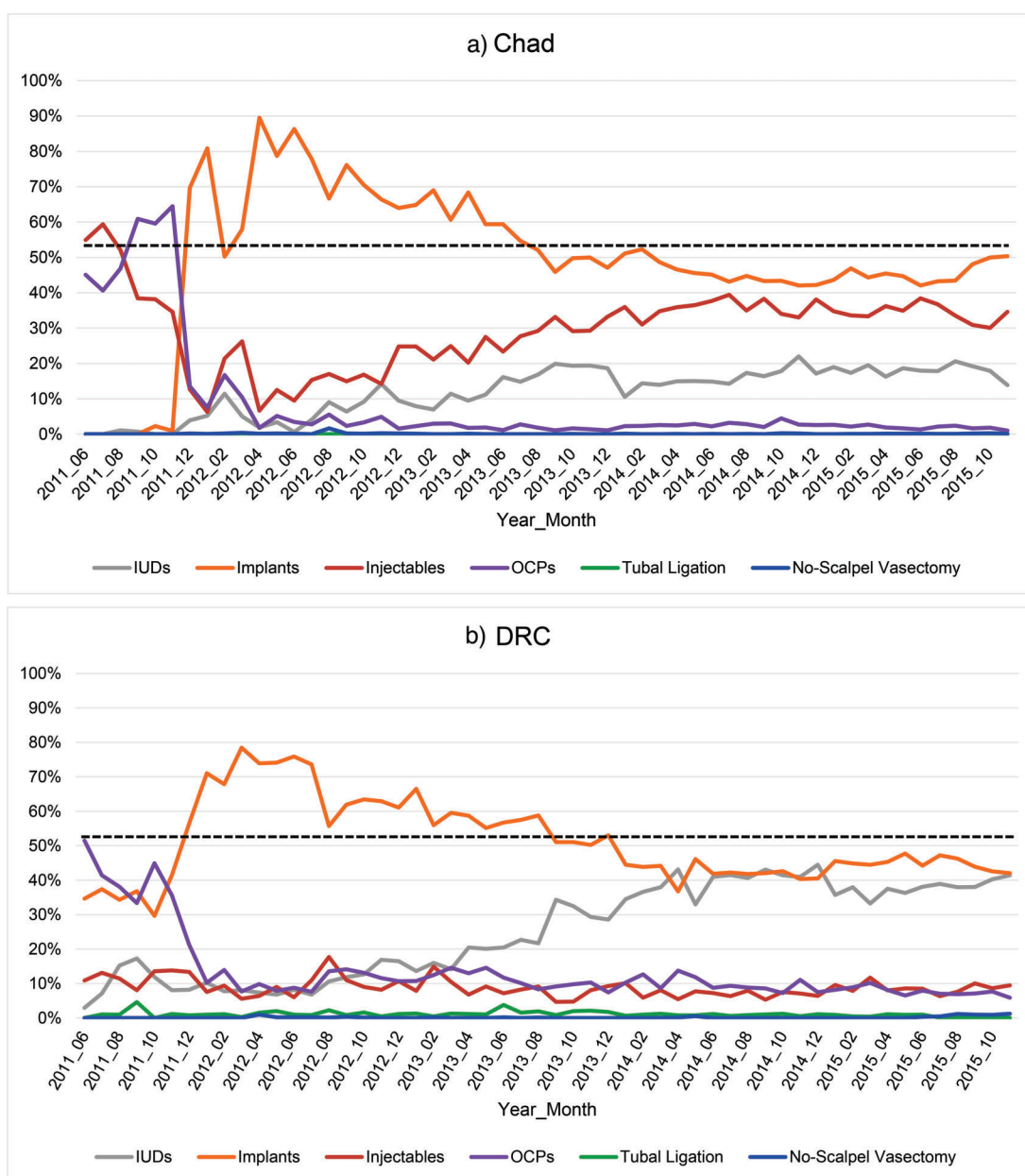
Our interviews and discussions with providers and community members revealed several factors contributing to the high initial uptake of implants and the relatively low uptake of IUDs.

These include both positive factors associated with implants and negative factors associated with IUDs.

Demand-Side Factors

- **Positive impressions of implants through word-of-mouth:** Implants created a buzz, and uptake was swift, as satisfied users talked about them. In Chad, many women reported choosing an implant because friends, family members, and neighbors had chosen implants and recommended them. In environments where there is little access to information through mass media, word-of-mouth and personal recommendations from trusted family and friends are very influential, as has been documented elsewhere.^{17,18}
- **Branding of the implant:** In Chad, many women liked the name of the implant “Jadelle” because it sounded like a woman’s name and was easy to remember. The implant also acquired a nickname, *les deux batons*, or “the 2 sticks”—another indication that word-of-mouth from satisfied clients contributed to uptake. In Chad, providers and community members said it was difficult to communicate effectively about IUDs because of the challenge

FIGURE 2. Monthly Trends in Uptake, as a Percentage of Total Uptake, of Different Contraceptive Methods Among New Family Planning Users in Program Areas, Chad (N=46,571) and DRC (N=36,284), June 2011 to November 2015



Abbreviations: DRC, Democratic Republic of the Congo; IUDs, intrauterine devices; OCPs, oral contraceptive pills.

Women liked implants because they last a long time, require only one trip to the health facility, and could be used without a partner's knowledge.

of translating “intrauterine device” into local languages.

- **Modesty/discretion:** Women liked implants because they last a long time, require only one trip to the health facility, and could be used without a partner's knowledge. Furthermore, implants did not require women to undergo a pelvic exam, unlike IUDs (which share many of the same benefits). Some women were unaccustomed to disrobing at all during health center visits. In particular, they were quite reluctant to disrobe in front of a male provider for an IUD procedure. In Chad, some women reported that not only were pelvic exams intrusive and undesirable, but also that they felt shame about the condition of their undergarments and their personal hygiene.
- **Fear and misconceptions about the IUD:** In DRC and Chad, providers and clients both held misconceptions about the IUD—that it caused cancer and infertility, that the string can bother the male partner during intercourse, and that it can cause malformations in the fetus. In Chad, community leaders displayed the IUD in its plastic package, which included the insertion trocar, making the IUD look very long and unlikely to fit inside a woman's body. In Chad, women also commented that they preferred the implant because after insertion it was palpable or visible under the skin, compared with the IUD, which could not be seen once inserted. This perception was linked to women's fear that the IUD, once placed, could move around in the body and possibly disappear.
- **Novelty of implants:** While this concept is intertwined with positive impressions, advantageous characteristics, word-of-mouth, and pent-up demand, implants were a new and, therefore, novel product in the intervention areas. People were already familiar with short-acting methods and were minimally familiar with IUDs. We believe that we experienced an initial spike in demand due in part to the newness of the method, which may have heightened its appeal. Similar spikes in demand following the introduction of a new method were noted for the IUD and pill in national family planning programs in several Asian countries during the early 1970s⁴ as well as for injectables in sub-Saharan Africa in the 1990s and 2000s.¹⁹

We believe there was an initial spike in demand for implants because of the newness of the method, heightening its appeal.

- **Negative associations with IUDs:** In DRC, negative impressions of the IUD persisted in some areas where, before program implementation, clients had complications after providers without training in IUD insertion had placed IUDs poorly. Osei and colleagues have described similar dynamics in Ghana.²⁰

Supply-Side Factors

- **Providers' comfort with implant insertion:** Health care providers in most settings are under time pressure. Providers in our program areas stated that implants were relatively easier and faster to provide than IUDs, in some cases taking only 10 minutes for the actual insertion. As a result, providers favored implants among the LARC methods. This was especially important in a context in which providers feel compelled to offer services to the 20 to 30 clients who present each morning and yet must farm or work other jobs in the afternoons because their jobs as health care providers pay poorly and often irregularly.
- **More opportunity for practice with implants:** Because implants were so popular with clients, providers had much more opportunity to practice implant procedures than IUD placements during training and in their actual practice. Both feedback from providers and clinical skills assessments indicated that more providers were competent and confident in implant insertion/removal than in IUD insertion/removal, creating a reinforcing feedback loop of client and provider preference for this method.
- **Misconceptions about IUDs:** The fear of untreated sexually transmitted infections (STIs) leading to pelvic inflammatory disease caused a decline in IUD use in sub-Saharan Africa in the 2000s.²¹ Similarly, in our discussions many providers mentioned their concern that STIs, which they identify through syndromic management, contraindicate placement of an IUD, and inconsistent availability of antibiotics made it hard for them to treat STIs. As a result, providers were hesitant to provide IUDs to women who might have an STI but where the facility had no antibiotics to treat the STI, resulting in missed opportunities to provide the method. In Chad, some providers and many community leaders also

erroneously believed that IUD use actually causes STIs.

PROGRAM REVISED IN RESPONSE TO FEEDBACK

Based on our analysis of the quantitative data and the results of the informal, participatory qualitative investigation that we conducted, we rapidly modified our programmatic activities. A summary of our modified strategies and activities follows.

Demand-Side Solutions

- In Chad, we worked with committees of religious leaders to better communicate the positive characteristics of IUDs while simultaneously reiterating that a broad range of methods was available at health centers. For example, one message pointed out the advantage of receiving a pelvic exam during IUD insertion, which could be used to conduct additional screening for STIs.
- Because the term “intrauterine device” was so difficult to translate, the Chad team discovered a simple local name built upon the widely used term for implants—“the 2 sticks”—and named the IUD “1 stick.” This name was well accepted and was later adopted in the DRC program as well.
- In DRC, we placed greater emphasis on IUDs in all our mass media and community mobilization work using radio, theater groups, and group discussions (including satisfied clients) while at the same time discussing a broad range of methods. We pointed out the benefits of IUDs, including immediate return to fertility, which was often mentioned in discussions as a positive characteristic of the IUD. We also addressed the myths and misconceptions concerning IUDs.

Supply-Side Solutions

- We introduced and trained providers on the Population Council’s “Balanced Counseling Strategy Plus Toolkit.”⁸ This counseling approach encourages the provider to focus first on what the client wants. It also includes visual job aids—small laminated cards that have pictures of each method on the front for the client and efficacy and side effects

information on the back, which cue the provider to share this information with the client. As a result, clients received better counseling about the pros and cons of each method, including side effects. We also reinforced counseling that dispelled local rumors such as the IUD causing cancer, the string bothering the partner during sex, and the possibility of a baby being born holding the IUD.

- Since the low level of demand for IUDs led to fewer chances for providers to practice, thus contributing to providers’ lack of confidence in providing this method, we conducted refresher training, using anatomic models, to strengthen provider competence and confidence. We focused on making sure providers understood the medical eligibility criteria for IUDs (and implants), which, for example, allow nulliparous women to use either method.
- We trained providers on syndromic management of STIs and ensured a stock of antibiotics in all clinics. In keeping with current World Health Organization (WHO) guidelines, we made a distinction between current purulent cervicitis (chlamydial infection and gonorrhea) and other STIs and vaginitis and the timing of IUD insertions. All cases of purulent cervical discharge (WHO Medical Eligibility Criteria category 4) needed to be treated first, and the condition resolved, before an IUD could be inserted. If a woman already had an IUD in place, the provider treated the condition without the need to remove the IUD, if the client wanted to continue to use the method (WHO Medical Eligibility Criteria category 2). For other STIs, a woman could have an IUD inserted (WHO Medical Eligibility Criteria category 2), while simultaneously being treated for bacterial vaginosis and other non-purulent STIs.
- In DRC, we developed agreements with facility teams to compensate providers more fairly for the extra time and complexity of offering an expanded range of free services, as well as the extra effort of data collection.

We noted a gradual shift in method mix over time, culminating in a more evenly distributed method mix by November 2015. For example, in April 2012 in Chad, implants accounted for 89% of the method mix, injectables 7%, and IUDs 2%. In November 2015, the method mix shifted to

Because the term intrauterine device was difficult to translate, the Chad program name the IUD “1 stick,” building on the local and widely used term for implants (“2 sticks”).

where implants accounted for only 50% of the mix, and injectables and IUDs increased to 35% and 14% of the mix, respectively (Figure 3). Similarly, in April 2012 in DRC, implants accounted for 74% of the method mix, IUDs 7%, and injectables 6%. In November 2015, implants and IUDs accounted for nearly equal shares of the method mix (42% and 41%, respectively), while injectables accounted for 10% of the mix (Figure 4). We believe our adjustments in programming influenced this change.

DISCUSSION

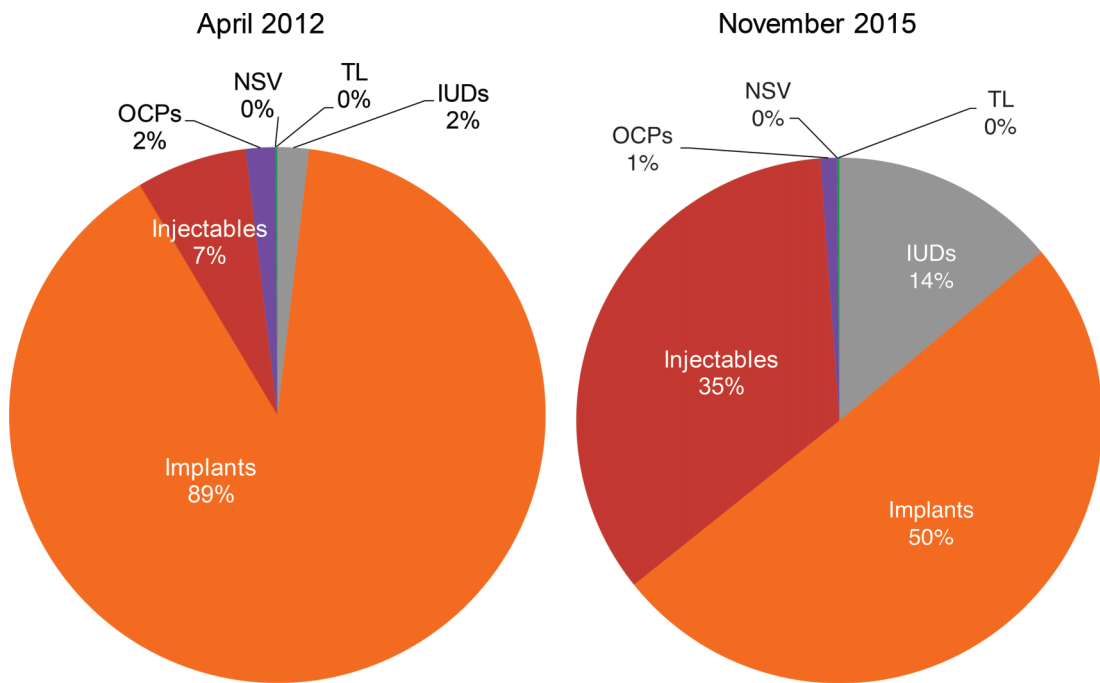
There has been a resurgence of global attention to meeting the large and growing need for contraception, especially in developing countries, through initiatives such as Family Planning 2020 (FP2020) and the United Nations Every Woman Every Child initiative. Importantly, the global conversation has included discussions

about quality of care, highlighting choice and voluntarism as key components of quality programming that respects and fulfills a woman’s right to receive the contraceptive method of her choice.²²

Our analysis contributes to this discussion by describing trends in method mix over time in 2 countries—Chad and DRC—where we implemented a focused set of interventions to improve access to and use of modern contraception, especially effective, long-acting reversible methods. Noting an early surge in use of implants, we explored factors that might underlie these trends. This analysis revealed a number of both demand- and supply-side factors contributing to these patterns. As a result, we made several changes to further improve programming and to ensure that women were being supported in making contraceptive decisions in the context of full choice.

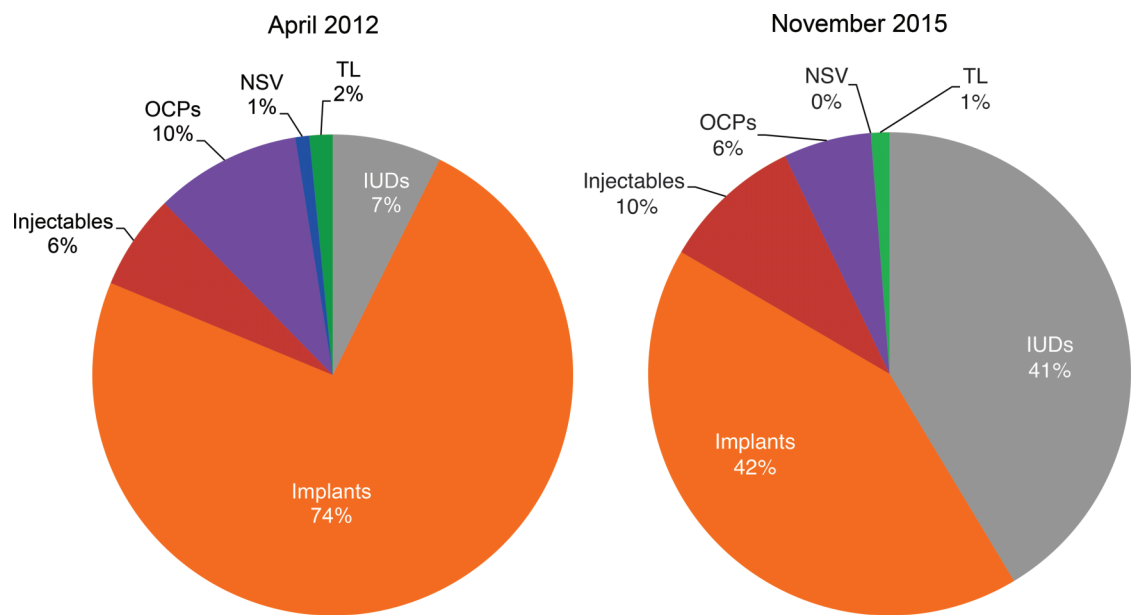
As our results demonstrate, SAFFAC succeeded in catalyzing large increases in the

FIGURE 3. Changes in the Contraceptive Method Mix Among New Family Planning Users in Program Areas, Chad, April 2012 Compared With November 2015



Abbreviations: IUDs, intrauterine devices; NSV, no-scalpel vasectomy; OCPs, oral contraceptive pills; TL, tubal ligation.

FIGURE 4. Changes in the Contraceptive Method Mix Among New Family Planning Users in Program Areas, DRC, April 2012 Compared With November 2015



Abbreviations: DRC, Democratic Republic of the Congo; IUDs, intrauterine devices; NSV, no-scalpel vasectomy; OCPs, oral contraceptive pills; TL, tubal ligation.

numbers of new users of contraception in both Chad and DRC. After we conducted the first competency-based training of providers on clinical skills for IUD and implant insertion/removal in late November and early December 2011, we saw a dramatic increase in the number of new contraceptive users, especially those choosing implants. In Chad, demand for implants was so unexpectedly strong that health facilities experienced temporary stock-outs of this method in January and February 2012, which we resolved by late March. In April 2012, the percentage distribution of implants in the method mix reached its apex of 90%. We also saw a rapid uptake of implants in DRC, where implants reached their high point of 76% of the method mix in March 2012. After ruling out data collection errors as a source of substantial overcounting, we held discussions between July and December of 2012 with both providers and community members to help us better understand these trends. These discussions confirmed that there was no outright coercion or other major barriers to women

either receiving the method they came in to get or being satisfied with the one they left with. During community conversations, clients spontaneously described many of the advantages of both implants and IUDs, but uptake of IUDs remained low. Accordingly, we placed particular emphasis on leveling the playing field for IUDs in relationship to implants (and also popular short-acting methods). We thought that, in addition to strengthening providers’ clinical skills, a major strategy should be to communicate the characteristics of IUDs more effectively both during client-provider interactions and in community messaging. As the data attest, the method mix gradually adjusted, including a steady relative decrease in implants and a steady relative increase in IUDs (as well as injectables in Chad) from mid-2012 to 2015. This shift coincided with our programmatic modifications designed to equalize access to all methods, in alignment with Hardee and colleagues’ broad definition of what constitutes access in family planning programs.²² This more evenly

We placed particular emphasis on leveling the playing field for IUDs in relationship to implants.

distributed method mix continues in our current programming. The high number of new users that we followed (more than 80,000), the consistency of trends, and the size of the observed change suggest an association between our program modifications and the shift in the method mix.

Finally, recent measures of the modern contraceptive prevalence rate (mCPR) by the national DHS survey in Chad, published in 2015, and in DRC, published in 2014, suggest that this expanded access to a broad range of methods, and in particular to LARCs, has contributed to an overall increase in contraceptive use in the rural and crisis-affected provinces and regions where CARE works. For example, in DRC the national mCPR in 2014 was 7.8%, compared with 8.2% in remote and rural Maniema province, where CARE is one of the few partners supporting family planning services generally and the only partner supporting LARCs. In North Kivu province, where CARE and 2 other NGO partners are supporting a modest number of health zones to improve family planning in this large and populous province, the mCPR is 11.6%, surpassed only by Kinshasa (19.0%) and Bas-Congo (17.2%), which are urban and peri-urban provinces.¹¹ In Chad, for most of the period covered, CARE was the only partner supporting the government to provide a full range of contraceptive services, including LARCs, in the Moyen Chari and Logone Oriental regions. The mCPR in these 2 regions is 11.4% and 11.3%, respectively, more than twice the national average of 5%.²³ The 2 regions bordering Moyen Chari and Logone Oriental, namely Mandoul and Logone Occidental, have mCPRs of 12.6% and 10.5%,²³ respectively, again with essentially no external support except from CARE.

Limitations

Careful review of our routine monitoring data, both through random chart and register reviews and the cleaning and reviewing of the spreadsheets at the country office and the global level, revealed no obvious problems with data quality that could affect these trends. Our participatory discussions with community stakeholders and providers followed good programmatic practices, including consistent questions across geographic areas in each country, note-taking, and then analysis by the project team. However, these efforts should be viewed as monitoring activities, intended to inform and improve a dynamic NGO

program, rather than as formal research. For example, the absence of a control group or cross-sectional baseline and endline surveys, which could show changes in the contraceptive prevalence rate specific to the CARE-supported facility catchment areas, limit our interpretation and also wider generalizability.

CONCLUSION

When the SAFAPAC initiative began in Chad and DRC, implants were a relatively unknown method, particularly in Chad. Rapid uptake followed their introduction in Chad and to a lesser extent in DRC. It is remarkable that large numbers of women chose these new and unknown methods so quickly and vigorously in the early and later phases of the project. This is not a new phenomenon, however. The introduction of injectables, and more recently implants, in sub-Saharan African countries over the past decade led to a similar dramatic increase in numbers of new users, and other programs providing intensive support for the introduction of LARCs or other neglected methods have had similar results.^{24,25} The introduction of a new method in a country often changes the method mix, either by increasing the number of new users or by inducing people to switch methods. In the latter instance, the concern is that people may switch from a more effective to a less effective method. Our data show that this was rarely the case; in fact, the introduction of implants (and reintroduction of IUDs) led to a substantial and sustained increase in the number of new users of all methods, including highly effective LARC methods. Our experience supports previous research demonstrating that use of modern contraception increases when more methods become available. Further, it suggests that the introduction of these new methods, and the concomitant improvement in service availability and quality, resulted in an acute increase in satisfied demand.^{4,26}

The literature, in particular Sullivan and colleagues' work on method mix, skew, and its relationship to choice (and satisfaction),¹⁴ helped us think critically about the skew that we saw early in our project and to ask important questions about factors underlying clients' choice of methods. While our goal was not to achieve an "ideal" method mix in which all methods have equal numbers of users, we did note a more equally distributed mix of methods from January

Introduction of implants (and reintroduction of IUDs) led to a significant and sustained increase in the number of new users of all methods.

to June 2015, including a very robust uptake of IUDs in DRC, which continues to the current months of programming.

The importance of a comprehensive program that includes both supply- and demand-side interventions cannot be emphasized enough. Good-quality training and coaching, excellent counseling, a consistent stock of contraceptives, and a welcoming clinic environment are necessary elements of the supply side of family planning services. Another key finding was that simply increasing knowledge and awareness was not enough. Barriers to access had to be addressed as well. Women wanted highly effective modern contraception. Identifying, exploring, and challenging social barriers to women getting those services, in particular, with influential and powerful leaders—religious leaders and police, for example—was instrumental in breaking down those barriers. We also found that investing time and effort in monitoring alongside district managers, providers, and community members and analyzing data together to make decisions and plan actions has been crucial to our success. In addition, conversations with both providers and clients helped us improve our strategies to increase access to a broader range of methods. We were able to make important program modifications to increase the quality of services and the acceptability of a broad range of methods. We focused on addressing the provider issues, particularly strengthening clinical skills and, importantly, counseling skills. We also adjusted our community communication strategies, so that both efforts reinforced the availability of a full range of methods and ensured that, regardless of method mix patterns, women were receiving the method of their choice and being provided the services and support to do so.

Attention to method mix will continue to be a priority in our program, and we will make the analysis of method mix, using the 50% rule, a regular feature of our data for decision-making process. We will also explore using a recently developed tool called “average deviation” of method mix to deepen our understanding of the factors influencing method distribution.²⁷ Given our success in increasing access to and use of LARCs, as suggested by the comparison with the recent national health survey data cited in this article, we will build on our experiences and increase our efforts in future programming to improve access to and use of permanent methods,

which have been largely neglected in central African contexts.

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ORIGINAL ARTICLE

Applying a Total Market Lens: Increased IUD Service Delivery Through Complementary Public- and Private-Sector Interventions in 4 Countries

Julia N White,^a Jamaica Corker^b

Between 2013 and 2014, IUD services provided to women increased more than threefold—from 22,893 to 79,162—in 417 public facilities in Guatemala, Laos, Mali, and Uganda through a Population Services International pilot that engaged the public sector alongside existing private-sector interventions within an informed choice context. Based on family planning market analyses, the country-specific interventions focused on strengthening policy, service delivery, supply chain management, and demand promotion.

ABSTRACT

Increasing access to the intrauterine device (IUD), as part of a comprehensive method mix, is a key strategy for reducing unintended pregnancy and maternal mortality in low-income countries. To expand access to IUDs within the framework of informed choice, Population Services International (PSI) has historically supported increased IUD service delivery through private providers. In applying a total market lens to better understand the family planning market and address major market gaps, PSI identified a lack of high-quality public provision of IUDs. In 2013, PSI started a pilot in 4 countries (Guatemala, Laos, Mali, and Uganda) to grow public-provider IUD service delivery through increased public-sector engagement while maintaining its ongoing focus on private providers. In collaboration with country governments, PSI affiliates carried out family planning market analyses in the 4 pilot countries to identify gaps in IUD service delivery and create sustainable strategies for scaling up IUD services in the public sector. Country-specific interventions to increase service delivery were implemented across all levels of the public health system, including targeted advocacy at the national level to promote government ownership and program sustainability. Mechanisms to ensure government ownership were built into the program design, including a proof-of-concept approach to convince governments of the feasibility and value of taking over and scaling up interventions. In the first 2 years of the pilot (2013–2014), 102,055 IUD services were provided to women at 417 targeted public-sector facilities. These preliminary results suggest that there is untapped demand for IUD service delivery in the public sector that can be met in part through greater participation of the public sector in family planning and IUD provision.

BACKGROUND

Increasing access to long-acting reversible contraceptives (LARCs), including the intrauterine device (IUD), is a key global strategy for reducing unintended pregnancy and maternal mortality.¹ IUDs are among the most effective forms of contraception,^{2,3} particularly compared with short-acting methods that are far more commonly used in most developing countries.⁴ IUDs

are also among the most cost-effective and safest forms of contraception⁵ and can play an important role in helping governments to reach Millennium Development Goal 5 (reduce maternal mortality; universal access to reproductive health) and the Sustainable Development Goals.

The challenge, however, is that the IUD has historically been underrepresented in most family planning markets, with little support from the private or public sectors to supply the method and little willingness and capacity to offer services.⁶ On the supply side, the main challenge is that IUDs are

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The IUD has been underrepresented in most family planning markets.

provider-dependent and require that health care providers be trained and willing to perform insertions and removals. On the demand side, many women are hesitant to use the IUD because of the insertion procedure that they consider invasive and because of persistent safety and efficacy misconceptions.⁷⁻⁹ Other barriers to IUD uptake include low awareness of the method, greater availability of short-acting methods, and limited counseling from providers on LARCs.^{10,11}

Population Services International (PSI) is a not-for-profit NGO operating in 66 countries around the world. Through network member organizations and network affiliates, PSI markets affordable health care products and services in developing countries and has maintained a focus on family planning by providing access to, promoting demand for, and improving service delivery of contraception.

As part of its family planning programs, PSI has prioritized expanding access to IUDs and establishing greater sustainability of IUD services in low-income countries within the context of informed choice.⁵ Informed choice means that women are able to make voluntary and informed decisions about family planning and have access to a full range of contraceptive methods. From 2008 through 2010, one of PSI's approaches for expanding the method mix was to focus on IUDs where they were unavailable or difficult to access, while maintaining an ongoing focus on providing the full range of available contraceptive options. This approach relied heavily on vouchers, free services, mobile service delivery, and seconding providers to public clinics.

By the end of 2010, however, PSI began phasing out these activities in favor of approaches that rely less heavily on donor funding. PSI switched its focus to supporting networks of private providers with the training, quality assurance, and equipment to provide unsubsidized IUD services.⁵ Targeted interventions included supportive supervision, on-the-job coaching and training, systematic quality audits, nonmonetary incentive schemes, and medical detailing. Improved interpersonal communication strategies, including careful mapping of intervention zones and use of education-through-listening techniques, helped boost consumer demand for IUDs and referrals to clinics for services. In addition, national-level advocacy aimed to foster a more supportive policy environment for IUD provision by focusing on establishing national LARC/IUD strategies, designing guidelines and curricula for health care provider

trainings, and establishing specific country budget line items for LARC/IUD procurement. It was expected that these targeted interventions would increase high-quality private-sector service delivery while national-level advocacy would translate into increased government support of public-sector IUD service delivery, ultimately resulting in increased IUD provision nationally.

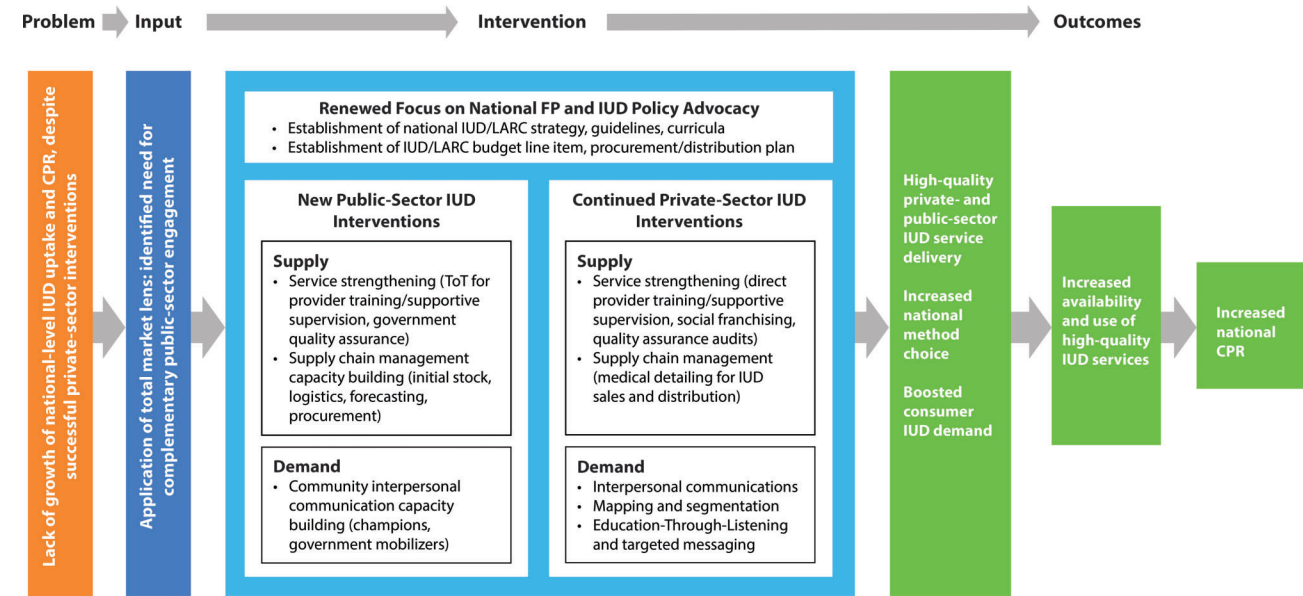
While there was initial growth in IUD uptake within the different country programs, PSI's efforts rarely translated into measurable population-level increases in the contraceptive prevalence rate (CPR) or changes in method mix. To better understand the issue, PSI applied a total market lens to look across the multiple players involved in family planning and IUD supply and demand in PSI IUD-intervention countries and identify where the market was failing or had gaps. PSI found that even successful private-provider family planning networks were often too small to reach the large segment of women of reproductive age who seek health care in public facilities. In addition, advocacy undertaken for national-level policy and procurement changes had generally not translated into increased IUD service delivery at public facilities. PSI determined that a lack of high-quality *public* IUD service delivery was a barrier to growing IUD use and expanding method choice in order to increase the overall CPR. It is crucial to ensure high-quality service provision of IUDs across both the public and private sectors, as inconsistent quality of service delivery in any one sector of the market can drive down overall demand. In PSI's theory of change (Figure 1), complementing its ongoing private-sector family planning and advocacy activities with a package of public-sector IUD capacity-building interventions would lead to increases in the uptake of IUDs that could ultimately impact the national-level CPR.

In 2013, PSI began a public-sector engagement intervention to pilot the theory of change outlined above in 4 countries: Guatemala, Laos, Mali, and Uganda. PSI chose these countries for the pilot because they were geographically and contextually diverse and all had high unmet need and low IUD use (Table 1), despite a history of successful PSI private-sector IUD interventions.

This article describes the first 2 years (January 2013–December 2014) of implementation in these 4 countries. It starts by detailing the country-specific analysis of family planning markets carried out to identify barriers to increasing

In PSI's theory of change, complementing ongoing private-sector family planning and advocacy activities with public-sector IUD capacity-building interventions can lead to increases in IUD uptake.

FIGURE 1. Population Services International’s Theory of Change for Implementing Complementary Public- and Private-Sector IUD Interventions



Abbreviations: CPR, contraceptive prevalence rate; FP, family planning; IUD, intrauterine device; LARC, long-acting reversible contraceptive; ToT, training of trainers.

IUD uptake. It then describes how each country designed interventions tailored to the public sector based on findings from the market assessment and calling on PSI’s best practices from private-sector IUD programs. Last, it outlines ongoing scale-up and sustainability steps designed to transition responsibility of all activities to government partners.

DATA SOURCES

Program data come from PSI country-level management information systems (MIS) from January 2011 through December 2014. Overall progress on this project is tracked through MIS data that are collected and reported monthly on IUD service delivery by distribution channel. Data for the market and facility analysis come primarily from baseline public facility assessments, PSI’s own formative research studies, and regular in-country market analyses of family planning supply and demand. PSI collects and analyzes data according to international principles

of maintaining privacy and confidentiality of personal information. These data are complemented with secondary sources, including the Demographic and Health Surveys¹²⁻¹⁴ and other household health survey data.¹⁵

PROGRAM DESCRIPTION

The pilot implementation process was not rigidly defined from the start. Rather, PSI affiliates in the 4 pilot countries loosely followed similar steps, as defined below.

Step 1: Understanding the Total Market

Prior to the start of the pilot, PSI affiliates in the 4 countries had been implementing successful private-sector IUD programs since 2011. PSI, therefore, already had an understanding of the family planning and IUD private-sector landscape in each country, including supply and demand barriers and gaps. To complement this knowledge, PSI encouraged its affiliates to apply a total

TABLE 1. Unmet Need for Family Planning, Contraceptive Prevalence Rates, and Source of IUDs Among Married Women of Reproductive Age in PSI Pilot Countries, 2008–2013

	Guatemala 2008–2009	Laos 2011–2012	Mali 2012–2013	Uganda 2011
Unmet need	20.8%	19.9%	26.0%	34.3%
CPR for all modern methods	44.0%	42.1%	9.9%	26.0%
CPR for IUDs	1.3%	1.6%	0.4%	0.5%
CPR for implants	NA ^a	0.1%	2.5%	2.7%
IUD source				
Public sector	51.8%	80.2%	78.3%	38.9%
Private/NGO sector	46.2%	16.2%	21.7%	50.4%
Other sector/missing	2.1%	3.6%	0%	10.6%

Abbreviations: CPR, contraceptive prevalence rate; IUD, intrauterine device; PSI, Population Services International.

^a Implants are included in the “other methods” category in the 2011 Guatemala survey.

Sources: Country household surveys.^{12–15}

market lens at the country level to look across the multiple players involved in family planning and IUD supply and demand and identify market failings or gaps, with particular attention to barriers in public-sector IUD service delivery. In collaboration with the country governments, PSI carried out family planning market analyses. PSI affiliates first gathered information on the CPR, the overall method mix, and modern method and LARC use. PSI also gathered more detailed information, including method source among current users, to identify where women in the respective countries were obtaining IUD services (Table 1).

Across all 4 countries, short-acting methods accounted for the majority of modern method CPR, while IUDs were used by only 0.4% to 1.6% of women of reproductive age (Table 1). Using these data, PSI affiliates worked with Ministry of Health (MOH) counterparts to forecast the impact of an expanded method mix, specifically one with an increased proportion of LARC and IUD use, on overall CPR growth. The MOH in all 4 countries expressed interest in working to expand the method mix through increased availability of IUDs.

As part of public-sector landscape analyses, PSI affiliates and the MOH conducted baseline assessments of preselected public-sector facilities to identify barriers to IUD uptake at the facility level. These baseline facility assessments included either a census of all eligible public facilities in intervention focus areas (Laos, Mali, and Uganda)

or a survey of selected intervention public facilities (Guatemala). Data were gathered first from facility registers on levels of service delivery, and then interviews were conducted with facility staff to determine provider skill level and supply and equipment availability. These public facility assessments complemented PSI’s own formative research and regular in-country market analyses of family planning supply and demand that look at provider skill and motivation, commodity supply chain, consumer awareness, and availability of IUD insertion and removal equipment at facilities.

Findings from the market analyses pointed to both shared and unique gaps in the public provision of IUDs across the 4 countries (Table 2). Common supply and demand barriers were similar to those previously identified in the private sector in these and other countries: low consumer demand, misconceptions about IUD safety and effectiveness, low levels of provider skill and motivation, and inconsistent quality of service delivery. There were notable country-specific variations, however, that highlighted key areas to address in order to have the greatest potential impact on IUD uptake. For example, challenges in each country’s commodity supply chain varied from low levels of procurement at the national level in Guatemala to problems with commodity forecasting and monitoring that led to stock-outs at different subnational levels in Laos, Mali, and Uganda. The identification of these context-specific

There were notable country-specific variations that highlighted key areas to address in order to have the greatest potential impact on IUD uptake.

TABLE 2. Key Findings of the Pilot Country Baseline Market Assessments

	Service Delivery Quality	Commodity Supply Chain	Demand	Policy
Guatemala	IUD and infection prevention equipment available in maternity and district hospitals; limited PPIUD equipment and gaps in provider IUD/PPIUD skills	Low levels of IUD procurement at the national level	Some demand for interval IUD services; little demand for PPIUD services	LARCs not included in the national family planning strategy; PPIUD not in the national guidelines for hospital providers
Laos	Average of 8 years since last IUD training among public family planning providers	Challenges in provincial forecasting and delayed transport of contraceptives to the provincial level resulted in IUD stock-outs	72% of women had heard of IUDs; high prevalence of myths and misconceptions	2012 moratorium on IUD service delivery in the private sector; lack of national LARC strategy
Mali	59% of public-sector family planning providers in surveyed facilities had never inserted an IUD	Inconsistent IUD availability at the health center level	53% of women had never heard of IUDs; high reluctance to undergo an IUD procedure that they considered invasive	IUD service delivery restricted to doctors and selected midwives; lack of national LARC strategy
Uganda	65% of surveyed public facilities had at least 1 provider trained in IUD insertion; limited IUD insertion equipment	Lack of district supply monitoring mechanism linked to stock-outs at secondary health facilities	70% of women were aware of IUDs; low IUD demand attributed to myths and misconceptions	Inactive family planning commodity security working group

Abbreviations: IUD, intrauterine device; LARC, long-acting reversible contraceptive; PPIUD, postpartum IUD.

priorities in the public sector was crucial for guiding the later development of interventions with MOH partners.

Step 2: Designing Interventions to Address Supply and Demand Barriers

Beginning in 2013, PSI affiliates began working directly with government partners to develop public-sector IUD interventions that would respond to gaps identified in the market assessments and complement ongoing successful private-provider programs. Initial geographic intervention areas and facilities were strategically selected with government partners in each country to increase geographic coverage of IUD services by prioritizing areas with large populations, high unmet need, and public health facility infrastructure (Table 3).

From the market assessments and its previous private-sector IUD experience, PSI and its affiliates identified 4 broad intervention categories: policy, service strengthening, supply chain management, and demand promotion. Policy activities

aimed to foster an enabling environment for increased public provision of IUDs and included continued advocacy to establish national strategies, guidelines, and curricula for LARCs/IUDs, and quantified government LARC/IUD procurement and distribution. Public-sector service strengthening activities included training of trainers to perform cascade trainings at all levels of the public sector and establishing systematic supportive supervision and MOH-led quality assurance audits for public facilities. Supply chain management involved providing initial commodity and equipment seed stock with technical assistance to strengthen commodity supply chain logistics, forecasting, and procurement. Demand-promotion activities most often included training public-sector providers in comprehensive family planning counseling, conducting interpersonal communication activities that included one-on-one or small-group conversations with women to better identify and respond to their family planning needs and concerns, and training public-sector

TABLE 3. Geographic Intervention Areas With Supported Public Facilities, as of December 2014

Country	Geographic Intervention Areas	Supported Public Facilities (N = 417) ^a
Guatemala	17 of 22 departments	24
Laos	10 of 17 provinces ^b	82
Mali	4 of 9 regions	189
Uganda	20 of 111 districts	122

^a The number of supported public facilities generally increased over time, with minor fluctuations between January 2013 and December 2014 due to intervention roll-out plans. Not all identified facilities began receiving support at the same time, and some facilities did not respond during data collection rounds conducted at multiple time points. The number of supported public facilities reported in this table and in the article is as of December 2014.

^b Two fully covered intervention provinces, as well as limited intervention in 7 additional provinces (1 hospital per province) and several central hospitals in the capital.

communication agents to conduct the interpersonal communication activities. Within each country, PSI affiliates and the government collaborated to design specific interventions for each of the 4 categories, as outlined for individual countries below.

Guatemala: Pan American Social Marketing Association (PASMO/Guatemala)

In Guatemala, the baseline facility assessment found that postpartum IUD (PPIUD) services were generally not available in maternity wards, and external research confirmed that the IUD was the least offered and requested of all modern contraceptive methods in public hospitals after delivery.¹⁶ While most maternity hospitals and centers surveyed were well placed to offer PPIUD services, they lacked fully trained staff and complete equipment. In collaboration with district-level staff of the Ministry of Public Health and Social Welfare (MSPAS), PASMO/Guatemala designed a strategy to introduce PPIUD service delivery in 37 facilities in 30 targeted districts that had labor and delivery services but registered few postpartum IUD services.

- **Policy:** PASMO/Guatemala successfully advocated the inclusion of PPIUD insertion in the insertion protocols of the MSPAS National Guidelines for Family Planning, as well as the addition of PPIUD service delivery in the curriculum in 12 teaching hospitals.
- **Service strengthening:** In collaboration with district-level MSPAS staff, PASMO/Guatemala started implementation in 24 of the 37 eligible facilities. PASMO/Guatemala trained 10 MSPAS master trainers in IUD/PPIUD service delivery and provided follow-up supportive supervision

to increase confidence. These master trainers are now responsible for organizing cascade trainings for MSPAS staff at secondary-level facilities in their districts.

- **Supply chain management:** In collaboration with the National Contraceptive Commodity Security Committee (CNA), PASMO/Guatemala facilitated the development of a contraceptive commodity forecasting tool to advocate increasing the share of LARCs in the method mix and to help the government plan for contraceptive procurement.
- **Demand promotion:** PASMO/Guatemala trained public-sector and auxiliary nurses in demand promotion and family planning counseling and conducted community-level one-on-one and small-group interpersonal communication activities with women.

Laos (PSI/Laos)

Although Laos requires all district and larger hospitals to offer IUD services, the market assessment highlighted areas to strengthen the quality of public-sector service delivery. Borrowing best practices from a successful primary health care capacity-building model,¹⁷ PSI/Laos worked with the MOH to select 2 provinces (Vientiane Province and Champasak) in which to pilot the multilevel public-sector model for improving IUD service delivery. Interventions were designed to improve and increase IUD service delivery in the public sector by strengthening services in the district hospitals and introducing IUD services in selected health centers. To prepare for future scale-up of activities and strengthen provincial trainer skills, the strategy also included the provision of limited

demand promotion and supervision support in 7 provincial hospitals and in the 4 central hospitals in the capital.

- **Policy:** Because of the 2012 government moratorium on private-sector IUD service delivery, PSI's policy work in Laos focused on advocating changes in the family planning law and the development of a national LARC strategy to allow for the resumption of IUD service provision by private providers.
- **Service strengthening:** PSI/Laos conducted an IUD training of provincial trainers, designed to establish cascade trainings down to the district hospital and health center levels that would include post-training supportive supervision.
- **Supply chain management:** PSI/Laos worked with the Medical Products Supply Technical Working Group to strengthen supply chain management for donated commodities. PSI/Laos and the United Nations Population Fund (UNFPA) agreed to sponsor a future workshop on estimating commodity needs with provincial maternal and child health coordinators in June 2015.
- **Demand promotion:** PSI/Laos interpersonal communication agents were assigned to each facility's catchment area to raise women's awareness of family planning and knowledge of facilities offering family planning counseling. In addition, PSI/Laos created a new village-level network of family planning champions, who can also promote IUDs, to gradually assume responsibility for demand promotion work.

Mali (PSI/Mali)

The public-sector facility assessment in Mali identified a dearth of qualified IUD providers at community health centers, owing to restrictions on provider eligibility to perform IUD services. As a result, PSI/Mali and the MOH identified task shifting to allow IUD service delivery (previously limited to doctors and a limited number of midwives) by all midwives and obstetric nurses as a priority. To complement the task shifting, they also prioritized the need to work with regional departments and health districts to strengthen IUD services in the referral hospitals. In collaboration with the regional and district health offices, PSI/Mali selected target health centers in 3 intervention regions (Kayes, Ségou, and Sikasso) and the capital (Bamako), based on the population in the facility catchment area,

geographic accessibility, availability of qualified staff, and infrastructure for infection prevention and patient privacy.

- **Policy:** At the national level, PSI/Mali successfully advocated approval to pilot the task shifting of IUD provision to midwives and obstetric nurses in lower-level public-sector facilities. PSI/Mali advocacy efforts also resulted in the inclusion of practical IUD training in the nursing and midwifery schools.
- **Service strengthening:** PSI/Mali supported the regional public-sector trainers to roll out IUD trainings and supportive supervision. Support was also given to public-sector district supervisors to conduct annual audits of the public-sector sites.
- **Supply chain management:** PSI/Mali helped organize quarterly district-level commodity forecasting meetings with health officials to improve methods for forecasting commodity needs.
- **Demand promotion:** In collaboration with local community-based organizations, PSI/Mali trained health center matrons (traditional birth attendants who provide health outreach) to incorporate LARCs/IUDs into their one-on-one or small-group outreach activities where they discuss reproductive health, including family planning.

Uganda: Programme for Accessible Health Communication and Education (PACE/Uganda)

In 2011, Uganda's national CPR for any modern method among married women of reproductive age was 26.0%, and only 0.5% for IUDs.¹³ Prior to 2013, PACE/Uganda implemented family planning and IUD interventions through its private, urban franchise of family planning service providers (ProFam). To expand its reach as part of the public-sector engagement approach, PACE/Uganda decided to focus on public facilities in rural areas. PACE worked with the MOH to design a broad strategy for strengthening IUD service delivery in these public facilities through direct collaboration with government district health teams (DHTs) across the country. After meetings with the MOH, 20 districts from across the country were initially chosen based on high unmet need, the presence of secondary-level health centers, and the number of active district health officers. Notably, prior to beginning activities, PACE/Uganda signed a memorandum of understanding (MOU) with the MOH and with each

Across all 4 pilot countries, PSI's public-sector IUD interventions targeted all levels of the public health system concurrently.

intervention district. The district MOUs formalized roles and responsibilities for sustainability and scale-up, including goals for annual growth in the number of public facilities offering IUD services.

- **Policy:** At the national level, PACE/Uganda was instrumental in reviving the Family Planning/Reproductive Health (FP/RH) Commodity Security Working Group and collaborating with this working group to update the procurement tables for contraceptives in order to streamline government forecasting and procurement planning. In addition, PACE/Uganda worked with the government and key stakeholders on a National Costed Implementation Plan on Family Planning.
- **Service strengthening:** Per the MOUs, PACE/Uganda initially trained 1 provider per selected facility and 1 reproductive health focal person per district in IUD service delivery, with steps put in place to help the districts assume responsibility for implementation and costs over time. The DHT then designated master trainers to lead trainings and reproductive health focal persons to lead quarterly supportive supervision and quality assurance at supported public-sector facilities in their districts.
- **Supply chain management:** PACE/Uganda participated in quarterly FP/RH Commodity Security Technical Working Group meetings that monitored national family planning procurement, forecasted commodity needs, and coordinated partner efforts. PACE/Uganda also collaborated

directly with DHTs to strengthen district IUD service planning, logistics, and budgeting.

- **Demand promotion:** PACE/Uganda facilitated DHT organization of monthly dialogue meetings with community health workers to help them address commonly encountered myths and misconceptions about family planning and IUDs. PACE/Uganda also supported family planning event days to promote family planning information and services, and to link women who wished to use the IUD immediately with providers with the most up-to-date training and skills.

Across all 4 countries, integrating the intervention package into the public health care system required continual advocacy and ongoing capacity-building interventions at different levels of the health system in order to implement changes made in national policy. PSI had learned that policy change did not necessarily lead to improvements at the facility level without subnational intervention and, at the same time, facilities could often not make service delivery improvements without policy guidelines and curricula. As a result, the public-sector IUD interventions were designed to target all levels of the public health system concurrently. If service strengthening at the national level focused on revising health care provider training guidelines, for example, direct assistance was provided for cascade trainings, based on the new guidelines, down to district and community health facilities. Likewise, commodity forecasting and procurement at the national level was coupled with concurrent support to regional- and district-level government authorities to improve forecasting and ordering to avoid stock-outs. The concept was similar in all countries; as an example, Figure 2 illustrates the different levels of IUD-specific interventions in the Guatemala pilot.

Step 3: Planning for Sustainability and Scale-Up

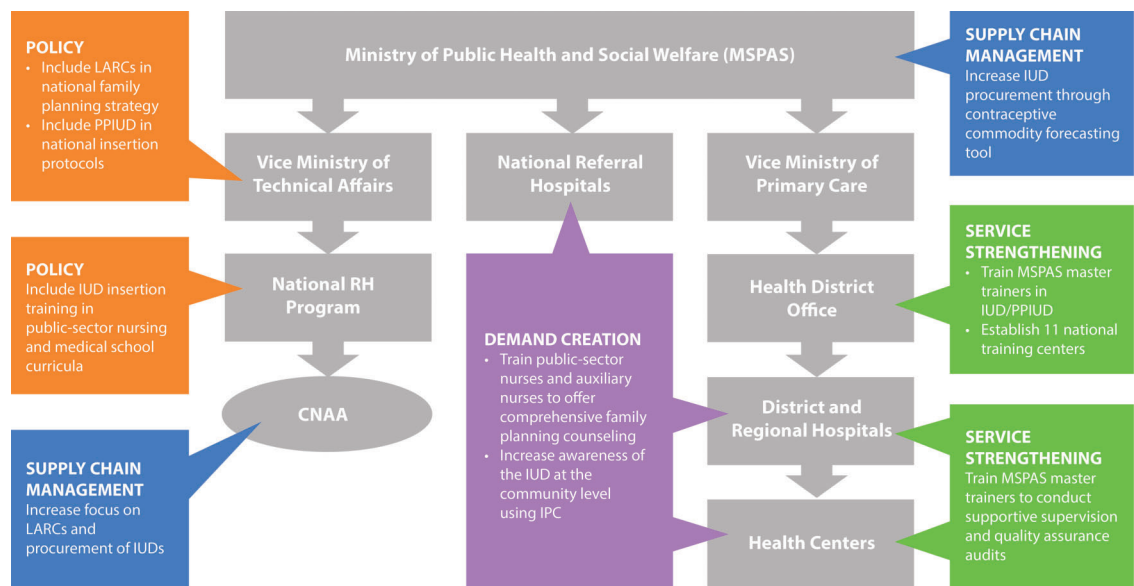
In all 4 pilot countries, PSI worked directly with government officials at the national and subnational levels to negotiate mechanisms in the intervention design to ensure eventual government ownership of increased IUD service delivery. PSI and government partners in each country agreed on a proof-of-concept approach, whereby PSI would provide initial intensive investment to support public-sector IUD interventions in a small geographic area, and would then use preliminary results to determine with the government the feasibility and value of scaling up the interventions nationally. Inherent in this approach was a gradual and structured transfer of implementation and



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A family planning client at Kawoko Muslim Health Centre in Kawoko Town, Uganda, holds an IUD while a midwife counsels her about the method.

FIGURE 2. Intervention Strategy in the Public Health System in Guatemala to Increase Public Provision of IUDs Within an Informed Choice Context



Abbreviations: CNAA, National Contraceptive Commodity Security Committee; IPC, interpersonal communication; IUD, intrauterine device; LARC, longacting reversible contraceptive; MSPAS, Ministry of Public Health and Social Welfare; PPIUD, postpartum intrauterine device; RH, reproductive health.

financial support responsibilities. Each year, government ownership of the national IUD program was expected to grow as PSI support to previous areas was reduced and instead focused on new areas.

The 4 PSI affiliates are working to design scale-up and sustainability plans that outline key activities and specify when primary responsibility for program costs and implementation will shift from PSI affiliates to MOH partners. Development of these plans is ongoing and specific to each country, although PSI’s experience in Uganda offers a more advanced example: PACE/Uganda’s early focus on national- and district-level MOUs facilitated a fluid transition from distinct roles and responsibilities to creating a sustainability and scale-up plan for some of the initial interventions (Figure 3). PSI affiliates in the other pilot countries are internally defining similar sustainability and scale-up plans.

PRELIMINARY RESULTS

After initial implementation of the IUD public-sector engagement interventions (January 2013 to

December 2014), there were notable increases in IUD uptake in pilot intervention areas across all pilot countries (Table 4): 22,893 IUD services were provided to women in the first year of implementation, increasing more than threefold to 79,162 IUD services in the second year. Thus, the total number of IUD services provided was 102,055 in the first 2 years. By the end of 2014, PSI affiliates were working through the respective country ministries of health to implement new packages of support activities for IUD service delivery in 417 public-sector facilities that previously offered limited IUD services. In the private sector, between 2011 (when IUD private-sector interventions began in the 4 pilot countries) and 2014, private-sector networks in the 4 pilot countries increased annual IUD services provided to women by almost 100%, from 32,127 to 59,716 (Table 4).

DISCUSSION AND PROGRAM IMPLICATIONS

Preliminary results from the first 2 years of PSI’s public-sector engagement pilot seem to offer

FIGURE 3. Uganda Sustainability and Scale-Up Plan to Transition the Public-Sector IUD Intervention Package to the Ministry of Health

	YEAR 1 Proof of Concept	YEAR 2 Transition of Support and Implementation to MOH	YEAR 3 Minimum Package for IUD services offered at 100 public-sector facilities	GOAL IUD services at public-sector facilities completely supported by MOH
POLICY	Planning, coordination and priority setting	Planning, coordination and priority setting	Planning, coordination and priority setting	Planning, coordination and priority setting
SUPPLY CHAIN	Commodity and Equipment	Commodity and Equipment	Commodity and Equipment	Commodity and Equipment
	Supportive Supervision Visits	Supportive Supervision Visits	Supportive Supervision Visits	Supportive Supervision Visits
SERVICE STRENGTHENING	Training	Training	Training	Training
	Quality Assurance	Quality Assurance	Quality Assurance	Quality Assurance
	Data Collection	Data Collection	Data Collection	Data Collection
DEMAND CREATION	IUD Demand Generation	IUD Demand Generation	IUD Demand Generation	IUD Demand Generation

PACE \$ and implements
 PACE \$ and MOH implements
 MOH \$ and implements

Abbreviations: IUD, intrauterine device; MOH, Ministry of Health; PACE, Programme for Accessible health Communication and Education.

TABLE 4. IUD Insertions by PSI-Supported Private- and Public-Sector Providers by Country, 2011–2014

Country	Private-Sector Providers					Public-Sector Providers				
	2011	2012	2013	2014	Country Total	2011 ^a	2012 ^a	2013	2014	Country Total
Guatemala	6,876	11,876	12,607	14,831	46,190	-	-	830	3,719	4,549
Laos ^b	240	657	199	0	1,096	-	-	906	6,812	7,718
Mali	1,608	5,999	8,326	8,219	24,152	-	-	8,662	9,906	18,568
Uganda	23,403	45,589	40,573	36,666	146,231	-	-	12,495	58,725	71,220
Annual total	32,127	64,121	61,705	59,716	217,669	-	-	22,893	79,162	102,055

^a Figures for 2011 and 2012 were not available.

^b A 2012 government moratorium on private-sector IUD service delivery halted private-provider activities.

support for the theory of change that complementing private-sector family planning activities with public-sector IUD capacity-building interventions can lead to increased provision of IUDs. The rapid increase in IUD service delivery among newly added public facilities, coupled with consistently strong IUD service delivery among PSI-supported private-sector providers, indicate that there is untapped demand for IUDs in both sectors in these 4 pilot countries. PSI believes that robust results from the first 2 years of program implementation, much of which involved start-up activities, suggest that continued growth in both sectors could lead to increases in IUD uptake that may help to increase the national-level CPR.

PSI also believes that encouraging early growth in public-sector IUD service delivery in these 4 pilot countries was due in part to the initial and sustained collaboration with governments on the design and implementation of intervention activities. Government collaboration took different forms across the pilot countries, but in all cases involved joint selection of priority geographic areas and co-design of country-specific public-sector intervention activities to address priority areas of IUD unmet demand. Engaging MOH partners from the earliest stages of the project also appears to play an instrumental role in establishing sustainability and scale-up plans to incrementally transfer the majority of roles and responsibilities to government partners.

Additionally, PSI's previous experience in these countries facilitated the design of context-specific interventions. As a result of its presence in all 4 countries, PSI already had experience with each country's family planning landscape and government partners prior to the pilot interventions. With findings from the market assessments, PSI and its government counterparts were able to identify key barriers quickly and found that they aligned with the 4 intervention categories that PSI was already using in the private sector (policy, service strengthening, supply chain management, and demand promotion). Although many of the activities under this pilot involved creating new approaches specific to the public sector, certain best practices were also integrated from PSI's array of private-sector family planning and IUD program experience. PSI found, for example, that many demand-side barriers were similar in the public and private sectors and was able to apply some of its existing interpersonal demand-promotion interventions in the public sector. Additionally, given limited private- and public-provider motivation to offer IUD services, PSI worked to

incorporate successful private-sector supportive supervision approaches into the public health system, with the aim of coaching providers to understand the value of offering a complete family planning package, including IUDs.

Last, findings from the early stages of this pilot also highlight the importance of working simultaneously across different levels of the government health system when promoting increased public-sector engagement in new intervention areas. National policy changes alone do not guarantee that these changes will be carried out at the facility level, and public health facilities often cannot implement improvements or changes without direct policy guidelines and curricula. As a result, PSI found that it was important to specifically design its public-sector IUD interventions to concurrently target all levels of the public health system, reinforcing national-level policy changes with capacity building at the subregional and district levels that responded directly to countrywide policy changes. This approach also allows feedback loops for top-down and bottom-up communication, as regional and district personnel are often involved in trainings and activities at the local level and with working groups at the national level, which enables them to promote improved IUD service delivery nationally and locally.

CONCLUSION

Complementing private-sector IUD activities with increased public-sector IUD interventions offers an opportunity to increase inclusion of IUDs as part of a comprehensive method mix. This is true particularly in countries that have strong private-sector service delivery interventions. The rapid growth in IUD service delivery in PSI's targeted public facilities in the 4 pilot countries in the first 2 years of program implementation, in tandem with consistently high numbers of IUD services provided to women by private providers, suggests that untapped demand for family planning can be met in part through greater participation of the public sector.

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Encouraging growth in public-sector IUD service delivery was due in part to the initial and sustained collaboration with governments on the design and implementation of intervention activities.

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ORIGINAL ARTICLE

Mentoring, Task Sharing, and Community Outreach Through the TutoratPlus Approach: Increasing Use of Long-Acting Reversible Contraceptives in Senegal

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Mentoring, task sharing, and community outreach at 100 rural facilities in Senegal led to an 86% increase over 6 months in the number of women choosing long-acting reversible contraceptives (from 1,552 to 2,879). Concurrent improvement of facilities and provider skills, coupled with the application of Senegal's task-sharing policy, are increasing the range of contraceptive methods available to women throughout the country.

ABSTRACT

Background: To broaden access to family planning in rural areas and improve contraceptive prevalence, Senegal, in the context of wide method choice, is promoting implants and the intrauterine device, currently used throughout the country by only 5.6% of women of reproductive age who are in union, primarily urban women.

Methods: The TutoratPlus performance improvement approach strengthens family planning clinical skills, particularly for long-acting reversible contraceptives (LARCs), through mentoring, task sharing, and community outreach. Following a 2013 baseline situation analysis, 290 participating facilities in 12 of Senegal's 14 regions developed action plans to address gaps identified in 3 areas: provider performance, equipment, and infrastructure. Between 2013 and 2014, 85 trained mentors coached, demonstrated skills, and observed 857 providers, including nurses, nonclinical family planning counselors, and community health workers (CHWs), in LARC service provision through two 5-day visits per facility at 21-day intervals. We used routine service delivery data and TutoratPlus mentoring data to assess changes in contraceptive use, including LARCs, 6 months before and 6 months after the mentoring intervention among 100 of the facilities with complete data.

Results: The baseline assessment of 290 facilities found that fewer than half (47%) had a provider who could offer at least 1 LARC method, and 64% to 69% lacked kits. Post-intervention, all 290 facilities were adequately equipped and clinically able to offer LARCs. Among the 552 clinical providers, the percentage with acceptable LARC performance (at least 80% of observation checklist items correct) doubled from 32% to 67% over the 2 mentoring visits. In the 100 facilities with available comparison data, the number of new LARC users rose from 1,552 to 2,879 in the 6 months pre- and post-intervention—an 86% increase.

Conclusion: Success of the TutoratPlus approach in Senegal is likely in part attributable to addressing facility-specific needs, using on-site mentoring to assess provider capacity, and achieving workplace enhancements through community engagement. Without CHW-initiated community outreach, LARC uptake might have been lower. Although task sharing requires institutionalization within national health systems, TutoratPlus demonstrates that provider skills can be improved, facilities can be better equipped, and demand can be promoted using existing government and community resources.

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BACKGROUND AND SIGNIFICANCE

Despite concerted efforts by government, civil society, donors, and other stakeholders to address family planning unmet need, contraceptive prevalence in the West Africa region lags behind other parts of Africa

and the world.¹ As of 2013, contraceptive prevalence in Western Africa was 18% for any method and 12% for modern methods, versus 33% and 28%, respectively, in Eastern Africa.² Given the large youth population in West Africa, the 83 million women of reproductive age estimated in need of family planning in 2015—up from 69 million in 2008¹—will only increase.

At the same time, countries in the region suffer critical shortages of physicians, nurses, and midwives. They typically have fewer than 2 health professionals per 1,000 people, with those professionals overwhelmingly based in urban areas and higher-level facilities.³ Because roughly two-thirds (63%) of the population in sub-Saharan Africa is rural,⁴ many rural West Africans lack access to high-quality, facility-based family planning and other health services. Higher fertility and lower contraceptive use in rural areas of sub-Saharan Africa⁵⁻⁸ lead to more unwanted pregnancies and higher infant mortality⁹—indicating the need for greater access to good-quality services.

In Senegal, the modern contraceptive prevalence rate (mCPR) remains low, although it rose from 12% to 20% between 2010 and 2014.¹⁰ As part of commitments made during the 2012 London Summit on Family Planning,¹¹ Senegal pledged to achieve a 27% CPR (by reaching an additional 350,000 women in union, including youth) and aspired to reduce unmet need from 30% to 15% by the end of 2015. As of the 2014 Continuous Demographic and Health Survey, unmet need had declined to 25%.¹⁰ To continue pursuing these aims, Senegal has put more emphasis on improving access to long-acting reversible contraceptives (LARCs) as part of a broader method mix that fosters access and choice.¹² Expanding access is especially important because only 5.6% of women of reproductive age in union in Senegal currently use LARCs.¹⁰ Rural women, in particular, have difficulty accessing the midwives and gynecologists who provide long-acting methods and who are primarily located in urban and more densely populated areas.¹³

One way to increase access to LARCs in rural and underserved communities is through task sharing, defined as a process “where appropriate, tasks that are normally performed solely by highly qualified health workers are also undertaken by health workers who have had less training and have fewer qualifications.”¹⁴ A review of published research focusing on task sharing in maternal and reproductive health found that task sharing has the potential to increase service

provision and can produce “equivalent health professional performance across cadres and patient outcomes.”¹⁵ However, task sharing in maternal and reproductive health requires adequate provider skills and supervision.¹⁵

West Africa has been slower than other regions to adopt task-sharing strategies, although some countries in the region are beginning to show an increased interest.¹⁶ In 2008, IntraHealth International/Senegal, through its Maternal, Neonatal and Child Health/Family Planning/Malaria project, supported by the U.S. Agency for International Development (USAID), began advocating to allow nurses to provide LARCs. Although it was largely untried in West Africa at that time, the approach held promise in Senegal where nurses are the principal family planning service providers in the lower-level primary health care facilities that serve the majority of the population. To test this approach, in 2009 IntraHealth designed and implemented a pilot performance improvement intervention called Tutorat (French for tutoring), which used on-the-job mentoring and skills reinforcement to train 407 nurses and midwives from 6 regions and 52 facilities in intrauterine device (IUD) and implant insertion and removal and infection prevention. Tutorat built on Learning for Performance,¹⁷ a proven performance improvement approach applied in a variety of national and local contexts.

Tutorat pioneered an on-site methodology to seamlessly integrate training, supervision, follow-up, and facility-wide performance improvement while building local ownership and a sustainable culture of quality. Based on the promising and well-received results from the Tutorat pilot, the Ministry of Health and Social Action added task sharing to Senegal’s reproductive health policies, norms, and protocols and committed to scale up task sharing nationwide. In 2011, IntraHealth’s USAID-funded Health Services Improvement Project developed the enhanced TutoratPlus performance improvement approach. TutoratPlus mobilizes all essential actors (providers, supervisors, managers, community leaders, and clients) to address service delivery shortfalls by strengthening the work environment and health worker skills and competencies using mentorship and community mobilization. One aim is to broaden the availability of family planning services, including LARCs, in all lower-level health facilities through task sharing. As a comprehensive intervention, TutoratPlus also addresses a number of other areas, but these are not the focus of this analysis.

Senegal has put more emphasis on improving access to LARCs as part of a broader method mix that fosters access and choice.

TutoratPlus mobilizes all essential actors, from providers, supervisors, and managers to community leaders and clients, to address service delivery shortfalls.

This article describes the multipronged TutoratPlus efforts in the area of family planning and examines LARC acceptance before and after implementation of TutoratPlus in lower-level health facilities. Our description of a nationally scaled-up task-sharing intervention will be of interest to other countries considering similar interventions, especially in the subregion of West Africa.

PROGRAM DESCRIPTION

TutoratPlus is a problem-solving performance improvement approach designed to achieve high-quality delivery of high-impact maternal, neonatal, and child health services, including family planning, by mentoring health workers in their facilities and strengthening the environments in which they work (Box 1). TutoratPlus developed 6 mentoring packages covering family planning; maternal health; disease management, including integrated management of childhood illnesses; facility management and organization of services (logistics, human resources, and financial systems); monitoring and evaluation; and health promotion and demand promotion. Implementation of TutoratPlus in Senegal has unfolded through 4 steps: situation analysis of service delivery gaps, development of facility- and district-level action plans, identification and training of mentors, and worksite coaching and supervision. The focus of this article is on the family planning mentoring package and its results; therefore, all references to TutoratPlus in general terms should be understood as referring to the family planning mentoring component.

At the facility level, the TutoratPlus approach has been implemented among qualified nurses



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A provider counsels a group of women about family planning at a health post in Ziguinchor, Senegal.

and midwives with clinical skills who provide family planning and other health services, as well as nonclinical and community health workers who provide family planning counseling and conduct demand promotion activities. All activities are carried out by existing ministry staff, with technical support from IntraHealth. The mentoring component, which is ongoing, started in October 2013.

Analysis of Service Delivery Gaps

The Ministry of Health and Social Action and IntraHealth/Senegal conducted a baseline situation analysis in all facilities before the intervention. The assessment examined:

- Providers' family planning knowledge and skills

BOX 1. TutoratPlus Principles

TutoratPlus is based on several principles:

- Classical trainings generally do not provide enough practical experience and also take providers away from their posts. The TutoratPlus on-site mentoring approach was developed in response to these challenges.
- Improving provider competencies is not enough to ensure high-quality services. The provider's work environment must also be taken into account, including infrastructure, equipment, and supplies. TutoratPlus examines the environment through a situation analysis.
- The contents of provider training and mentoring should be based on an empirical identification of performance gaps. Every TutoratPlus mentor is equipped with tools to measure and evaluate performance.
- Ensuring high-quality services is a whole-system process. TutoratPlus includes local officials and health committees in creating action plans and evaluating progress at regular review meetings.



A family planning provider with her mentor at the Mbouma Fatick health post in Senegal displays the job aid she uses to counsel clients on the complete range of contraceptive methods from which they can choose.

- The work environment (e.g., availability of running water, electricity, infection prevention materials, and IUD and implant insertion kits)
- Health facility infrastructure
- Work flow, management, and supervision
- Relationships with the community

We focused on identifying gaps contributing to poor performance.

Development of Action Plans

Each facility developed an action plan to address gaps identified in the situation analysis pertaining to the work environment and provider skills. Facility managers and community members developed the facility-level action plans. Districts then prepared a broader district action plan that synthesized the facility-level plans. The district-level action plans outlined activities to address 3 primary gap areas: provider performance, equipment (such as infection prevention materials and

The district-level action plans addressed 3 gap areas: provider performance, equipment (such as infection prevention materials and LARC kits), and infrastructure improvements to maintain client privacy.

LARC insertion and removal kits), and infrastructure improvements to help facilities maintain client privacy. The district-level action plans also identified needed resources, the individuals responsible for each activity, and the contributions and commitments of local health committees, local authorities, the government, and other partners. In all, 1,330 facilities in Senegal's 14 regions participated in this process and developed action plans (Box 2). Among them, 290 facilities in 12 regions included strengthening of family planning services in their action plans. These 290 facilities are the subject of this article.

Identification and Training of Family Planning Mentors

District staff of the Ministry of Health and Social Action recruited mentors already working in the public-sector health system at the district level. The work with TutoratPlus did not constitute a new, full-time job but rather was a supplemental duty in addition to mentors' scope of work, with no extra salary provided. The positions were advertised; qualifications included current competency in family planning provision, including LARCs, at least 3 years' professional experience, an interest in serving as a mentor on a longer-term basis, and strong interpersonal communication skills.

Ministry staff selected 85 family planning mentors from among district-level staff in 56 districts, with each district choosing 1 or 2 of the most highly qualified candidates (depending on district size) after carefully assessing applicants' knowledge and skills. Mentors were selected from sites with more than 1 service provider, so that service provision at their own facilities would not stop when the mentors made coaching visits to other facilities. In addition, district health teams jointly scheduled the visits with mentors and were responsible for ensuring that the mentor's absence from the facility did not have a negative impact on service delivery. A team composed of

BOX 2. Evidence-Based Scale-Up of TutoratPlus

The Ministry of Health and Social Action, with the support of IntraHealth, continues to scale up the TutoratPlus approach. As of 2015, 1,330 health facilities were enrolled in the TutoratPlus program, a level of expansion made possible because of the ministry's strong support for task sharing and decentralization of services such as provision of long-acting reversible contraceptives. Demonstrating its commitment to evidence-based decision making, the ministry's initial decision to scale up TutoratPlus was based on the evidence generated by the 2009 pilot Tutorat in 52 facilities.

ministry and IntraHealth trainers conducted the 10-day mentor training. The training covered principles of adult learning and communication and coaching skills, as well as practical supervision of providers in the workplace. While the mentors were required to possess the requisite clinical skills, the training included a refresher of clinical knowledge, especially with regard to mentoring other providers. All mentors also participated in test mentoring in nearby sites, and each mentor received an extensive manual on how to conduct the mentoring.

Worksite Mentoring and Supervision

On average, each mentor was responsible for visiting providers in 4 lower-level facilities, and mentors conducted two 5-day visits at each facility with a 21-day interval between visits. As noted previously, district health teams provided support to the mentors in scheduling and organizing their visits. All providers in each facility were included in the mentoring and supervision, including community health workers. During the first visit, armed with information from the situation analysis about service delivery gaps, the mentors met with local officials, health committee members, and facility staff to share and validate the identified gaps, as well as the intervention objectives and activity plans. During these visits, the mentors also individually observed family planning providers to assess their LARC skills with anatomic models. Following these observations, the mentors gave feedback to providers and performed a demonstration to correct shortcomings. When family planning providers did not achieve the required performance level (at least 80% of items correct on a standardized observation checklist¹⁸ from the World Health Organization [WHO] and approved by the Ministry of Health and Social Action) during the first observation, the mentors asked them to carry out repeat demonstrations as many times as needed to master the skill. On average, providers achieved an acceptable performance level after 5 anatomic model demonstrations. After providers demonstrated acceptable skills with the models, they applied the skills with actual clients under mentor supervision.

During the second visit approximately 3 weeks later, the mentors used the same observation checklist to assess providers' mastery of LARC clinical skills and address any lingering performance gaps.¹⁸ On the last day of the visit, the

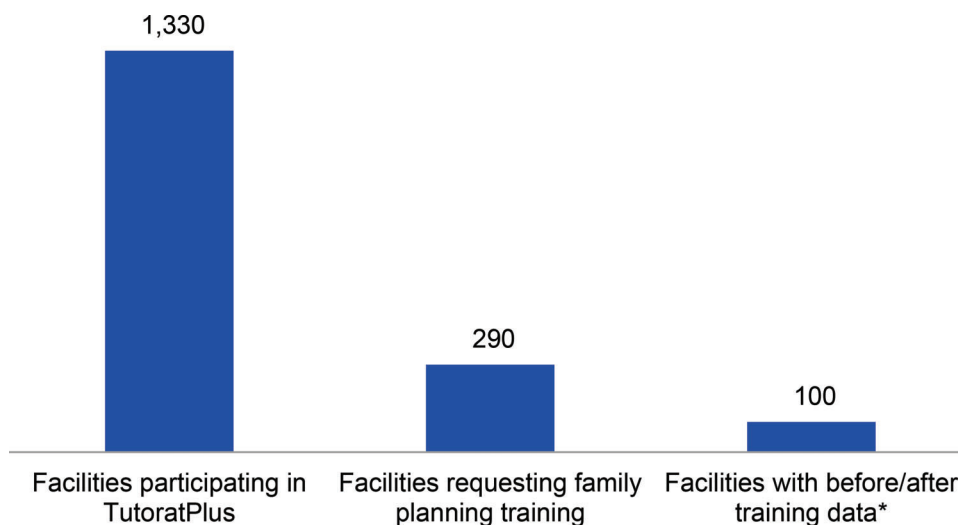
mentors presented their findings on the outcomes of the mentorship process to all of the partners involved in implementation, helping to emphasize the importance of this approach and build ownership. Subsequent to the second visit, mentors also shared their results with the district teams responsible for follow-up, supervision, and advocacy with local groups to assume responsibility for remaining equipment and infrastructure gaps. Mentors referred providers who did not meet the criteria for acceptable skills to district supervisors, who continued to mentor them until they met standards.

METHODOLOGY

The results for this paper are drawn from 4 data sources:

1. **The baseline situation analysis** provided data on availability of family planning services, including LARCs and insertion and removal kits for implants and IUDs.
2. **An internal IntraHealth database** produced data regarding TutoratPlus for each health facility receiving family planning mentoring and work-site support; financial and in-kind contributions of health committees and local constituencies were also recorded in this database.
3. **The standardized observation checklist**, based upon WHO guidance and included in the official family planning curriculum, generated data on provider performance during the mentoring visits.¹⁸
4. **Service delivery data** were extracted from the Data Exchange System (DES), the ministry's automated information system that uses mobile phones and the Internet to transfer and share information related to reproductive health,¹⁹ such as the number of new family planning users, the number of antenatal care visits, and the number of assisted deliveries. At the end of each month, data are sent from the health facility to the district via mobile phone. After validation, the data become visible to anyone accessing the system.

To assess changes in use of family planning, including LARCs, we merged the DES and internal databases to match the date of TutoratPlus mentoring with the number of family planning users served. For each facility, we constructed "before" and "after" periods, covering the 6 months before and 6 months after the TutoratPlus mentoring

FIGURE 1. Number of Facilities Participating in TutoratPlus and Included in the Analysis, Senegal, 2013–2014

* Complete data were available for 100 of the 290 health facilities; thus, only the subset of 100 facilities was included in the comparison analysis.

intervention in that facility. Thus, every facility has different dates comprising their before-and-after periods. For example, the comparison for a health facility that received mentoring in June 2014 would be between the 2 time periods of December 2013–May 2014 (before) and June 2014–November 2014 (after). Complete data were available for 100 of the 290 health facilities; thus, only a subset of 100 facilities is included in the comparison analysis (Figure 1). We excluded the remaining 190 facilities from the comparison analysis because they either lacked complete before-and-after data ($n=167$) or had no data at all ($n=23$) in the DES. The 2 samples (i.e., the full sample of 290 facilities and the subsample of 100 facilities) shared many characteristics, including similar distribution among types of structures, average number of health workers, region, and urban/rural setting. For other indicators, such as the achievement of acceptable performance standards, we report results for all 290 facilities.

RESULTS

The 2013 situation analysis of all 290 facilities found that fewer than half (47%) had a provider

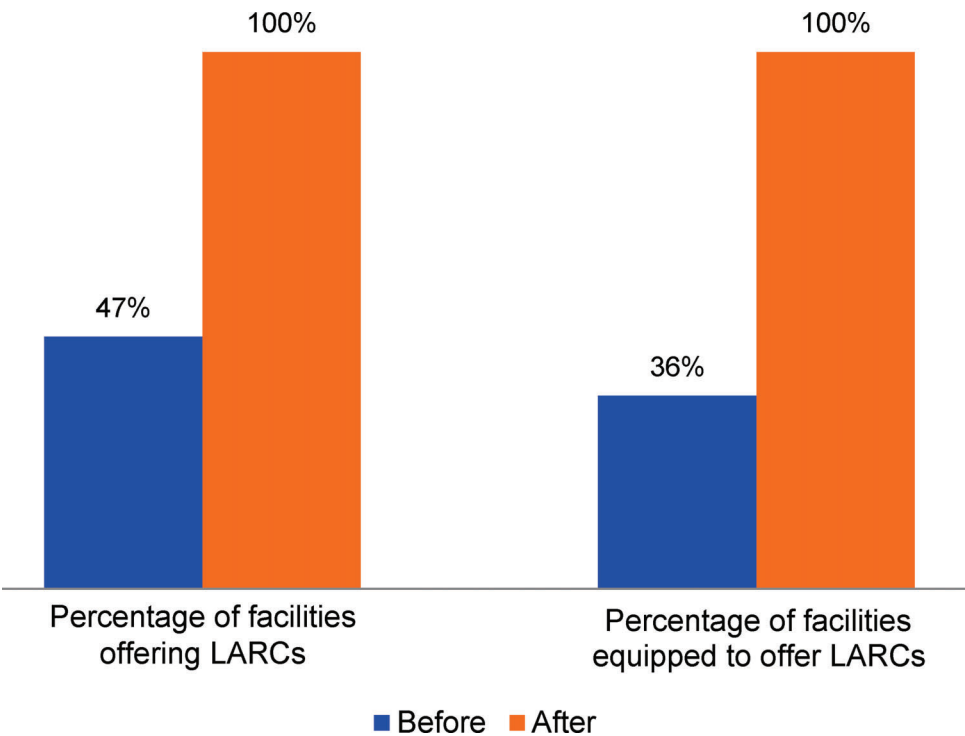
who could offer at least 1 long-acting reversible method, and only 36% had at least 1 IUD or implant insertion and removal kit immediately available (Figure 2). Sixty-four percent of facilities did not have implant kits in stock and 69% lacked IUD kits. After the workplace and mentor interventions and community engagement, all 290 facilities had the supplies to offer LARCs to their clients (Figure 2).

Of the 857 providers trained as part of the TutoratPlus intervention in the 290 facilities, 552 were clinical staff (the vast majority of whom were nurses and midwives) and 305 were non-clinical providers, such as community health workers, who received mentoring solely on family planning counseling of new clients. During the period beginning with the first mentor visit and ending with the second visit, providers carried out an average of 5 LARC insertions per facility. The proportion of mentored providers who had an acceptable performance level (at least 80% of observation checklist items correct) increased from 32% to 67% among the 552 clinical providers after the facility-based mentoring.

Together, health committees and local authorities contributed an estimated 67,023,288 CFA

After the workplace and mentor interventions and community engagement, all 290 facilities were adequately equipped with the supplies to offer LARCs to their clients.

FIGURE 2. Percentage of Facilities Equipped to Offer LARCs and With a Provider Able to Offer LARCs, Before and After TutoratPlus (N=290)



Abbreviation: LARCs, long-acting reversible contraceptives.

francs (FCFA) or roughly US\$114,570. Examples of the kind of support received by facilities include: infection prevention supplies, insertion and removal kits, and support for structural improvements to the rooms where family planning counseling and/or family planning services are provided, which improved the confidentiality of family planning services.

In the subset of 100 facilities for which comparison data on family planning service delivery were available, the number of new clients receiving any family planning method increased by 64% across the two 6-month time periods before and after the mentor intervention. The number of new LARC users increased by 86%, or 1,327 users (Figure 3). Within the category of LARC users, the distribution of implant versus IUD users did not change significantly across the 2 time periods. In the 6 months before TutoratPlus, 83% of LARC

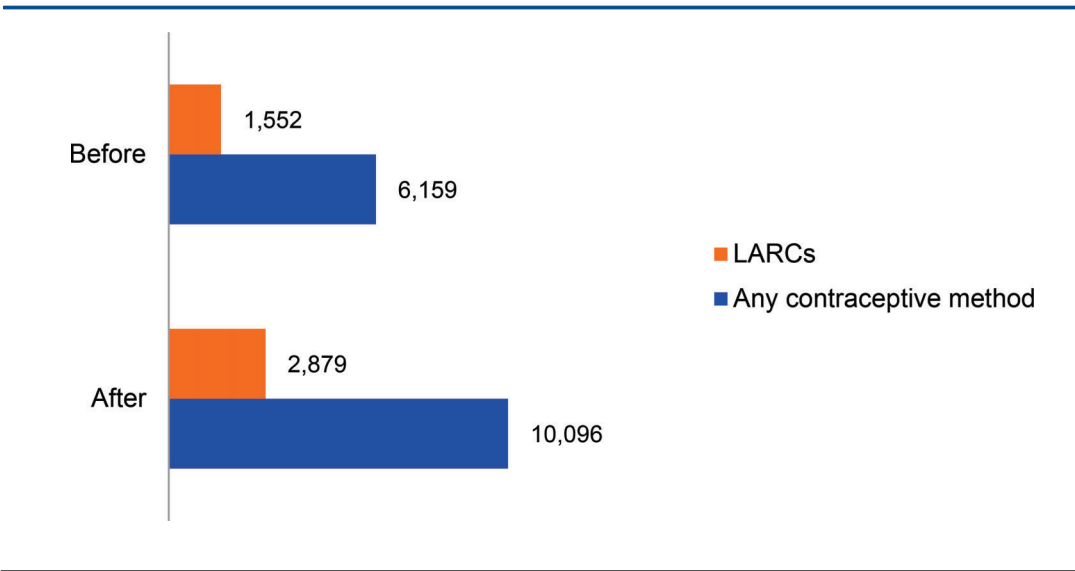
users adopted the implant and 17% the IUD. In the 6 months following TutoratPlus, 87% of LARC users were implant users and 13% were IUD users (not shown).

DISCUSSION

Senegal has made significant family planning progress. From 2010 to 2014, the mCPR rose by 8 percentage points, from 12% to 20%, among women of reproductive age in union.¹⁰ In this short period of time, the country made as much progress as in the previous 20-year period (1992–2011). Substantially more of this recent increase occurred in rural areas, where the mCPR rose by 86% (from 7% to 13%), compared with a 45% increase in the urban mCPR (from 20% to 29%).^{10,20} The broadening of the family planning method mix through expanded access to LARCs

The number of new LARC users increased by 86% after the mentoring intervention.

FIGURE 3. Number of New Contraceptive Users (of Any Method and of LARCs Specifically), 6 Months Before and 6 Months After TutoratPlus (N=100 Facilities)



Abbreviation: LARCs, long-acting reversible contraceptives.

**Communities
invested their own
money in the
health facilities.**

in rural areas undoubtedly contributed to this accelerated progress, with a 230% increase in LARC use, from 1.7% in 2010 to 5.6% in 2014.

The principal barrier that TutoratPlus sought to address in its family planning work was the lack of access to good-quality LARC services in rural and underserved areas. Within the wider context of rising acceptance of family planning, the sharp increase in the number of women adopting LARCs after implementation of provider mentoring and structural improvements demonstrates that there was a latent demand for these methods. Before the task-sharing policy was instituted and applied via TutoratPlus, only physicians and midwives—who are based at more centralized and higher-level facilities—could provide implants and IUDs. Previously, there was less chance for rural women, in particular, to adopt a LARC even if they knew about long-acting methods, because not all lower-level facilities offered LARCs, and travel to higher-level facilities is often not possible.

Some of the achievements of the TutoratPlus approach can be attributed to the fact that it addressed the performance and quality-of-care needs of each district and facility, based on evidence gathered during the baseline situation analysis. Based on previous experience with capa-

city building, the TutoratPlus approach acknowledges that not only family planning providers exhibit gaps in clinical and counseling skills; health facilities can also have gaps, notably in infrastructure and equipment, and communities must be informed to promote demand. This broader and more holistic approach enabled district stakeholders to create action plans based on actual needs rather than by trying to address LARC provision with the same approach for all facilities.

By openly presenting the results of the baseline situation analysis to health committees and local authorities, TutoratPlus encouraged these community stakeholders to get involved in extending and improving services in their local health facilities. As a result of this engagement, communities invested their own money in the health facilities (for example, channeling resources toward staff recruitment, improvements to counseling rooms, and acquisition of equipment and infection prevention materials), thereby providing some measure of sustainability for family planning and reproductive health services. In addition to the mentors’ activities, the vital role of the health committees and local authorities in strengthening the facilities’ work environment likely contributed to the increase in the number of women choosing LARCs.

Another key feature of the TutoratPlus design is that it seeks to address the difficulties associated with formal, off-site trainings. The latter are often expensive; remove providers from their facilities for several days or even weeks; and provide insufficient practical training with actual clients. The on-site mentoring approach adopted by TutoratPlus allowed for training based on a mentor's assessment of an individual provider's capacity in their work environment. Providers also had the opportunity to practice their skills with actual clients while under mentor supervision. Moreover, each mentor offered training and support to all the providers (both clinical and community health personnel) in a facility, increasing the efficiency of the approach.

The community health workers, in turn, informed their communities about the new LARC services available at their health facilities, in addition to the other family planning methods already routinely available. Without this element of demand promotion, LARC uptake rates probably would not have been nearly as high.

TutoratPlus is currently operating in 12 of Senegal's 14 regions, supported by IntraHealth's USAID-funded Health Services Improvement Project. The Ministry of Health and Social Action has embraced the approach and is currently working with the various branches of the ministry to integrate it into district and regional work plans. Once TutoratPlus is written into work plans, other partners supporting the ministry will be expected to adopt the approach as well, resulting in an institutionalization of TutoratPlus.

The number of new users served with a family planning method, including LARCs, may appear to be small in comparison with the national goal of serving 250,000 new family planning users in public facilities and at the community level over a 4-year period (2012–2015).²¹ However, the fact that 290 facilities, of the 1,330 total facilities participating in TutoratPlus, served over 10,000 new users in a 6-month period demonstrates that TutoratPlus will make a substantial contribution toward Senegal achieving its ambitious goal.

Beyond the investments made by community-based entities such as the health committees and local authorities, there are other steps that should be taken to ensure sustainability and institutionalization of both TutoratPlus and the task-sharing approach for LARCs.

1. The Ministry of Health and Social Action intends to fully disseminate the national policies and

protocols, ensuring a favorable climate for task sharing and ensuring that providers know the policy.

2. The skills needed to provide LARCs should be integrated into nurses' in-service training in a flexible manner. Factors such as provider workload and client demand will shape decisions about which nurses are most likely to make regular use of LARC skills.
3. Although TutoratPlus along with health committees and local authorities took steps to provide needed IUD and implant insertion and removal kits and equipment, some health facilities still face shortages. It is vital that the national logistics system stock and deliver this equipment in a timely manner to ensure that LARCs remain available.
4. The ministry is working to ensure continued regular access to family planning commodities. The rate of stock-outs in Senegal decreased dramatically (to less than 2%) after the introduction of the "Informed Push Model."²² If commodities are not available, women will not be served.
5. The mentors themselves need ongoing support, including supervision of their work as mentors. Because mentors spend time away from their own district-level facilities to mentor and supervise lower-level providers, ongoing provisions must be made through adequate staffing to support the mentors' facilities while they are away.
6. The Ministry of Health and Social Action should consider the mentors a valuable resource and make efforts to retain them in the districts and within the public health system. Over the course of the 2-year TutoratPlus intervention period, roughly half of the mentors who were trained left their facilities of origin. This necessitated training new mentors, and also meant that there were gaps in the support available to family planning providers offering LARCs.

Limitations

The pre/post-intervention study design and the absence of a control group are limitations of the analysis. We chose the pre/post-intervention design because the ministry mandated scaling up the TutoratPlus approach in all 1,330 health facilities covered by IntraHealth's Health Services Improvement Project; thus, a control group was not feasible. A second limitation pertains to the lack of routine

data of adequate quality for many of the health facilities that participated in TutoratPlus for family planning and for a longer period of time. It is possible that the 100 facilities with complete data are functioning at a higher level (at least with regard to recordkeeping) than those without complete data, which would introduce a bias. The 2 samples (i.e., the 290 facilities and the subsample of 100 facilities) were similar for many basic characteristics; however, it was not possible to more fully examine the reasons for incomplete data.

CONCLUSIONS

The experience with TutoratPlus demonstrated that when good-quality services are available and women are informed of their choice of contraceptive methods, including LARCs, more women choose to use a LARC. The approach also showed how capacity can be built and work environments improved using existing district-level and community resources, while promoting parallel demand for services. These concurrent facility-level and provider-level improvements, coupled with the application of Senegal's task-sharing policy, are increasing the range of contraceptive methods available to women throughout the country. As LARCs continue to become more available and acceptable, the mCPR is likely to increase, thereby contributing to the achievement of the government's ambitious goals and to the commitments established through the Ouagadougou Partnership²³ and the Family Planning 2020 partnership.¹¹

Although the Ministry of Health and Social Action modified its reproductive health policies, norms, and protocols to incorporate task sharing and authorize nurses to provide LARCs, the task-sharing approach requires an even stronger strategy to scale up this approach and achieve institutionalization within the national health system. As a step in this direction, the ministry and IntraHealth are conducting a national evaluation of TutoratPlus under the guidance of a ministry-led committee charged with articulating a strategy to maximize the approach's application within the public-sector health system. National-level institutionalization and the evaluation results may allow the approach to be assessed as a best practice and eventually rolled out throughout the West Africa region.

Competing Interests: None declared.

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ORIGINAL ARTICLE

The Tupange Project in Kenya: A Multifaceted Approach to Increasing Use of Long-Acting Reversible Contraceptives

Michael Muthamia,^a Kenneth Owino,^a Paul Nyachae,^a Margaret Kilonzo,^a Mercy Kamau,^a Jane Otai,^a Mark Kabue,^a Nelson Keyonzo^a

Use of long-acting reversible contraceptives increased significantly among women in a poor, urban setting through training, mentoring, commodity security, quality improvement, multiple service delivery models, and multiple demand-promotion approaches.

ABSTRACT

Background: Long-acting reversible contraceptives (LARCs) are safe and highly effective, and they have higher continuation rates than short-acting methods. Because only a small percentage of sexually active women in Kenya use LARCs, the Tupange project implemented a multifaceted approach to increase uptake of LARCs, particularly among the urban poor. The project included on-site mentoring, whole-site orientation, commodity security, quality improvement, and multiple demand-promotion and service-provision strategies, in the context of wide method choice. We report on activities in Nairobi between July 2011 and December 2014, the project implementation period.

Methods: We used a household longitudinal survey of women of reproductive age to measure changes in the contraceptive prevalence rate (CPR) and other family planning-related variables. At baseline in July 2010, 2,676 women were interviewed; about 50% were successfully tracked and interviewed at endline in December 2014. A baseline service delivery point (SDP) survey of 112 health facilities and 303 service providers was conducted in July 2011, and an endline SDP survey was conducted in December 2014 to measure facility-based interventions. The SDP baseline survey was conducted after the household survey, as facilities were selected based on where clients said they obtained services.

Results: The project led to significant increases in use of implants and intrauterine devices (IUDs). Uptake of implants increased by 6.5 percentage points, from 2.4% at baseline to 8.9% by endline, and uptake of IUDs increased by 2.1 percentage points, from 2.2% to 4.3%. By the endline survey, 37.7% of clients using pills and injectables at baseline had switched to LARCs. Contraceptive use among the poorest and poor wealth quintiles increased by 20.5 and 21.5 percentage points, respectively, from baseline to endline. Various myths and misconceptions reported about family planning methods declined significantly between baseline and endline.

Conclusion: Training, commodity security, multiple service delivery models, and demand promotion were the cornerstones of a successful approach to reach the urban poor in Nairobi with LARCs.

BACKGROUND

Long-acting and reversible contraceptives (LARCs), comprising implants and intrauterine devices (IUD), offer immense potential to meet the need for family planning because they are safe, highly effective, and do not rely on adherence or postcoital vigilance, as is the case with pills, injectables, barrier methods, and emergency

contraception. LARCs have a higher continuation rate and are more cost-effective than short-acting methods, and they do not have the health risks associated with estrogen-containing contraceptives.¹ However, in many countries in sub-Saharan Africa, fewer than 5% of women who reported using contraception in the past decade were using LARCs.² This proportion has not changed significantly. The reasons for low uptake include misperceptions about the safety and efficacy of LARCs, perceived lack of consumer

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demand, inadequately trained providers, and the relative complexity of providing LARCs compared with short-acting methods.³ In Kenya in 2008, only 1.1% of sexually active women used IUDs and 1.3% used implants.⁴

To address the unmet need for family planning, especially among the urban poor, the Bill & Melinda Gates Foundation launched the Urban Reproductive Health Initiative (URHI) in India (Uttar Pradesh), Kenya, Nigeria, and Senegal. The project in Kenya, named Tupange for “Let’s plan” in Swahili, was implemented by a consortium of 5 agencies, led by Jhpiego, and including Marie Stopes Kenya, Pharm Access Africa Ltd, the National Council for Population and Development, and the Johns Hopkins Center for Communication Programs. The 5-year Tupange project was implemented in Kakamega, Kisumu, Machakos, Mombasa, and Nairobi. Tupange, in collaboration with the Ministry of Health (MOH), implemented demand- and supply-side interventions to increase the CPR. In Nairobi, we implemented the project in 92 public and private health facilities between July 2011 and December 2014, with a focus on poor urban areas.

Nairobi typifies the rapid urbanization and population explosion in sub-Saharan Africa. Nairobi’s population is 3.1 million, and it has an estimated annual population growth of 4.1%.⁵ A consequence of the rapid and uncontrolled population explosion is the proliferation of informal settlements, with an estimated 60% to 70% of residents living in slums.⁶ Tupange worked in all 9 subcounties in Nairobi.

THE TUPANGE INTERVENTIONS

Tupange’s interventions included building capacity of service providers, improving quality, increasing commodity security, establishing multiple demand-promotion and service delivery models, and conducting advocacy for family planning (Figure 1). The project provided technical support; training materials; medical consumables logistical support; and information, education, and communication materials.

Capacity Building

A baseline service delivery point (SDP) survey in July 2011 showed that most service providers were not skilled to provide LARCs, and facilities were poorly equipped. The Tupange project addressed these challenges in a variety of ways.

Contraceptive Technology Updates

We provided all intervention sites with 5-day theory-based and practical trainings on basic family planning, focusing on short- and long-acting methods. Service providers practiced insertion skills on models and performed role plays to strengthen their counseling skills. Competency checklists were used to assess skills.

Mentoring

We offered facility-based training to service providers with a skilled mentor who gave step-by-step guidance on LARC services. Service providers needed to have basic family planning training to qualify for mentoring. The timing of the mentoring was dependent on the availability of the mentor and the service provider and the workload at the facility. Each service provider had to conduct 10 implant (Implanon or Jadelle) insertions and 10 copper IUD insertions as well as 5 implant and 5 IUD removals under the mentor’s observation before they were evaluated and certified by an external assessor. The service providers’ log books were used to track insertions and removals. To ensure objectivity, the assessors used the competency checklists for clinical assessment.

Because mentors had different training backgrounds, we conducted a 2.5-day skills-standardization training. Mentoring involved a didactics session coupled with practice on models. Initially, subcounty reproductive health coordinators worked with facility mentors to ensure that they were mentoring according to the standard. Once the coordinators confirmed the quality of the mentoring, it became a purely facility-based activity.

Mentorship assessment was a challenge early in the project due to the limited number of clients visiting facilities for IUDs. Later, the coordinators conducted mentorship assessments during integrated community outreach events where health wagons created an ideal clinical setup. Health wagons are mobile clinics pulled by a truck with essential equipment and supplies for offering health services.

Whole-Site Orientation

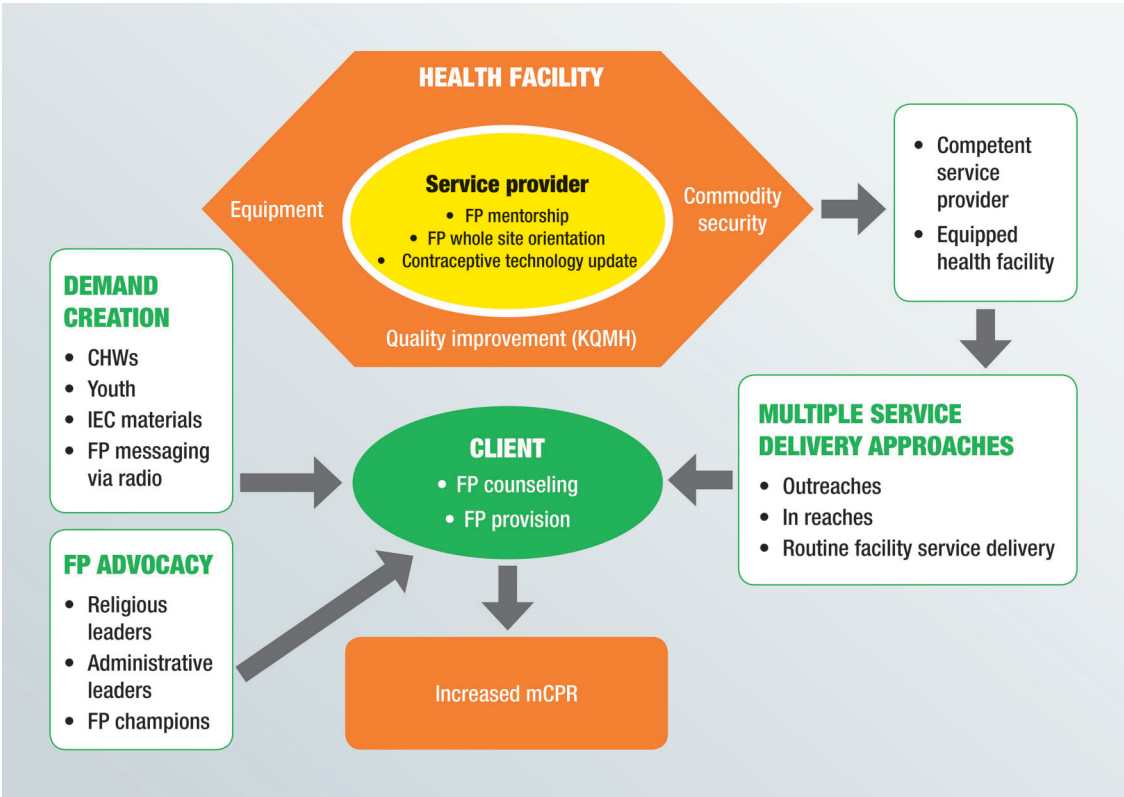
We conducted whole-site orientations in health facilities to build the capacity of the staff. Both clinical and nonclinical staff (including cleaners and watchmen) received updates on family planning and LARCs through low-dose, high-frequency training. The orientation entailed 12 one-hour sessions at the facility at a convenient time that minimized

The reasons for low uptake of LARCs include misperceptions about their safety and efficacy, perceived lack of consumer demand, inadequately trained providers, and the relative complexity of providing LARCs.

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FIGURE 1. Tupange Project Conceptual Framework



Abbreviations: CHW, community health worker; FP, family planning; IEC, information, education, and communication; KQMH, Kenya Quality Model for Health; mCPR, modern contraceptive prevalence rate.

disruption of services. In addition to covering family planning in general, the orientation focused on interpersonal communication skills, commodity management, and correcting family planning myths and misconceptions, especially about LARCs, among staff. Tupange used the provider-initiated family planning approach, which integrates family planning into other services to avoid missing opportunities to offer family planning. Staff were oriented to refer appropriate clients, who were visiting the facility for other reasons, to the family planning room for counseling and services.

Equipment

The Tupange baseline survey and a facility rapid assessment in 2011 identified a lack of or inadequate essential LARC equipment and supplies.

Tupange procured and distributed essential equipment and supplies on a need basis. These included implant and IUD insertion/removal sets, blood pressure machines, speculum sets, forceps, autoclaves, screens, examination couches, hand-washing buckets, examination lights, Macintoshes (rubberized cloths used to cover examination couches for infection prevention purposes), decontamination buckets, and heavy-duty gloves. Equipment distribution was done in conjunction with the subcounty teams, and the MOH included the equipment in its inventory.

Kenya Quality Model for Health

It was difficult to uniformly assess the quality of services at supported facilities because they implemented different quality-improvement models.

Therefore, the county government adopted the Ministry of Health's Kenya Quality Model for Health (KQMH) as the universal model for monitoring quality improvement. KQMH involved formation of work improvement teams with representatives from all service delivery areas and the community served by the facility. The teams met regularly to assess the quality of services in all service delivery areas and to identify areas of improvement. Teams used the National Integrated Family Planning Standards to identify family planning gaps. Facilities that performed well served as benchmarks for other facilities to learn from.

Supportive Supervision

Tupange supported quarterly integrated, supportive supervision visits by the county and sub-county health management teams, who worked with service providers to address challenges faced by facilities in the provision of LARC services.

Commodity Security

At the beginning of the project, commodities were available at the national stores, but challenges in last-mile logistics meant commodities were not routinely available at the point of use. Tupange's innovative approach to addressing last-mile logistics included training of service providers and commodity managers on family planning commodity management through a 2.5-day module, use of an SMS (short message service, or text message) commodity tracking system, and redistribution of commodities based on real-time data from the SMS system (the Informed Push Model). The project included refresher and on-the-job trainings to address staff transfers and increase the number of staff competent in commodity management. Tupange also strengthened the national commodity supply pipeline by participating in the national technical working group on commodity security.

Service Delivery Models

In addition to routine facility service delivery, Tupange used integrated outreach and in-reach activities to offer women family planning, including LARCs. Integrated outreach activities took place in hard-to-reach areas in the community to take services where they were needed. Integrated services during outreach activities included cervical cancer screening, HIV testing and counseling, deworming for children, growth monitoring, and vitamin A administration.

In-reach activities involved a team of a doctor, a nurse, and a care assistant who provided efficient, focused, high-quality services at high-volume facilities on scheduled days. They had equipment and supplies to offer LARCs and permanent methods (PMs). Community health workers conducted demand-promotion activities in advance while service providers at the facility booked clients. During the in-reach, the team provided LARCs and PMs while the facility staff provided short-acting methods and other routine services. Staff interested in LARC provision skills were mentored during in-reach activities.

Multiple Demand-Promotion Activities

Tupange worked with community health workers, youth groups, religious leaders, national and county administrators, and local radio stations to inform communities about family planning.

Community Health Workers

Community health workers (CHWs) are guided by the community strategy outlined in the Kenya Essential Package for Health. Each subcounty is divided into several community units. A community unit is the lowest level of service delivery and is served by 50 CHWs and 2 community health extension workers (CHEWs) linked to a specific health facility. In Nairobi's informal settlements, community units serve a population of more than 10,000 people—well above the MOH's recommendations of about 5,000 people—due to overcrowding.

CHWs are lay health workers trained to deliver an intervention at the community level; they have no formal professional or paraprofessional certificate or tertiary education degree. Tupange trained CHWs in a 5-day family planning course to prepare them to deliver community-based services: health education, community-based distribution of condoms and pills, client referral, and data collection and documentation. To update CHWs and enhance facility-community linkage, facility in-charges and CHEWs conducted monthly supervisory meetings. CHWs were supported with working tools such as a flip chart of family planning methods, a bag for carrying family planning commodities, referral tools, umbrellas, and rain boots.

Apart from individual health education by CHWs, Tupange supported community dialogue days and action days when participants

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Youth Groups

Youth groups played a key role in demand promotion for family planning in Nairobi. They used edutainment and other activities to reach fellow youth and the general population: magnate theater (a form of interactive community theater that typically takes place in outdoor, public spaces); mini caravans (small vehicles mounted with a public address system and with actors to create demand for family planning in the community); acrobatic shows; posters; letters to churches and mosques; information, education, and communication materials; Miss Tupange beauty pageants; puppeteers; and football tournaments.

Religious Leaders

Religious leaders have long been considered a barrier to family planning use. In the Tupange project, however, religious leaders were allies and promoted family planning during religious services. They offered churches and mosques as venues for service delivery during integrated family planning outreach services. Religious leaders were oriented on family planning to dispel myths and misconceptions.

County and National Administrators

Tupange oriented county and national government administrators on family planning so that they could advocate family planning. Chiefs invited service providers during their *baraza* (public meeting) to inform participants about family planning.

Local Radio Stations

Tupange partnered with local radio stations to inform listeners about family planning through an award-winning radio drama series (*Jongo Love*), radio spots, and expert interviews. The project formed community radio drama listening groups to discuss issues arising from the radio drama series. Experts provided information on the radio about family planning, including LARCs, and dispelled myths and misconceptions. The radio stations announced Tupange-supported service delivery events, which led to high turnouts.

Table 1 and Table 2 summarize the Tupange activities and numbers of participants and clients.

METHODS

Study Design and Sampling

URHI used a prospective cohort design with baseline and endline household surveys to assess changes in the CPR and other outcomes of interest resulting from the Tupange project. The Measurement, Learning & Evaluation (MLE) Project of URHI coordinated this rigorous evaluation. MLE is a partnership of the Carolina Population Center at the University of North Carolina, the African Population and Health Research Centre, and the International Center for Research on Women. In Kenya, MLE carried out the surveys through the Kenya Medical Research Institute and the Kenya National Bureau of Statistics. Institutional review boards in Kenya and the United States approved the surveys.

MLE also conducted SDP surveys at baseline and endline to present a holistic picture of the project, focusing on health facility factors. We analyzed project data collected during implementation to measure uptake of family planning services, including LARCs.

Household Surveys

MLE undertook a longitudinal survey to collect data on households and women at baseline (July 2010) and endline (December 2014) in the 5 project cities in Kenya.

At baseline, MLE used a 2-stage cluster sampling in the 5 cities. In Stage 1, MLE selected a random sample of clusters in each city. In Nairobi, 71 clusters were randomly selected and included both the formal settlements of the city and the informal settlements. The clusters were a representative sample of households identified using the 2009 Kenya population and housing census. In Stage 2, MLE selected a random sample of 30 households from each cluster.

A total of 4,260 households were selected for interviewing in Nairobi. The head of the household provided data on the household. Further, all women ages 15 to 49 years who were either residents or visitors present in the sampled household on the night before the survey were eligible for the women's interview.

From the 4,260 households, MLE interviewed 2,676 women after they provided written consent. This set of women was tracked and interviewed at endline in 2014. Of the original cohort, 56.2%, representing 1,503 women, were tracked and found within Nairobi or within one of the study cities. At endline, 25.9% could not be tracked

TABLE 1. Participants in Tupange Activities, Nairobi, Kenya, July 2011–December 2014

Type of Activity	Number
Capacity building	
Service providers completing contraceptive technology updates	188
Service providers completing family planning mentoring	103
Staff receiving family planning whole-site orientation	538
Commodity security	
MOH staff trained in commodity management	168
Service delivery	
Family planning integrated outreach activities conducted	427
Family planning in-reach activities conducted	1,770
Demand promotion	
CHWs who worked with Tupange	630
Youth groups in Nairobi that worked with Tupange	9
Youth oriented on family planning and communication skills in Nairobi prior to being engaged for community outreach	220

Abbreviations: CHW, community health worker; MOH, Ministry of Health.

TABLE 2. Clients Reached by the Tupange Project, Nairobi, Kenya, July 2011–December 2014

Type of Activity	Number
Service delivery	
Family planning clients served through integrated outreach services (mobile sites)	52,557
Clients served during in-reach activities (fixed sites)	68,293
Clients served (new and revisits) in Tupange-supported facilities: facility, in-reach, and outreach	808,553
Community outreach	
Clients reached by CHWs and youth groups during community outreach	401,309
Referrals by CHWs to health facilities	67,447

Abbreviations: CHW, community health worker.

because their location could not be determined; 11.6% had moved from Nairobi to areas outside the study cities and were not tracked; 4.9% refused to participate; and 1.5% had died. Of the 1,503 women tracked at endline, 1,334 completed an interview.

We used 2 structured questionnaires to collect data; 1 for the head of the household and 1 for women in the households. Trained research assistants administered the household questionnaire, which assessed household assets and environmental circumstances, such as housing and

Contraceptive prevalence was stratified by wealth quintile and contraceptive method, and comparisons were made between baseline and endline.

sanitation. With this information, we developed a wealth index based on a principal component analysis of household assets. We used the wealth index to rank wealth status for each woman within a household. The research assistants also administered the women's surveys, which collected information on demographic characteristics, current and past use of family planning, knowledge of family planning, and intention to use family planning.

MLE performed descriptive analyses of the women for selected independent variables including frequency distributions and percentages. The following independent variables were used within the study: age of respondent, education level, wealth index, number of live births, and marital status.

MLE stratified prevalence of contraceptive use by wealth quintile and contraceptive method, and compared the results from the baseline and endline periods. Differences in prevalence of contraceptive use at baseline and endline were measured for significance using the chi-square test of independence. Other analyzed variables included source of LARCs and specific statements on myths and misconceptions, and their prevalence compared at baseline and endline. All analysis presented are based on study weights.

Service Delivery Point Survey

MLE conducted the baseline SDP study in July 2011 using a quasi-experimental longitudinal survey design; its main objective was to collect information on delivery of family planning services in Tupange cities. In Nairobi, the survey included 112 public and private health facilities, whether or not the Tupange project had supported them. The SDP survey collected 3 types of facility data: facility audit, service provider interviews, and client exit interviews.

MLE conducted a facility audit in all 112 facilities in Nairobi. The principal sources of data were the health facility manager and service statistics. The data collected included health services offered; types of family planning methods provided; human resource capacity to provide family planning services; availability of equipment and supplies for family planning services; and integration of family planning with other services, such as HIV, child immunization and growth-monitoring clinics, outpatient services, and maternal services, among others. Additionally, 4 service providers who routinely delivered family planning services were randomly sampled

from each facility and interviewed. MLE interviewed a total of 303 service providers from the 112 facilities selected at baseline in Nairobi. The interviews collected data on providers' ability to carry out family planning services, including their pre-service and in-service qualifications, the supervision they received, and their ability to integrate family planning services in the departments to which they were mainly assigned. MLE also conducted 1,397 interviews with female clients.

The endline SDP study, carried out in December 2014, aimed to determine the changes in availability of the various services at the end of the project. Because of the longitudinal nature of the study, all facilities surveyed at baseline were also surveyed at endline. In addition, the endline SDP survey included facilities that Tupange supported at endline but not at baseline, including new public health facilities. MLE surveyed and interviewed a total of 174 Tupange- and non-Tupange supported health facilities at endline. Of these, 35 Tupange-supported facilities had baseline and endline data and therefore are included in our analysis. At endline, similar to baseline, the survey included a facility audit, service provider interviews, and client exit interviews. Selection of service providers was random, and up to 4 service providers per facility were interviewed. MLE included for analysis all 128 service provider interviews at endline from the 35 Tupange-supported facilities. MLE obtained written consent before interviewing service providers and clients.

The variables of interest in the SDP survey were health facility participation in whole-site orientation, staff mentored on LARCs and PMs, staff trained on family planning commodity management, availability of written guidelines or service protocols for family planning services, existence of outreach programs, and availability of CHWs attached to the health facility.

The survey also assessed the status of family planning commodity stocks to determine if facilities had experienced any stock-outs within 1 year before the survey. Additionally, facility staff reported if they had the capacity to provide modern contraceptive methods and if they were offering the following modern methods: female sterilization, male sterilization, implants, IUDs, injectables, pills, emergency contraceptive pills, male condoms, female condoms, and the lactational amenorrhea method/breastfeeding. MLE used descriptive statistics to determine the prevalence of the variables under investigation.

RESULTS

Overview

The evaluation between baseline and endline involved a large number of participants assessed 4 years apart. Anticipating loss to follow-up, we ensured that there were adequate sample sizes at both time points to provide reliable estimates. Table 3 compares women interviewed at endline and women who took part in the baseline survey but were not interviewed at endline. The comparison shows similar background characteristics

for the 2 groups in literacy and education. Women who were not interviewed at endline, however, were younger, and a higher percentage were never married, were Protestant, and had no children. We adjusted for these factors using study weights during subsequent analysis.

Household Surveys

Table 4 presents background characteristics of the 1,334 women interviewed at baseline during the household survey and those who were tracked and interviewed at endline. At baseline, all women

TABLE 3. Characteristics of Longitudinal Household Survey Respondents by Endline Status, Nairobi, Kenya, December 2014

	Not Interviewed at Endline (%) N=1,342	Interviewed at Endline (%) N=1,334	P Value
Age group			<.001*
15–19	12.5	7.4	
20–24	34.0	26.0	
25–29	25.6	24.4	
30–34	13.2	15.6	
35–39	8.5	13.3	
40–44	3.7	8.6	
45–49	2.4	4.7	
Education			.61
No education	2.5	2.0	
Primary incomplete	10.2	11.3	
Primary complete	26.6	27.2	
Secondary plus	60.7	59.5	
Wealth			<.001*
1 Poorest	19.4	16.3	
2 Poor	17.6	20.7	
3 Middle	20.3	18.2	
4 Rich	17.5	23.2	
5 Richest	25.2	21.7	
Religion			.02*
Protestant	67.9	68.0	
Catholic	25.1	25.6	
Muslim	5.7	3.8	
No religion	0.3	1.2	
Other	1.1	1.3	

TABLE 3 (continued).

	Not Interviewed at Endline (%) N=1,342	Interviewed at Endline (%) N=1,334	P Value
Marital status			< .001*
Never married	40.2	29.6	
Married/living together	50.2	59.0	
Divorced/separated	8.2	8.5	
Widowed	1.4	3.0	
Literacy ^a			.49
Cannot read	2.4	1.4	
Can read only parts of sentences	17.1	16.0	
Can read whole sentences	78.5	81.4	
No card with required language	1.4	.6	
Number of live births			< .001*
No children	36.60	24.60	
1 child	31.40	24.70	
2 children	16.70	22.80	
3 children	8.80	13.60	
4 children	3.80	6.90	
5 children	1.40	4.10	
6+ children	1.20	3.40	

* $P \leq .05$.^a Respondents were asked what language they were most capable of reading and given a card in that language with a sentence for them to read.

interviewed at their household were between 15 and 49 years of age. At endline, 3% of women interviewed were 50 years or older, and we did not include them in the CPR analysis.

The educational status of women interviewed changed between baseline and endline. However, for both surveys, more than half of the women had a secondary education or above. The percentage of women with a primary or secondary education decreased slightly between baseline (41.4%) and endline (36.9%), whereas the percentage of women with a higher than secondary education increased. Additionally, the percentage of women with no education declined from 2.3% to 1.9% between baseline and endline.

At baseline, 30.7% of women had not had a live birth. This declined to 14.2% at endline. The percentage of women with 1–3 births increased

by 10.0 percentage points, from 59.0% to 69.0%. Analysis by marital status showed that there was a decline in the percentage of women never married and an increase from baseline to endline among those married/living together or separated/divorced.

Contraceptive Prevalence Rate

There was a significant ($P \leq .05$) increase in use of any contraceptive method among the poorest and poor quintiles, who were the project's focus (Table 5). Among the poorest, the CPR for any method increased by 20.5 percentage points, from 41.7% to 62.2%, while among the poor it increased by 21.5 percentage points, from 47.9% to 69.4%. These increases in CPR among the poor and poorest were greater than those of the middle, rich, and richest quintiles, which recorded 5.1, 16.2, and 4.9 percentage point increases.

TABLE 4. Women's Background Characteristics at Baseline (July 2010) and Endline (December 2014), Nairobi, Kenya

	Baseline (%) N=2,676	Endline (%) N=1,334
Age group		
15–19	10.0	1.3
20–24	30.1	12.1
25–29	25.1	31.1
30–34	14.4	22.4
35–39	10.9	13.5
40–44	6.1	11.0
45–49	3.5	5.5
50–54	0.0	2.9
55–59	0.0	0.1
Education		
No education	2.3	1.9
Primary	37.6	33.6
Secondary	41.4	36.9
Higher than secondary	18.7	24.7
Nonstandard	0.0	2.6
Missing	0.0	0.3
Wealth		
Poorest	17.9	20.2
Poor	19.2	19.6
Middle	19.3	20.6
Rich	20.3	20.2
Richest	23.5	19.3
Number of live births		
No children	30.7	14.2
1 child	28.1	23.9
2 children	19.7	27.4
3 children	11.2	17.7
4 children	5.4	8.4
5 children	2.7	4.4
6+ children	2.3	4.1
Marital status		
Never married	34.9	21.3
Married/living together	54.3	60.1
Separated/divorced	8.3	14.4
Widowed	2.2	4.3

TABLE 5. CPR (%) by Type of Method and Wealth Quintile Between Baseline (July 2010) and Endline (December 2014), Nairobi, Kenya

	CPR Among All Respondents	CPR by Wealth Quintile				
		Poorest	Poor	Middle	Rich	Richest
Any method						
Baseline	47.8	41.7	47.9	57.2	47.5	44.9
Endline	61.6***	62.2***	69.4***	62.3	63.7***	49.8
Modern methods						
Baseline	43.6	37.6	44.6	53.8	42.5	40.1
Endline	54.8***	55.6***	64.0***	57.7	54.9***	40.9
Traditional methods						
Baseline	4.2	4.2	3.3	3.4	5.0	4.7
Endline	6.8**	6.6*	5.4	4.6	8.7	8.9*
No. of women						
Baseline	2,706	483	518	522	549	634
Endline	1,294	256	258	269	261	249

Abbreviation: CPR, contraceptive prevalence rate.

* $P \leq .05$; ** $P \leq .01$; *** $P \leq .001$.

There was a significant ($P \leq .05$) 6.5 percentage point increase in the uptake of implants, from 2.4% at baseline to 8.9% by endline, and a significant ($P \leq .05$) 2.1 percentage point increase in the uptake of IUDs, from 2.2% to 4.3% (Figure 2).

Analysis of the CPR for any method by status of use at baseline and endline—to determine if a woman had switched to a different method—showed that 19.4% ($n = 248$) of women using injectables and 15.7% ($n = 127$) of women using pills at baseline had switched to a LARC. In addition, 7.2% ($n = 698$) of women who were not using any family planning method at baseline took up a LARC. Altogether, 10.2% ($n = 1,329$) of women who were not using a LARC at baseline were using a LARC at endline. There was an increase in the proportion of women reporting a public facility as their source of LARCs at endline compared with baseline, although it was not statistically significant (Table 6).

Regarding myths and misconceptions, significantly fewer women agreed with any of the statements at endline than at baseline (Table 7). There was a reduction of at least 15 percentage

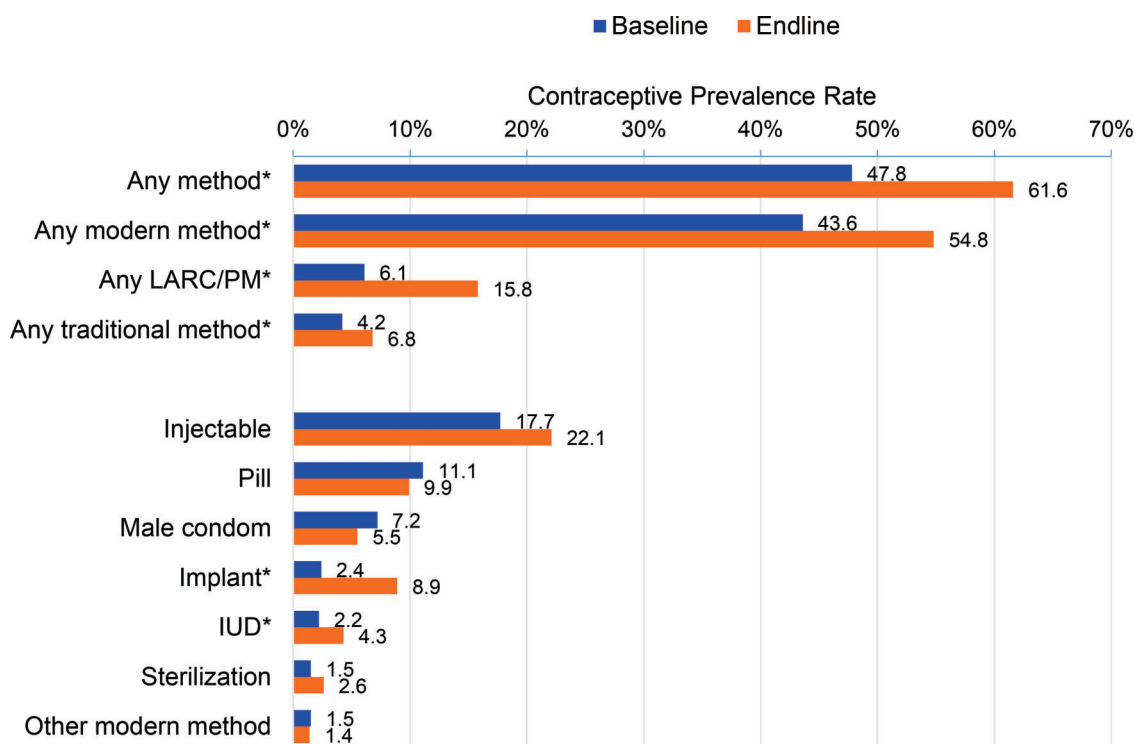
points in common myths and misconceptions between baseline and endline.

Service Delivery Point Surveys

Whole-site orientation on family planning took place in 88.6% of the selected Tupange facilities. More than half (70/128) of service providers interviewed at endline had undergone mentoring to improve their LARC and PM skills. The staff of 72.5% of supported facilities were trained on commodity management and reporting of commodity data.

At endline, about 85.7% of selected Tupange-supported facilities had outreach programs. All facilities conducting outreach activities reported discussing family planning/birth spacing and providing family planning services. Additionally, 85.7% of the selected Tupange-supported facilities reported a supportive supervision visit from Tupange teams for provision of LARCs and PMs. Nearly all (96.9%) of the selected Tupange-supported facilities had CHWs attached to them who were trained in family planning. Some of the demand-promotion strategies used by the selected

FIGURE 2. Comparison of Contraceptive Prevalence Rates at Baseline (July 2010) and Endline (December 2014), Nairboi, Kenya



Abbreviations: IUD, intrauterine device; LARC, long-acting reversible contraceptive; PM, permanent method.

* $P \leq .05$.

Tupange-supported facilities during outreach events included CHW door-to-door visits (100.0%); youth group door-to-door visits (23.3%); loud speakers, drama, and puppetry (60.0%); and fliers and posters (56.7%). All the CHWs trained in family planning referred clients to the facilities for family planning services.

At baseline, 85.7% of the selected Tupange facilities offered IUDs and 82.9% offered implants, as shown on Table 8. At endline, 100% of facilities offered IUDs and implants. This 14-percentage-point increase for IUDs and the 17-percentage-point increase for implants are both statistically significant ($P \leq .05$).

At endline, all of the selected Tupange facilities had implants in stock, and only 5.7% had a stock-out in the year preceding the SDP survey.

This is a significant change from baseline, when almost half of the selected facilities reported implant stock-outs in the year preceding the survey.

All of the selected Tupange facilities had IUDs in stock at endline, and none reported stock-outs in the past year. This was a significant ($P \leq .05$) change from baseline, when 20% of the selected Tupange facilities reported stock-outs in the preceding year.

Client satisfaction was high at both baseline and endline; 97.0% of clients reported being satisfied with the family planning service they received. Additionally, 98.8% and 96.1% of women at baseline and endline, respectively, reported that they would use the health facility in the future, and 98.0% and 96.6%, respectively, said they would recommend the same facility to family, friends, and neighbors.

TABLE 6. Source^a of Modern Contraceptive Methods Among Women Between Baseline (July 2010) and Endline (December 2014), Nairobi, Kenya

Source	Baseline	Endline
Female sterilization ^b		
Public	NA	73.5%
Private	NA	26.5%
Other	NA	0.0%
Number	36 ^c	34
Implant		
Public	48.4%	57.7%
Private	48.4%	36.9%
Other	3.1%	5.4%
Number	64	111
IUD		
Public	35.6%	45.5%
Private	64.4%	50.9%
Other	0.0%	3.6%
Number	59	55
Injectable		
Public	48.0%	38.8%*
Private	51.4%	61.2%*
Other	0.6%	0.0%
Number	477	273
Pill		
Public	29.8%	30.9%
Private	68.9%	68.3%
Other	1.3%	0.8%
Number	299	123
Male condom		
Public	10.5%	11.6%
Private	56.8%	49.3%
Other	32.6%	39.1%
Number	190	69

Abbreviations: IUD, intrauterine device; NA, not available.

^a Public facilities include government hospital, government health center, and government dispensary. Private facilities include faith-based, mission hospital/clinic; private hospital/clinic; nursing/maternity home; community health worker/traditional birth attendant; traditional healer; pharmacy; and chemist. Other includes worksite clinic, mobile clinic, youth center, vending machine/dispenser, voluntary counseling testing/comprehensive care clinic, and bar.

^b Bilateral tubal ligation.

^c The 36 women reporting sterilization at baseline had missing responses on where they were sterilized.

* $P \leq .05$.

TABLE 7. Percentage of Women Who Agreed With Statements About Family Planning Myths/Misconceptions at Baseline (July 2010) and Endline (December 2014), Nairobi, Kenya

	Baseline (%) N = 2,676	Endline (%) N = 1,334	Percentage Point Change
Can make a woman permanently infertile	53.7	27.4	26.3*
Users end up with health problems	75.4	48.4	27.0*
Can harm your womb	62.4	32.2	30.2*
Reduce woman's sexual urge	63.1	46.1	17.0*
Can cause cancer	55.6	39.0	16.6*
Can give you deformed babies	63.9	26.2	37.7*
Are dangerous to your health	72.8	43.6	29.2*
Women who use them may become promiscuous	38.1	14.4	23.7*

* $P \leq .05$.**TABLE 8.** Comparison of Selected Quality Outcomes From the SDP Survey of the Selected Tupange-Supported Health Facilities (N = 35) at Baseline (July 2010) and Endline (December 2014), Nairobi, Kenya

	Baseline (%)	Endline (%)
Facilities providing family planning services (by method)		
IUD	85.7	100.0*
Implants	82.9	100.0**
Any LARC/PM	88.6	100.0*
Facilities by number of modern methods provided		
No method	0	0
1–3 methods	0	0
4–6 methods	14.3	0
7+ methods	85.7	100.0*
Facilities with a stock-out in the last year (by method)		
IUD	20.0	0.0**
Implant	44.8	5.7***
Facilities with a stock-out in the last 30 days (by method)		
IUD	16.7	0.0*
Implant	17.2	0.0*

Abbreviations: IUD, intrauterine device; LARC, long-acting reversible contraceptive; PM, permanent method; SDP, service delivery point.

* $P \leq .05$; ** $P \leq .01$; *** $P \leq .001$.

DISCUSSION

The results support strategies at the health facility and in the community that can increase uptake of LARCs where they were previously either inaccessible or where the community had misconceptions about the methods. This multifaceted approach increased the uptake of LARCs among the urban poor, confirming previous findings from other countries.

Educating service providers and clients about the facts and benefits of LARCs and training them to offer LARCs is a key part of any strategy.^{7,8} Studies in South Africa and Zimbabwe reported that many clinicians have overly restrictive views of IUD candidates and unnecessarily limit access to the method.⁹ Inadequately trained staff is a key barrier to the provision of LARCs and other provider-dependent methods. Lack of sufficient contraceptive supplies complicates the ability of clinicians to offer LARCs,¹⁰ so Tupange educated health facility staff on commodity management. As the quality of services improved through the use of the KQMH, demand also increased as clients gained confidence in the staff.

Education is also important for prospective clients, as our study and others have shown. In Gabon, a study reported that most women in a postabortion ward had almost no knowledge of LARCs, but after counseling on LARCs and short-acting methods, nearly one-quarter left the facility with a LARC.¹¹ Our study and others also provide evidence that linking demand promotion and service delivery can increase uptake of LARCs and other family planning methods.³

The results for Nairobi from the 2014 Kenya Demographic and Health Survey are in accord with our findings. Among all women in Nairobi, uptake of implants increased from 4.5% to 12.1%, and uptake of IUDs increased from 2.2% to 4.3% between 2008–2009 and 2014.¹²

Limitations

This study had some limitations. First, the nearly 50% attrition rate over 4 years might have influenced some of the findings. However, we used appropriate weighting adjustments to take the attrition into account. Second, the reported increase in CPR between baseline and endline in all the cities cannot be directly attributed to the Tupange project alone, as other organizations and institutions also worked in Nairobi to strengthen family planning services. The study also may have been affected by recall bias.

LESSONS LEARNED

Several facets of the Tupange project made key contributions to increasing use of LARCs among the poor urban population of Nairobi:

1. Training health care providers in implant and IUD services is critical. Cost-effective training models include contraceptive technology updates, facility-based mentoring, and whole-site orientation.
2. Health care providers should be trained to discuss LARCs with all women seeking contraception, including those interested in short-acting methods such as pills and injectables.
3. Common myths and misconceptions can be addressed by CHWs, youth groups, religious leaders, local leaders, and local radio stations.
4. The availability of family planning commodities at the national level does not necessarily lead to availability at service delivery points. Attention needs to be paid to last-mile logistics in the supply chain.
5. Improving the quality of family planning services can be achieved through a uniform quality-improvement model, reliable supplies of equipment and commodities, and continuous supportive supervision visits.

We believe that elements of our successful project can be adapted and replicated in the public and private sector to produce long-lasting improvements in the uptake of LARCs across sub-Saharan Africa.

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ORIGINAL ARTICLE

Strengthening Postabortion Family Planning Services in Ethiopia: Expanding Contraceptive Choice and Improving Access to Long-Acting Reversible Contraception

Melaku Samuel,^a Tamara Feters,^b Demeke Desta^a

In Ethiopia, a comprehensive strategy to improve postabortion family planning services has produced overall improvement in the uptake of postabortion family planning and a rise in the choice of more effective long-acting reversible contraceptives to produce a more balanced method mix.

ABSTRACT

Where unmet need for the safest, most effective, and long-acting reversible contraceptives (LARCs) is very high, the health system and partners need to implement problem-solving, locally feasible, and comprehensive family planning delivery strategies. Because young and unmarried women are most at risk for unintended pregnancy and repeat abortion due to poor access to contraceptive services, postabortion family planning (PAFP) is a key component in such strategies. In Southern Nations, Nationalities, and People's Region, Ethiopia, Ipas implemented health system strengthening efforts from fiscal year (FY) 2010 (July 2009 to June 2010) to FY 2014 (July 2013 to June 2014) to improve the quality of PAFP services and expand method choice in 101 public facilities. The intervention significantly improved PAFP uptake at the project sites. Specifically, the proportion of abortion clients receiving LARCs progressively improved during the intervention period. The proportion of abortion clients who left the facilities with a contraceptive method increased from 58% in FY 2010 to 83% in FY 2014. The share of method mix for LARCs rose from 2% in FY 2010 to 55% in FY 2014, while the share for condoms, injectables, and oral contraceptives declined from 98% to 45%. Implant use rose from 2% in FY 2010 to 43% in FY 2014, while the use of intrauterine devices increased from 0.1% in FY 2010 to 12% in FY 2014. A larger proportion of PAFP users received LARCs at health centers, where midwives and nurses are the primary providers, than at hospitals (59% versus 37%, respectively). A broader method mix can satisfy clients with a variety of needs, a key factor for higher uptake of more effective methods and program success. Further evidence-based interventions need to be implemented to improve the quality of PAFP in a feasible and replicable strategy that addresses unmet need for modern contraceptive methods.

INTRODUCTION

In Ethiopia, as throughout the world, low levels of contraceptive use lead to high levels of unintended pregnancy, the root cause of induced abortion. The first nationally representative study in Ethiopia, conducted in 2008, revealed that 42% of all pregnancies were unintended, and an estimated 382,500 induced abortions were performed over a 1-year period, for an annual rate of 23 abortions per 1,000 women of reproductive age.¹ Many of these abortions were still performed with questionable levels of safety and efficacy outside of health facilities. Women seeking induced abortion had a mean age of 23,

and the majority (57%) were single. Among women seeking induced abortion, only 24% reported contraceptive use prior to the current pregnancy. The same study also found that 1 of every 4 facilities in the country did not have designated postabortion contraceptive services for women who had received abortion care.¹

It is estimated that as many as 95% of unintended pregnancies in Ethiopia occur among women who do not practice contraception at all.² The national Demographic and Health Survey in 2011 found that 1 of every 4 married women had an unmet need for family planning, and nearly 29% of most recent births and current pregnancies were reported as either mistimed or unwanted.³

The high unmet need for contraception coupled with high numbers of safe and unsafe abortions testifies to

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the need for stronger routine contraceptive services and highlights the potential benefits of strengthening postabortion contraceptive services. Postabortion family planning (PAFP) involves provision of voluntary contraceptive counseling and methods to women after abortion care, whether for induced abortion or the treatment of complications from an unsafe abortion, to reduce unintended pregnancies and repeat abortions. International organizations in the field of reproductive health and health researchers have posited that PAFP services that respect women's sexual and reproductive rights are an ideal way to reach sexually active women with unplanned pregnancies, including young women who may have had limited exposure to modern contraception.⁴⁻⁹ Studies and interventions conducted in different parts of the world have shown that PAFP improves women's knowledge of the benefits of contraception and increases uptake of contraceptive methods immediately after abortion, when return to fertility is almost immediate. Women's motivation to continue using a method is also likely to increase after leaving the facility.¹⁰⁻¹⁴

Although many factors may constrain family planning programs, a limited method mix has been shown to adversely affect both contraceptive acceptance and continuation postabortion as well as the overall achievement of a national family planning program.^{15,16} Family planning programs, especially those for PAFP, should offer a range of methods in order to meet the various needs of their clients.^{4,7,8} Evidence has shown that introducing a wider range of contraceptive methods in PAFP significantly increases the proportion of clients leaving the facility with a method.^{12,17} The benefits of contraception can be particularly important for postabortion contraceptive acceptors: Many postabortion clients face high risk of maternal mortality due to high parity or the likelihood that their pregnancies could end in unsafe abortion.¹⁸ Moreover, comprehensive PAFP counseling is likely to promote the choice of more effective methods as women learn more about less common contraceptive options.¹⁹⁻²¹ Including more effective methods in the method mix can enhance program impact; use of long-term, highly effective methods such as intrauterine devices (IUDs) and contraceptive implants is likely to prevent more unplanned pregnancies and decrease demand for abortion.^{20,22}

Cognizant of the broader benefits of PAFP services to the reproductive health of women and the Ethiopian National Family Planning Program,

the international NGO Ipas has implemented an evidence-based health systems strengthening intervention to improve PAFP uptake. The intervention has focused on achieving a more balanced contraceptive method mix by increasing use of long-acting reversible contraceptives (LARCs). Although the intervention took place in 4 major regions of the country, this article presents only the approaches, achievements, and lessons learned from 101 public health facilities in the Southern Nations, Nationalities, and People's Region (SNNPR) of Ethiopia between fiscal year (FY) 2010 (July 2009 to June 2010) and FY 2014 (July 2013 to June 2014).

MOVING FROM POSTABORTION CARE TO COMPREHENSIVE ABORTION CARE

Since 2002 Ipas Ethiopia, as one of the major partners of the Ethiopian health sector, has been supporting the Ministry of Health (MOH) to improve the delivery and quality of abortion care and PAFP services. Before revision of law in 2005, all facilities were expected to provide only post-abortion care (PAC), including postabortion contraception, for the management of incomplete abortion and complications resulting from induced or spontaneous abortion. Following legal reform that expanded the indications for safe abortion services,²³ the MOH and its technical partners worked extensively to introduce a comprehensive abortion care (CAC) model. The model is an integrated set of sexual and reproductive health services that include safe induced abortion for all legal indications, treatment of incomplete and unsafe abortion, counseling, and provision of contraception and other reproductive health services as needed. Despite these efforts, however, service data revealed a low rate of uptake of contraception after abortion care and a highly skewed method mix in most facilities.

A baseline facility assessment in 2008 identified a number of gaps and barriers. Only 47% of health centers in SNNPR provided postabortion contraception—most often because they provided no abortion care at all.²⁴ Only 8% of all facilities offered IUDs, and only 28% offered implants. Factors identified as limiting the availability or quality of PAFP services included:

- **Gaps in service providers' knowledge:** Although PAC services were widespread in the country at the time, an assessment of these services conducted in 2000 found that more

In 2008, among women seeking induced abortion, only 24% reported contraceptive use prior to the current pregnancy.

than three-quarters of PAC providers had never received any special training in family planning counseling or service delivery.²⁵ A later assessment of facilities in SNNPR, conducted in 2008, reported that only half of health facilities had providers capable of providing LARCs or permanent methods.²⁴

- **Shortages of contraceptive commodities, equipment, and supplies:** Keeping a wide range of contraceptive methods in stock in facilities and in the abortion services areas was another weakness in PAFP service. At the time of the baseline assessment, less than one-quarter of facilities had implant insertion and removal kits, and only 5% had insertion and removal kits for IUDs.²⁴ Oral contraceptives were universally available, however, and injectable contraceptives were available in 97% of facilities.²⁵
- **Lack of designated service delivery space for PAFP:** Most facilities (88%) provided PAFP services in the maternal and child health or family planning units, separate from the locations of PAC services.²⁵ Most clients were asked to go elsewhere in the facility to receive contraception, were given a referral, or were asked to return at another time. Many health centers (and some hospitals) provided abortion care and PAFP services in delivery rooms, often with a limited mix of contraceptive methods, if they were available at all.
- **No special focus for young women and adolescents:** World Health Organization (WHO) guidance recommends that all reproductive health programs and services address the special needs of adolescents and young women.⁴ Young and adolescent women are more vulnerable to unwanted pregnancy and unsafe abortion because they are less likely to have initiated contraception. Therefore, services for these women need to be both more comprehensive and focused on their needs. However, site observations in the project area indicated that most facilities were unable to provide effective and accessible services to young clients that took into account their special needs, such as privacy and confidentiality throughout the continuum of their care. One major problem was a lack of training and continuing support to health care providers to improve their knowledge and skills on the package of interventions and service delivery approaches for young and adolescent women.

Increasing uptake of postabortion contraception and improving the method mix, with special attention to LARCs, was a major focus of the intervention.

- **Poor referral linkages between facilities and community-based programs:** Well-established referral linkages and technical assistance agreements between abortion-providing facilities and community partners that provide contraceptive services and information were often lacking, contributing significantly to underutilization of services.²⁴

KEY COMPONENTS OF THE INTERVENTION

After identification of these major service delivery gaps, Ipas staff and MOH partners designed and implemented problem-focused interventions to improve service delivery standards and provide accessible, high-quality PAFP services acceptable to all clients. The ultimate goal of the intervention was to improve all components of comprehensive abortion care. However, increasing the uptake of postabortion contraception and improving the contraceptive method mix, with special attention to LARC methods, was a major focus.

The effort to increase uptake of PAFP and of LARC methods especially included 8 key elements:

- Integration of CAC and comprehensive contraceptive trainings
- Improving the availability of contraceptive commodities and related equipment
- Renovation, refurbishment, and reorganization of CAC and PAFP service delivery sites
- A quality improvement initiative
- Promotion of youth-friendly services
- Clinical mentoring and programmatic supports to providers
- Strengthening community-facility linkage through involvement of health extension workers
- Integrating reproductive autonomy into contraceptive method selection

Integration of Comprehensive Abortion Care and Comprehensive Contraceptive Trainings

Although many abortion care providers had received some exposure to postabortion contraceptive provision, the project made a renewed effort to improve their skills. All CAC providers participated in an updated training on comprehensive contraception. The new curriculum emphasized scientific and technical updates concerning

LARC methods, as this had been identified as a particular weakness. Contraceptive trainings employed both didactic and practical training to improve the clinical skills necessary to provide IUDs and implants. The curriculum stressed the elements of high-quality family planning counseling services as recommended by WHO.¹⁵ These include a renewed emphasis on free and voluntary choice of a method. The contraceptive/LARC training was primarily designed for mid-level providers—midwives, nurses, and health officers—the cadres largely responsible for providing reproductive health services, including abortion care, at the primary health care level.

Between July 2009 and June 2014, 545 mid-level providers from 101 facilities received training in comprehensive contraception.²⁶ Almost all of these providers were also trained to provide comprehensive abortion care. A pilot initiative designed to expand integrated PAC services at the primary care level through support to midwives (such as in-service training and supervisory and logistics support) led to improved access to PAFP services—70% of PAC clients received PAFP services.²⁷ By comparison, before the initiative there was no routine system of postabortion counseling in the region and only minimal efforts to break the cycle of unintended pregnancy and unsafe abortion.

Improving the Availability of Contraceptive Commodities and Related Medical Equipment

Oral contraceptives, injectable contraceptives, IUDs, contraceptive implants, and condoms should be available at all facilities; permanent methods performed surgically—tubal ligation and vasectomy—are available only at hospitals. Based on gaps identified in the intervention facilities, facilities began to regularly receive supplies of IUDs, implants, and essential family planning kits (such as medical equipment and supplies required for insertion and removal of IUDs and implants). In addition, hospitals received mini-laparotomy and no-scalpel vasectomy kits. From 2008 through 2012, a total of 92 IUD insertion and removal kits and 12 voluntary surgical contraceptive kits (mini-laparotomy and no-scalpel vasectomy kits) were distributed to the facilities in SNNPR.²⁶ Ipas also provided the MOH regional health system with technical assistance to establish a sustainable supply of commodities and equipment for comprehensive abortion and contraceptive provision. Pharmacy personnel in health facilities received orientation to

the products and to forecasting and procurement through the government supply system.

Renovation, Refurbishment, and Reorganization of Service Delivery Sites

Service delivery experiences in various countries have shown that providing counseling and post-abortion contraception at the same time and location where abortion services are provided can reduce missed opportunities and enhance acceptance of PAFP.^{14,20} With these benefits in mind, Ipas provided financial, material, and technical support to 53 facilities to renovate, refurbish, and reorganize service sites based on the identified needs in each facility. The work significantly improved privacy, confidentiality, infection prevention practices, and the organization of services to provide abortion and PAFP services. The upgraded service delivery areas also improved providers' motivation and commitment to provide high-quality, integrated care.

The Quality Improvement Initiative

This initiative was pilot-tested in 12 facilities (9 health centers and 3 hospitals) randomly selected from among Ipas-supported sites in SNNPR. During the pilot-test period, all progress and changes in the quality of abortion care indicators were monitored and documented at regular intervals. At the conclusion of the pilot program, significant improvement had been achieved in most of the key quality indicators for CAC services, including PAFP.²⁸ One objective of the pilot-test was to produce recommendations for scaling up simple, practical quality improvement tools that can be integrated into the existing program monitoring system. Based on lessons learned from the pilot exercise, such practical monitoring tools as simple site-level indicators and on-site exercises for service improvement were integrated into the routine supervisory processes and replicated in the other sites in the region. Reminders were posted in CAC service areas on such quality-of-care points as abortion procedure protocol and clients' rights to informed choice, privacy, and confidentiality during service delivery.

Promotion of Youth-Friendly Services

Almost 60% of women receiving abortion care at Ipas-supported sites are under age 25. Thus, it was imperative to raise the awareness of service providers about the needs and circumstances of

young women. To improve access to comprehensive abortion care for young women, a pilot project was initiated in 12 of the SNNPR project facilities. This initiative focused on:

1. Training providers in accord with national standards and guidelines
2. A minimum service delivery package of youth-friendly services
3. Support for reorganization of services for potential youth beneficiaries²⁹

The facilities received technical and financial support to make the service delivery setup more convenient for young clients and to provide contraceptives in the abortion procedure rooms, which helps to ensure privacy and confidentiality during service delivery. Also, facilities were equipped with information materials, furniture, and audiovisual aids to attract and serve young people.

Facilities were encouraged to integrate comprehensive abortion care with all other reproductive health services, such as care for sexually transmitted infections, including HIV. Efforts were also made to establish and improve the referral networks between other facilities, community-level health services, and youth-focused organizations. After reviewing the lessons and challenges learned from the pilot initiative, all other facilities in the project sites integrated the service approach into their CAC services.

Clinical Mentoring and Programmatic Supports to Providers

Training alone does not always ensure that providers are competent and confident and able to put all their skills into practice. In this intervention newly trained providers received needs-based on-site clinical mentoring by senior and seasoned providers from the same facility. The providers requiring clinical support were identified at the end of the training or while providing services and linked with on-site mentors. The mentors provided more intensive clinical support, as frequently as necessary. In addition, all newly trained providers were contacted within 3 to 4 weeks after training to ascertain whether they had begun offering services and to provide clinical and programmatic support. To promote sustainability, all programmatic support was coordinated with MOH regional staff and facility management.

Strengthening Community–Facility Linkage Through Involvement of Health Extension Workers

In Ethiopia health extension workers (HEWs) have responsibility for community-level reproductive health services, including counseling and provision of some contraceptive methods and referrals for others. A study on utilization of PAC services found that community providers can play an important role in improving community awareness of abortion-related issues, overcoming stigma, and disseminating information on the availability of services.³⁰ Ipas conducted orientation workshops for 368 HEWs on long-acting contraception, myths and misconceptions about IUDs, unwanted pregnancy, and comprehensive abortion care. The trainings focused not only on skill building but also on creating a strong referral linkage between health facilities for abortion care and community health programs for contraceptive services, particularly for clients seeking long-acting or permanent methods. To improve HEWs' counseling skills, the WHO decision-making tool was distributed to all HEWs in the intervention areas. In addition, abortion care providers and reproductive health coordinators from the MOH participated in orientation workshops to develop formal agreements for providing mentoring for HEWs and establishing more effective referral linkages between facilities and community health services.

Integrating Reproductive Autonomy into Contraceptive Method Selection

While this intervention focused on eliminating barriers that impede postabortion contraceptive acceptance and contribute to a skewed method mix, it was important to do so while respecting and emphasizing women's reproductive autonomy. All training packages include sessions on reproductive rights and effective counseling steps, emphasizing the responsibility of service providers to assure that clients can make informed, voluntary choices concerning their abortion procedures and contraception. Training for reproductive health officers and on-site exercises, adapted from the *COPE for Comprehensive Abortion Care* manual, provided information and practice for providers about clients' rights to information, choice, and safe services.²⁸

METHODS

Data Collection Methods and Tools

Through routine monitoring, project staff regularly collected and reviewed service data from all

Trainings for HEWs focused not only on skill building but also on creating a strong referral linkage, particularly for clients seeking long-acting or permanent methods.

intervention facilities (78 facilities in FY 2010 and FY 2011, 95 in FY 2012 and FY 2013, and 101 in FY 2014). From FY 2010 to FY 2012, data were collected quarterly; in subsequent years, semi-annually. Zonal health department staff members, along with Ipas program coordinators, were responsible for data collection, extracting information from the abortion services logbook using a data collection form developed for this purpose. Data collected include information on the type of abortion care, abortion technology, age category, gestational age of the pregnancy, and postabortion contraceptive method chosen by each woman.

Data Management, Analysis, and Use

Data were entered into a Microsoft Excel database and a national online database to conduct descriptive analysis, review trends, and monitor progress. Service data were analyzed and used at facility, district, zonal, and regional levels to review achievements and identify challenges requiring action. Wall charts were developed and displayed at the facilities to track service utilization and postabortion contraceptive methods chosen using data in the aggregate. Regional program review meetings for CAC/PAFP providers and zonal and district program staff took place semiannually.

PAFP uptake and indicators of the pattern of method use presented in this article are based on descriptive analysis of these service data. The study team focused on changes in the distribution of method use in the health centers compared with the hospitals, as well as PAFP uptake compared with results of the stand-alone family planning program in the same facilities. Bivariate analysis used chi-square tests to examine the differences in method use patterns between different categories. Statistical significance was established at $P < .05$.

Data were collected by the program for the purpose of continuous quality improvement, not for the purpose of conducting systematic research in a strictly defined model. All data analysis was conducted according to international principles of maintaining privacy and confidentiality of personal information.

RESULTS

Between July 2009 and June 2014, a total of 44,682 women sought abortion care in 101 public health facilities in the region. Among all women who sought care, 34,212 (77%) received safe and legal induced abortions; the remaining 10,470 women (23%) received postabortion care for complications of unsafe abortions or complicated miscarriages.

Most women, 60%, were young; only 40% of women who sought abortion care during this period were older than 24.

Uptake Increased and Method Mix Improved

Service delivery data showed progressive improvement in the uptake of postabortion contraception in intervention facilities. The proportion of abortion clients who left the intervention facilities with some form of contraception increased from 58% in FY 2010 to 83% in FY 2014 (Figure 1).

The package of interventions also progressively changed the contraceptive method mix, particularly the proportion of women accepting LARC methods. Figure 2 shows that the proportion of CAC clients who accepted a method and chose short-acting hormonal methods, mainly injectable and oral contraceptives, declined from 98% in FY 2010 to 45% in FY 2014. The proportion of all CAC contraceptive acceptors who chose a long-acting method rose from 2% in FY 2010 to 55% in FY 2014 ($P < .001$). The average annual rate of increase in LARC method acceptance was 13.3%; the highest increment, of 21%, occurred between FY 2010 and FY 2011. In addition, among all CAC clients, in FY 2010 about 57% chose short-acting methods, while only 1% chose LARCs. After 5 years of the intervention, the proportion choosing short-acting methods decreased to 37%, whereas the percentage choosing LARCs climbed to 46%.

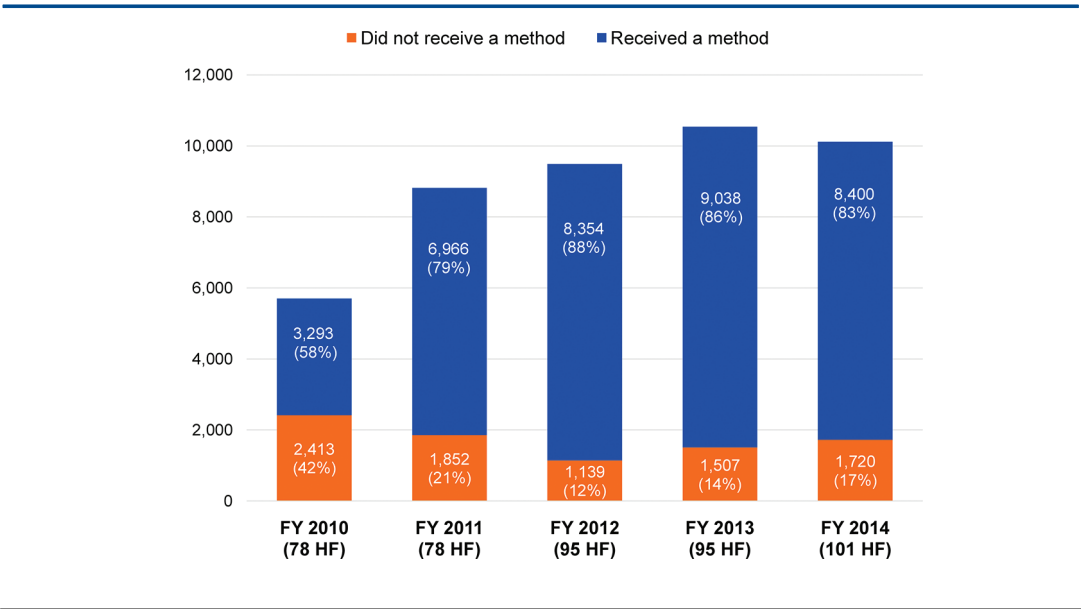
Figure 3 illustrates the changes in the method mix specifically for long-acting and permanent methods during the intervention period. The share of implants as a percentage of all method use rose quickly, from 2% in FY 2010 to 43% in FY 2014, while IUD acceptance increased from only 0.1% in FY 2010 to 12% in FY 2014. Female sterilization (tubal ligation) remained the least chosen method, with very few CAC clients (3 in FY 2013 and 17 in FY 2014) choosing voluntary surgical contraception to limit childbearing.

Contraceptive Acceptance Higher in Health Centers Than in Hospitals

Disaggregating postabortion contraceptive service data by facility type revealed higher contraceptive acceptance in health centers (86% of all women left with a method) than in hospitals, where 71% of abortion clients left with contraception. Figure 4 shows that the method mix was more balanced in health centers than in hospitals. For example, in FY 2014 the proportion in hospitals choosing

The proportion of clients who left with contraception increased, and the method mix improved.

FIGURE 1. Proportion of Comprehensive Abortion Care Clients Who Left the Facility With a Contraceptive Method by Year, SNNPR, Ethiopia, FY 2010–14 (N=44,682)



Abbreviations: FY, fiscal year; HF, health facilities; SNNPR, Southern Nations, Nationalities, and People’s Region.

long-acting methods was only 37%, while 59% of women cared for in health centers chose a LARC method after their abortion care ($P<.01$).

Choice of LARC Methods Higher in Comprehensive Abortion Care Areas Than in Routine Services

As Figure 5 shows, comparing LARC acceptance in the comprehensive abortion care areas with the routine family planning services in the same sites indicates that the rate of LARC acceptance among postabortion clients, averaging 55%, was much higher than in the same facilities’ routine family planning programs, where on average only 23% chose LARC methods ($P<.001$). Among those choosing long-acting methods, the proportion choosing IUDs (21%) was also higher among postabortion clients than in routine family planning services, where only 15% of such clients chose IUDs. Trend analyses of LARC uptake in the routine programs showed that the proportion of implant acceptors increased from 3% in FY 2010 to 19% in FY 2014, while IUD acceptance increased far more slowly, from only 0.1% to 4% of all methods over the same time period.

DISCUSSION

The package of interventions introduced in service expansion in SNNPR during the past half-decade tested the impact of focused attention to postabortion service quality on the uptake of contraceptive methods, particularly on the choice of long-acting methods. In addition to increased attention to postabortion contraception, the rights-based approach to informed consent and decision making emphasized the importance of contraceptive choice and ensured providers’ commitment to the sexual and reproductive rights of women. While the purpose of the project was to improve postabortion service quality overall, benefits included an increase in postabortion choice of a contraceptive method and a greater proportion choosing the more effective, long-acting methods. As the result of this intervention, the proportion of abortion clients who received contraception increased from 58% to 83%, a rate in line with other countries’ achievements implementing similarly intensive strategies to improve services.^{11,12,14,16} For instance, in a similar pilot initiative in Turkey to integrate family planning with abortion services, the proportion of abortion clients who accepted

contraceptive methods rose from 65% in 1991 to 98% in 1992.¹¹ Findings from around the world show that provision of family planning counseling and services immediately after all types of abortion care can increase the postabortion contraceptive acceptance rate from 0%–10% pre-intervention to 50%–80% within 1 to 2 years after the intervention.^{7,10}

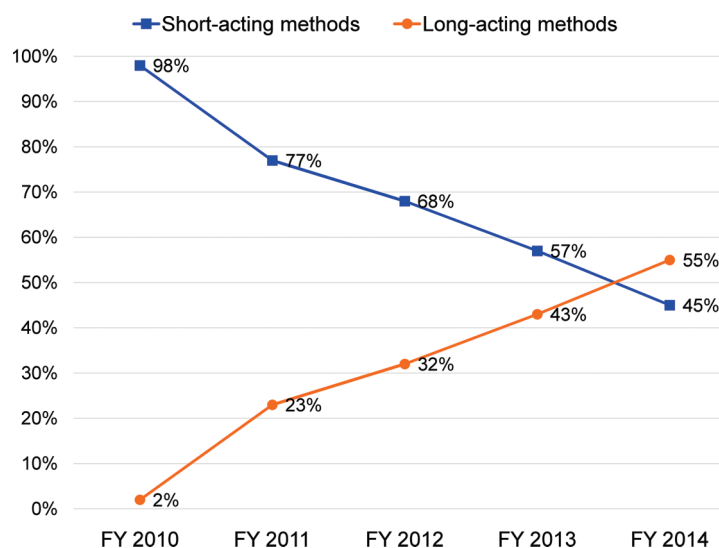
Increased Choice of Long-Acting Methods

One notable achievement of this particular program intervention was the significant uptake of long-acting methods, which were greatly underutilized before the intervention. Over the intervention period, some CAC clients who would have chosen short-acting methods now chose LARCs instead. As the overall proportion of PAFP acceptors increased, some new CAC clients who would not have taken any method now also chose LARCs. Key strategies to this end were improving the availability of long-acting methods and related equipment, providing clinical and contraceptive training for mid-level providers, and encouraging and facilitating provision of all contraceptive methods in the same location where abortion services are provided. Similar components of the intervention in Turkey significantly improved the acceptance of LARC methods.¹¹ Furthermore, a randomized trial in China found that a comprehensive postabortion care package increased the use of more effective contraception, such as IUDs and implants, when compared with a minimum package of services.¹⁹

LARC methods should be an integral part of a comprehensive method mix since they are more effective than short-acting methods and so better prevent repeat abortions. A study in the clinics of Planned Parenthood Northern California found that immediate insertion of IUDs postabortion significantly reduced unwanted pregnancy compared with other contraceptive methods or delayed IUD insertion; women who received an IUD immediately postabortion had only 35 abortions per 1,000 woman-years of follow-up compared with 91 for the comparison group.²²

Women who sought postabortion care at health centers in SNNPR were more likely to accept postabortion contraception and to choose a long-acting method than women who sought postabortion care in hospitals. While this finding needs further investigation, there is evidence in other parts of Africa as well that decentralization of services from hospitals to lower-level facilities has

FIGURE 2. Trends in Use of Short-Acting and Long-Acting Methods Among Postabortion Contraceptive Acceptors by Year, SNNPR, Ethiopia, FY 2010–14 (N=36,051)



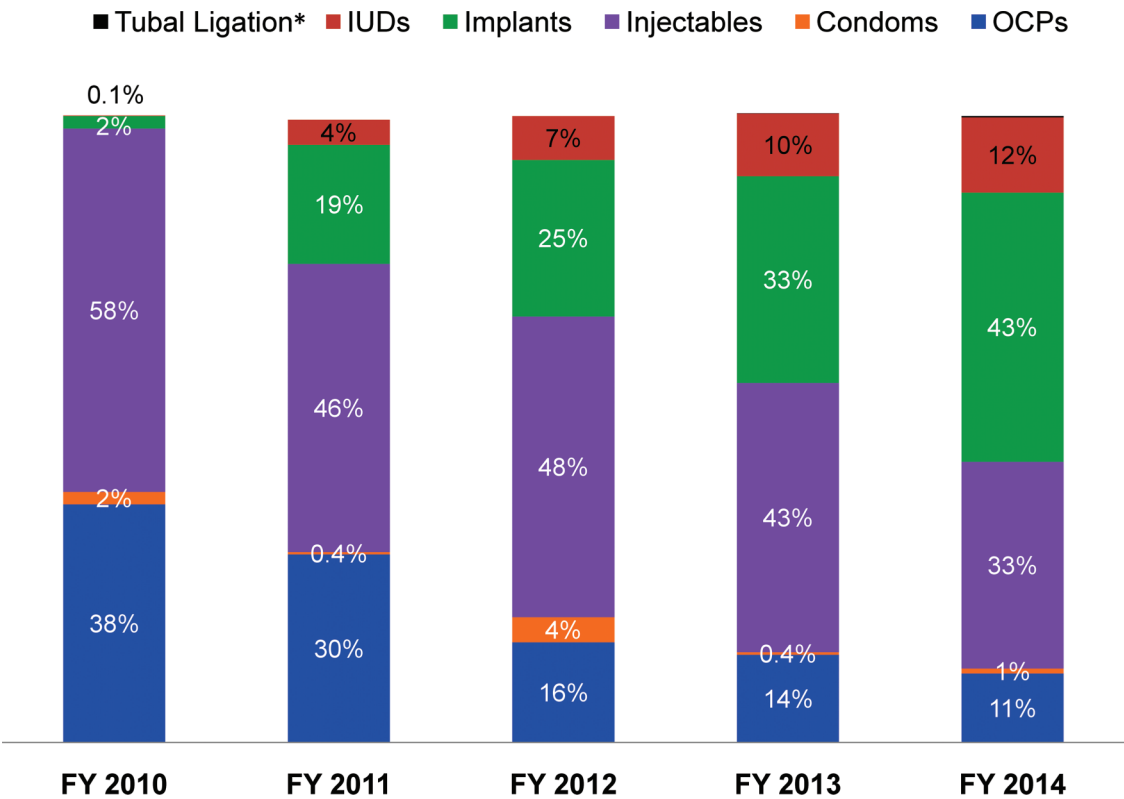
Abbreviations: FY, fiscal year; SNNPR, Southern Nations, Nationalities, and People's Region.

increased the uptake of postabortion contraception. For example, a pilot project in Tanzania to assess the feasibility of expanding PAC services to health centers and dispensaries reported that 91% to 100% of clients received postabortion counseling, and 97% to 100% of those clients left the locations with a method, except in the few facilities that did not adhere to the intervention.³¹ Moreover, public health experts agree that abortion care and contraceptive services need to be decentralized to improve availability and quality by making services more accessible to women in rural areas and to reduce overcrowding in tertiary hospitals.⁶

Most women who chose a long-acting method chose an implant (79% of all LARC acceptors). Women's method preferences were likely to be affected not only by the counseling they received but also by educational information campaigns in the region.¹⁵ During the study period, the federal and regional governments conducted extensive educational campaigns on contraceptive implants to promote use of this method. In fact, a recent study exploring knowledge and acceptance of long-acting and permanent methods in southeastern Ethiopia found that reproductive-age women were

Providing family planning counseling and services immediately after abortion care can increase the postabortion contraceptive acceptance rate from 0%–10% pre-intervention to 50%–80% within 1–2 years.

FIGURE 3. Trends in the Method Mix Among Postabortion Contraceptive Acceptors by Year, SNNPR, Ethiopia, FY 2010–14 (N=36,051)



Abbreviations: FY, fiscal year; IUDs, intrauterine devices; OCPs, oral contraceptive pills; SNNPR, Southern Nations, Nationalities, and People’s Region.
* Values for tubal ligation were 0% in 2010, 2011, and 2012; 0.03% in 2013; and 0.2% in 2014.

most knowledgeable about contraceptive implants. Some 87% of married women reported that they had heard of Norplant contraceptive implants.³²

In the project sites, IUDs have become a more common selection and are now the choice of 21% of all LARC method acceptors in the abortion care areas of these facilities. However, lack of awareness and local misconceptions about the IUD, such as fear of infertility and infection, still persist across Ethiopia.³²

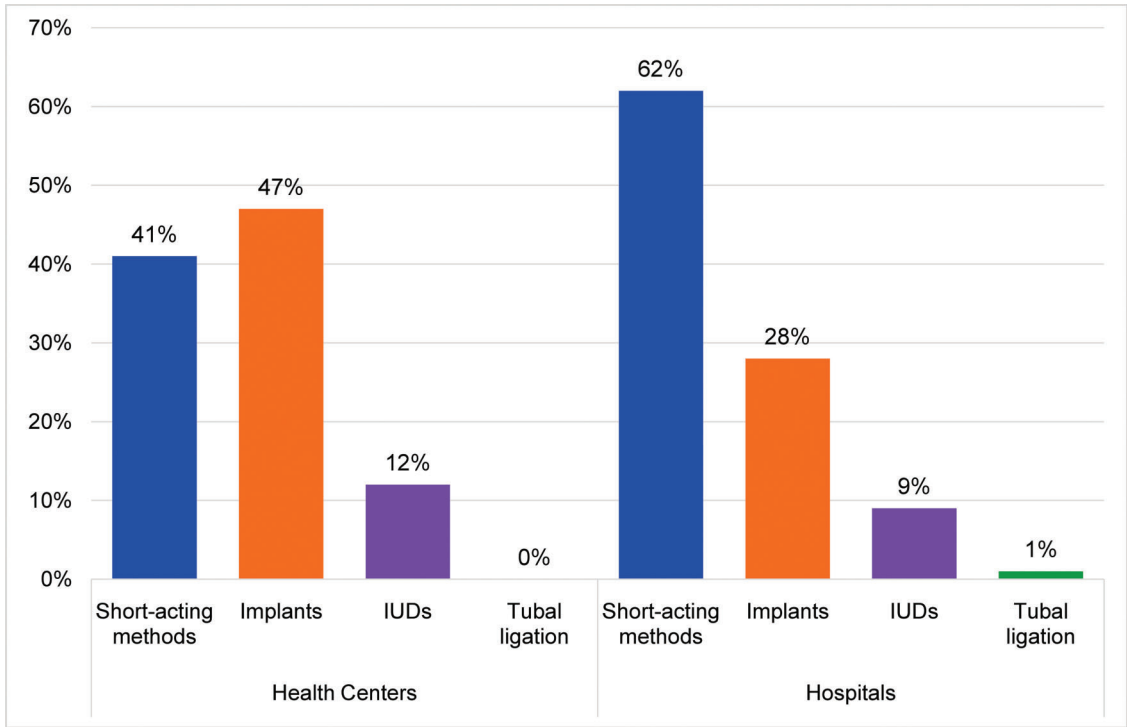
Similar service improvement strategies have been employed to shift the method mix and increase use of long-acting methods in routine family planning programs in the region. The achievement has not been as satisfactory as in abortion care areas, however. It seems likely that the longer interactions between providers and

abortion clients in the abortion care settings results in more thorough counseling; clients are counseled during the pre-, intra- and post-procedure times. This finding is in line with those of a study in southeastern Ethiopia that selection of long-acting and permanent methods was significantly associated with the number of times that clients and providers discussed these methods.³² Also, abortion clients may have a higher unmet need for long-acting methods because of their youth; a large proportion are unmarried but sexually active, wanting to delay marriage and childbearing.

Limitations of the Study

The findings presented here provide results from a large intervention for women who sought either

FIGURE 4. Contraceptive Method Use Patterns Among Postabortion Contraceptive Acceptors by Type of Facility, SNNPR, Ethiopia, FY 2014



Abbreviations: IUDs, intrauterine devices; SNNPR, Southern Nations, Nationalities, and People’s Region.

induced abortion or postabortion care in more than 100 public health facilities. These findings are based on service data from intervention sites; they may not be generalizable to all facilities in the region, the country, or the private sector. However, this research was conducted in partnership with the Ethiopian MOH at all levels, and, as such, it should be seen as describing a replicable, low-cost model for scaling up services in Ethiopia and elsewhere. No efforts were made to control for community or national efforts to increase family planning acceptance in the general population, and so it is not possible to attribute all of the gains made in this study period to the package of service delivery interventions. Findings are meant to describe and provide a platform for comparison and lessons learned. The large size of the program and the scope of data collection make possible further research to explore the association of

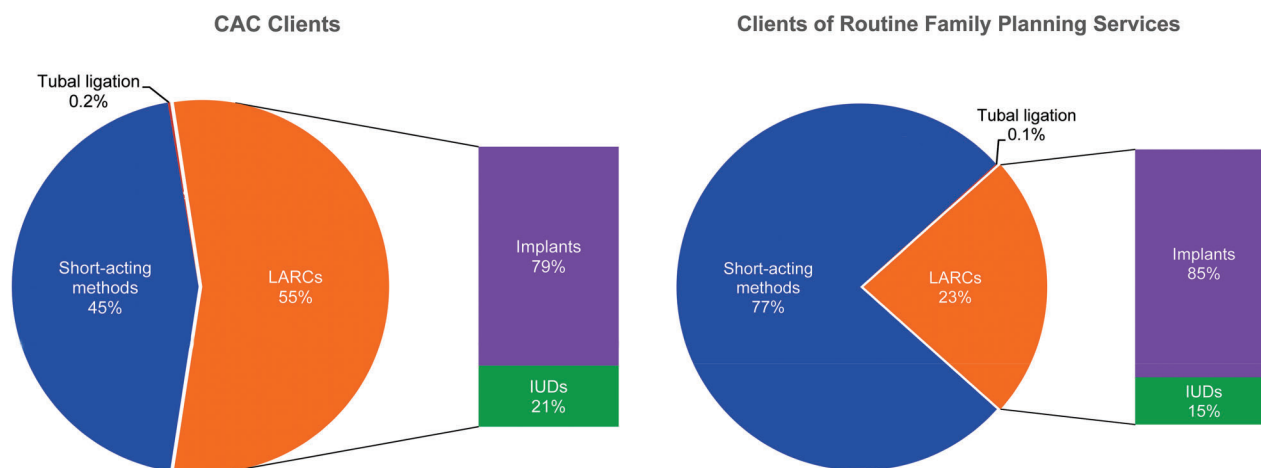
sociodemographic factors (such as marital status, parity, education, occupation, previous use of contraception, and abortion history) with the type of abortion care, procedure, and contraceptive method acceptance. This program has recently begun a phase-out strategy aimed at ensuring self-reliance among high-performing facilities to sustain delivery of comprehensive abortion care without routine NGO support.

RECOMMENDATIONS AND CONCLUSIONS
Family Planning Programs Can Fail in 3 Ways

Reproductive health organizations and experts have emphasized 2 potential failures in any family planning program that allow the vicious cycle of unintended pregnancy and abortion to persist. The first failure would be the **inability of**

This research was conducted in partnership with the Ethiopian MOH at all levels and, as such, should be seen as describing a replicable, low-cost model for scaling up services in Ethiopia and elsewhere.

FIGURE 5. Contraceptive Method Use Patterns Among Comprehensive Abortion Care Clients Versus Clients of Routine Family Planning Services, SNNPR, Ethiopia, FY 2014



Abbreviations: IUDs, intrauterine devices; LARCs, long-acting reversible contraceptives; SNNPR, Southern Nations, Nationalities, and People's Region.

Comprehensive abortion care requires a wide range of contraceptive methods, adequate infrastructure, and well-trained providers, among other factors.

Young and single women need long-term and reliable protection for their long reproductive lives ahead.

the program to prevent unwanted or mistimed pregnancy. The second potential failure would be **when a woman who received abortion services leaves without the means to prevent another pregnancy** in the future.³³ However, there is also a third potential failure, which may result in lower levels of satisfaction and acceptance and, thus, in further unwanted pregnancies: **when a program cannot provide a wide range of contraceptive methods for postabortion clients.**

Operations research conducted in postabortion settings has shown that offering a wide range of methods coupled with effective counseling increases contraceptive uptake.^{12,16} A limited choice of methods can lead to a woman selecting a method that she may be more likely to discontinue because it is ultimately less acceptable to her or her partner. Additionally, offering only short-acting methods to women who need and are eligible for long-term protection may result in unwanted pregnancy because the return to fertility after abortion is immediate and the chance of method failure is high with short-acting methods. To avoid this pitfall, it is vital to establish effective programs that offer a wide range of methods.

The quality of comprehensive abortion care may be limited by infrastructure that is often outdated and inappropriate for services that have moved from labor and delivery or surgical areas to

stand-alone, predominately outpatient service areas. Comprehensive and acceptable abortion care requires that adequate infrastructure, a wide range of contraceptive methods in the procedure area, and all necessary equipment be available consistently. Providers well trained in both abortion and contraceptive services and who are motivated and supported to provide services are also key to success.

Research Needed on Postabortion Method Mix

To achieve positive results, postabortion services need to promote a contraceptive method mix acceptable and effective for young and single women who need long-term and reliable protection for their long reproductive lives ahead. LARC methods are private and provide continuous protection against unwanted pregnancy, with higher continuation rates than short-acting methods, while serving a range of clients' intentions to delay or space births.

However, evidence on the most acceptable method mix for postabortion clients is scarce. More health systems research is needed to assess method continuation and discontinuation rates and to evaluate the impact of improvements in PAFP services on contraceptive prevalence and whether such improvements result in lower maternal morbidity and mortality.³⁴

Balanced Method Availability Helps Prevent Repeat Abortions

The package of interventions described here has set the groundwork for stronger postabortion contraception services. Postabortion contraception contributes to the prevention of unwanted pregnancy. Also, it contributes to increased contraceptive acceptance on a national level by addressing an often overlooked group of women with high demand for contraception. Focusing on promoting a more balanced method mix and improving access to LARC methods has led to higher levels of postabortion contraceptive method acceptance overall.

In conclusion, well-planned and organized PAFP services are a cost-effective, feasible, and easily replicable strategy for serving women, especially young women, with an unmet need for contraception who are highly vulnerable to a future unintended pregnancy and repeat abortion.

Acknowledgments: This article documents the intervention implemented by Ipas Ethiopia in collaboration with the government health system at all levels to strengthen postabortion family planning services and expand contraceptive choice. We gratefully acknowledge the following institutions and their staff for successful implementation of the program: Federal Ministry of Health, SNNPR Regional Health Bureau, zonal and district health offices, the 101 intervention facilities, the Ipas global office, the Ipas country office, and Ipas regional health system staff. The implementation and documentation of strengthening postabortion family planning services was made possible through the generous funding of an anonymous private donor. The findings, views, and conclusions are entirely those of the authors.

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A mid-level provider discusses available contraceptive methods with a client to assist her in making an informed, voluntary contraceptive choice.

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ORIGINAL ARTICLE

Ugandan Women's View of the IUD: Generally Favorable but Many Have Misperceptions About Health Risks

Rogers Twesigye,^a Peter Buyungo,^a Henry Kaula,^a Dennis Buwembo^a

Women in Uganda are aware of the IUD and think it is an effective method, but many think it can damage the womb or make a woman infertile. Addressing public misperceptions through interpersonal communication and the mass media, and provider misperceptions through training, can help to build demand for the IUD in Uganda.

ABSTRACT

Background: Between 2001 and 2006, IUD use in Uganda stagnated at 0.2% among women of reproductive age (WRA) ages 15–49. By 2011, IUD use had increased slightly to 0.4%. Recent studies report a significant increase in IUD use to 3.8%, but it is still low. Because the IUD is a little-used method in Uganda, we assessed the acceptability of the IUD by surveying women about their perceptions, attitudes, and beliefs.

Methods: In August and September 2014, we conducted a cross-sectional survey among 1,505 WRA exiting public and private health facilities in Uganda. We collected information on women's attitudes, knowledge, and beliefs about the IUD, as well as their perceptions about its availability. We classified women's responses according to a behavior change framework with 3 summary constructs: opportunity (structural factors that influence behavior), ability (skills to perform the behavior), and motivation (self-interest in adopting the behavior). As these 3 types of factors are more favorable to the desired behavior (in this case, use of the IUD), individuals are more likely to perform the behavior. Cross-tabulations compared the percentage results of perceptions and knowledge by key background characteristics.

Results: Most (87.8%) of the surveyed women had heard of the IUD, and nearly two-thirds had a positive attitude toward the method. But a lower percentage (38.6%) had accurate information about the IUD and more than half (51.6%) did not think the method was available in a nearby facility. More than half of the women believed incorrectly that the IUD can damage the womb (57%), that it reduces sexual pleasure (54%), and that it can cause cancer (58%). Current use of family planning or of a modern method specifically was positively associated with awareness and accurate knowledge and beliefs about the IUD. Married women had significantly higher awareness of the IUD than single women, and they had better knowledge and belief scores. The type of facility used for health care services (public, private franchise, or private non-franchise) may also influence acceptance of the IUD.

Conclusion: Interventions to increase the use of IUDs in Uganda should address low availability of the method in facilities, as well as misperceptions and misinformation, especially about the safety of the IUD. Demand promotion should address provider misperceptions in addition to client misperceptions and should include interpersonal communication and the mass media.

BACKGROUND

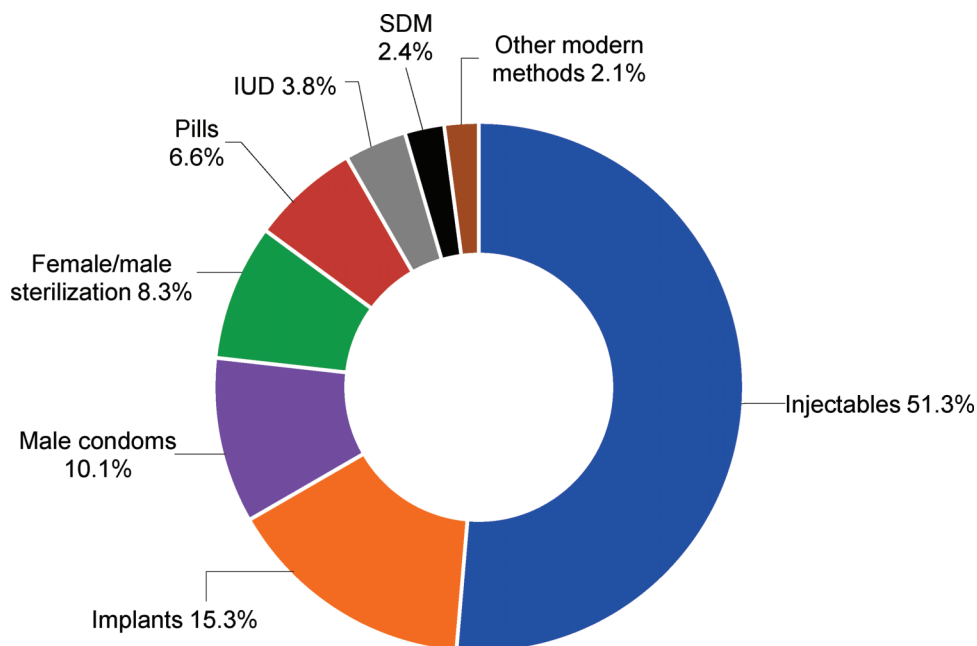
Uganda, with a population of 34.9 million,¹ has one of the highest population growth rates in the world: 3.3% per year.² Its total fertility rate of 5.8 children per woman in 2015 is also one of the highest in the world, despite a reduction from 6.2 children per woman in

2011.^{3,4} About 42.6% of recent births were unintended: 27.7% of women wanted a child later, and 14.9% did not want another child.⁴

An almost-equal share of current contraceptive users in the country obtain their methods from the public and private sectors: 47% from public facilities, which provide free family planning services, and 45% from private providers.³ Public facilities tend to offer more contraceptive methods than private providers. For example, in 2015 39% of public-sector facilities had

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FIGURE 1. Modern Contraceptive Method Mix Among Married Contraceptive Users, Uganda, 2015

Abbreviations: IUD, intrauterine device; SDM, Standard Days Method.

Source: PMA, 2015-Uganda.³

IUDs in stock, compared with 7% of private providers, and 48% and 12%, respectively, had implants in stock.⁴

In the past 5 years, the unmet need for family planning in Uganda decreased modestly from 34% of women of reproductive age (WRA) ages 15–49 in 2011 to 30% in 2015. Use of modern contraceptive methods increased from 26% to 32% during the same period, and use of long-acting reversible contraceptives (LARCs)—comprising implants and the intrauterine device (IUD)—increased from 6% to 9% of total modern method use.⁴

Contraceptive prevalence in Uganda is dominated by injectables, male condoms, and other short-acting methods (Figure 1). Among married contraceptive users, the copper IUD makes up the smallest proportion of the current method mix at 3.8% compared with 6.6% for pills, 8.3% for sterilization (male and female), 10.1% for male condoms, 15.3% for implants, and 51.3% for injectables.⁴ Although the share of the IUD in the

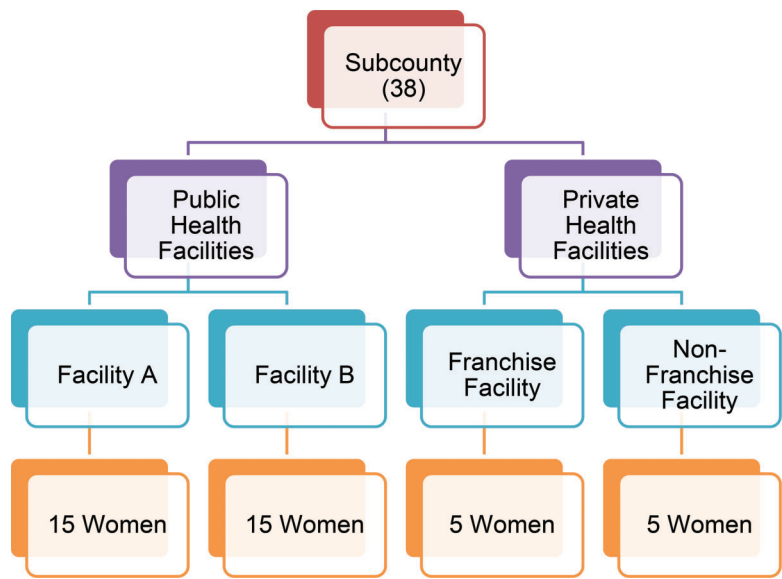
method mix is small, use of the method was only 0.4% in 2011, and thus its use has increased dramatically.

Because IUDs are a little-used method in Uganda, we wanted to survey women's knowledge, attitudes, and beliefs about it. We used data from a survey conducted in 2014 among women ages 15–49 years exiting public and private health facilities located in the area of the Women's Health Project (WHP). This project has been implemented since July 2008 by the Programme for Accessible health Communication and Education (PACE) or Population Services International (PSI) Uganda. A network of ProFam-branded health facilities and partner health facilities carries out WHP. By September 2014, the ProFam franchise had more than 195 facilities in 60 districts in all regions of the country.

WHP aims to increase demand for and access to a wide range of contraceptive methods, with a particular emphasis on increasing access to the IUD,

Among married contraceptive users, the IUD makes up the smallest proportion of the current method mix at 3.8%.

FIGURE 2. Sampling Procedure: Participants Interviewed at Public, Private, and Pro-Fam Franchise Facilities in Each of the 38 Selected Subcounties



among WRA by improving knowledge and correcting misperceptions related to modern methods through interpersonal communication and the mass media. For interpersonal communication, community-based mobilizers are trained and commissioned to conduct door-to-door sensitization and education of WRA about LARCs and other family planning services. Mass media activities include branding and radio and television advertising. The program also trains providers to insert IUDs and provides insertion kits and subsidized IUDs to franchise facilities.

METHODS

Design

We carried out the survey in August and September 2014. We used a cross-sectional survey design with structured face-to-face exit interviews, and a multistage cluster sampling to select the study sites at the subcounty and facility level. We drew up a list of all subcounties in 60 project districts with their respective populations and used the probability proportional to population size approach to select 38 subcounties. Four health facilities—2 public and 2 private—were selected in each sampled subcounty using simple random methods from

lists of health facilities in the subcounty. For private facilities, we selected 1 franchise facility in the subcounty and 1 non-franchised but private facility (Figure 2).

Selection of Survey Participants

A total of 1,505 WRA were interviewed when leaving the selected health facilities, irrespective of the services they had received. Interviewers screened all females for eligibility whom they judged to be 15–49 years old. Each selected subcounty contributed 40 WRA toward the overall sample. Public health facilities contributed 30 client exit interviews in each subcounty—15 interviews at each facility. The private health facilities contributed 10 client interviews—5 interviews at the franchise facility and another 5 at the selected non-franchise facility. Analysis for correct knowledge, attitudes, and beliefs was only done among the 87.8% of participants (n = 1,321) who said that they had heard of the IUD, either spontaneously or after prompting.

Study Instruments and Variables

We collected information on demographics, access to media, fertility history, contraceptive knowledge,

The PSI behavior change framework has 3 summary constructs: opportunity, ability, and motivation.

and perceptions about family planning in general and about IUDs in particular. We also looked at levels of exposure to communication messages about family planning.

Awareness and knowledge questions were measured using dichotomous variables, whereas perceptions were measured using an evaluation of statements on a 5-point Likert scale, from strongly disagree (1) to strongly agree (5). The questionnaire was designed in English (see [supplementary material](#)) and translated into the 6 main languages in the study area.

We classified perceptions according to a behavior change framework adopted by PSI based on a literature review of behavior change theories. This framework has 3 summary constructs: opportunity, ability, and motivation.⁵ Each of the summary constructs comprises different but related factors. As the opportunity, ability, and motivation factors are more favorable to the promoted behavior, individuals are more likely to perform the behavior. The following descriptions were adopted for IUD measurement from the PSI framework.

- **Opportunity** comprises external or structural factors that influence an individual's chance to perform a promoted behavior. The opportunity factors measured were awareness and availability. On perceived availability of IUDs, participants were asked to respond to statements such as "IUDs are available in facilities nearby in the community."
- **Ability** comprises an individual's skills or proficiencies to perform a promoted behavior. The factor measured under ability was knowledge—whether the individual had correct information about IUDs. Correct information was assessed by 3 statements to which participants had to answer true, false, or don't know: The IUD can be used while breastfeeding [correct response: true]; Once the IUD is removed, a woman can get pregnant [correct response: true]; and The IUD protects against sexually transmitted infections (STIs) [correct response: false].
- **Motivation** measures a woman's self-interest in adopting the IUD. Motivation was measured by looking at attitudes, beliefs, and outcome expectations. Attitudes refer to an individual's assessment of the promoted behavior. Items used to measure attitudes included: The IUD is a good method of family planning; The IUD is a safe family planning

method; and The IUD is an effective family planning method. Women chose answers from the 5-point Likert scale. Beliefs are perceptions about a promoted behavior that may or may not be true. Items were measured on the 5-point Likert scale and included: IUDs can result in cancer; IUDs can damage the womb; and Prolonged use of IUDs can cause infertility.

Data Analysis

We used SPSS version 18 to analyze the data. Correct knowledge was computed by creating a new variable for participants who gave correct answers for all 3 knowledge questions. For the scaled responses, we conducted factor analysis to load similar statements together that resulted in 2 components—attitudes and beliefs/myths about the IUD. We used Cronbach's alpha to calculate internal reliability and consistency of the 2 created components ([Table 1](#)). Composite scores based on a scale of 1–5 were thereafter computed for each created component. A higher score related to a positive attitude (acceptable) and a lower score to a negative attitude (unacceptable). The reverse was true for the score on the second component related to myths about the IUD; a lower score in this case related to a positive attitude. Cross-tabulations compared the percentage results of perceptions and knowledge by key population characteristics, and we conducted UNIANOVA analysis to compare mean scores for the 2 created components and key characteristics and to test the significance of observed differences.

Ethical Procedures

The study was approved by the Mildmay Uganda Research Ethics Committee (MUREC) and registered with the Uganda National Council for Science and Technology (UNCST).

RESULTS

Characteristics of the Study Participants

The majority (85.9%) of the survey participants were 34 years or less, and 70.3% were either married or cohabiting ([Table 2](#)). Slightly over half (52.3%) of the participants had either no education or only a primary education; the rest had a secondary education or higher. More than three-quarters (81.0%) were Christians (32.1% Catholics, 29.7% Protestant, and 19.2% Pentecostal), and 18.9% were Muslims. Half (50.8%) of the

TABLE 1. Reliability Analysis Using Cronbach’s Alpha for Attitudes and Beliefs About the IUD

	Cronbach’s alpha
Attitudes	0.862
The IUD is a good method of family planning.	
IUDs are safe.	
The IUD is an effective contraceptive method for women like me.	
Beliefs	0.880
Using IUDs can result in cancer.	
IUDs can damage the womb.	
Prolonged use of IUDs can cause infertility.	

Abbreviations: IUD, intrauterine device.

participants reported that they regularly or at times read newspapers. A similar proportion regularly or at times watched television, whereas almost all (92.4%) listened to the radio sometime every month.

More than three-quarters of the participants (81.2%) had ever given birth in their lifetime (Table 2); 40.6% had given birth to 1 or 2 children, about one-quarter (23.5%) had 3–4 children, and 17.1% had given birth to 5 or more children. Just over half (53.0%) of the participants (exclusive of those who were pregnant) were using some form of contraception to delay or avoid pregnancy, and 44.1% were using a modern contraceptive method.

Opportunity: Awareness of the IUD

The majority (87.8%) of the participants had heard of the IUD as a contraceptive method. Awareness of the IUD varied by marital status, age group, current use of family planning, and TV viewership (Table 3). For example, significantly more married women had heard of the IUD than unmarried women (90.8 vs. 80.5%, respectively; $P<.001$). Similarly, significantly more women using any form of contraception had ever heard of the IUD than those not using a contraceptive (91.5% vs. 82.5%, respectively; $P<.001$). The trend was similar for women using modern contraceptives in comparison with those using traditional methods (92.6% vs. 86.1%, respectively; $P=.001$). No statistically significant differences were observed in awareness of the

IUD and parity, whether one listens to the radio, or the type of facility used for health care services.

Opportunity: Perceived Availability of IUDs

Overall, 48.4% of participants perceived IUDs as available in a facility nearby in the community. Perceived availability of IUDs varied by use of modern contraception, age group, and source of health services. Most notably, significantly more women using modern contraceptives than those using traditional methods perceived IUDs as available in a nearby facility (50.3% vs. 43.3%, respectively; $P=.05$). No statistically significant differences were observed on perceived availability of IUDs and marital status, parity, use of any family planning method, radio listenership, or TV viewership.

Ability: Correct Knowledge About IUDs

Overall, 38.6% of the women who had heard of the IUD knew that it can be used during breastfeeding, that a woman can get pregnant once the IUD is removed, and that the IUD does not protect against STIs. Correct information about the IUD varied by marital status, age group, current use of family planning, and radio listenership (Table 3). No statistically significant differences were observed in correct knowledge about IUDs and parity, TV viewership, or the type of facility used for health care services.

Most surveyed women had heard of the IUD.

Nearly two-thirds of surveyed women believed that IUDs are safe, but many surveyed women had misconceptions about the method.

TABLE 2. Characteristics of Survey Participants (N = 1,505)

Characteristic	%
Age group	
15–24	48.2
25–34	37.7
35–49	14.1
Marital status	
Not married	29.7
Married/cohabiting	70.3
Education	
No formal education	7.7
Primary	44.6
Secondary	38.5
Above secondary	9.2
Religion	
Catholic	32.1
Protestant	29.7
Pentecostal	19.2
Muslim	18.9
Access to media	
Reads newspapers	50.8
Listens to radio	92.4
Watches television	56.7
Parity	
Ever given birth	81.2
Never given birth	18.8
No. of living children	
0	18.8
1–2	40.6
3–4	23.5
5 or more	17.1
Contraceptive use	
Any method	53.0
Modern method	44.1

Motivation: Attitude Toward IUDs

The study results showed that nearly two-thirds of the women believed that IUDs are safe (60.3%) and are a good method of family planning (63.7%). In addition, 59.0% reported that IUDs are an effective family planning method, while a notable percentage (45.8%) would recommend an IUD to a friend. Women scored the IUD above average (3.6 out of 5) as a good, safe, and effective family planning method (Table 4). No background characteristic showed significant variations on attitude toward the IUD.

Motivation: Beliefs About IUDs

Overall, women seemed to agree with or were not sure about the incorrect beliefs about the IUD. More than half (57%) of the women believed IUDs can damage the womb and a similar percentage (54%) thought IUDs reduce sexual pleasure. More than half (58%) also believed that the IUD can cause cancer while close to half (48%) believed that prolonged IUD use can cause infertility. On average, women scored the IUD 3.6 out of 5 in relation to causing cancer, damaging the womb, and causing infertility.

Beliefs about IUDs were found to vary by marital status, age group, current use of family planning, and source of health services (Table 4). Married women, for example, scored significantly lower than unmarried women on the incorrect beliefs about IUDs (3.0 vs. 3.5; $P < .001$). This implies that married women refuted incorrect beliefs about IUDs more than their counterparts and therefore were more likely to accept the IUD. Notably, women at the project franchise facilities were more accepting of the IUD compared with those at public and other private facilities. No statistically significant differences were observed in incorrect beliefs and number of children, use of modern contraceptives, and TV viewership or radio listenership.

DISCUSSION

Despite the low use of the IUD in Uganda, a high percentage of women surveyed in this study—nearly 90%—have heard of the IUD. By comparison, in the 2011 Uganda Demographic and Health Survey, 70.2% of women said that they had heard of the IUD.³ The surveyed women in this study generally have a positive attitude toward the IUD as a safe and effective family planning method, but the majority have inaccurate knowledge about the method, for example, about return

TABLE 3. Opportunity and Ability Factors (%) Related to IUDs Among Survey Participants by Background Characteristics

Characteristic	Opportunity		Ability	
	Heard of IUDs (N=1,505)	P Value	Perception of IUD Availability (n=1,321) ^a	P Value
			Correct IUD Knowledge (n=1,321) ^b	P Value
Marital status		<.001		.45
Married/cohabiting	90.8		49.0	
Not married	80.5		46.7	
Age		<.001		.02
15–24	84.0		45.0	
25–34	92.0		53.0	
35–49	89.2		46.0	
Parity		.92		.85
1–2	90.5		48.8	
3–4	90.9		50.8	
5 or more	89.9		50.0	
Uses family planning		<.001		.97
No	82.5		48.9	
Yes	91.5		49.0	
Type of family planning		.001		.05
Traditional	86.1		43.3	
Modern	92.6		50.3	
Listens to radio		.13		.30
Not at all	85.3		72.5	
Usually	88.1		78.7	
Watches TV		.01		.70
Not at all	85.3		77.7	
Usually	89.7		78.8	
Type of facility used for health care services		.29		.008
Public	86.5		48.6	
Private, non-franchise	89.5		45.6	
Private, franchise	87.9		58.6	
Total	87.8		48.4	

Abbreviation: IUD, intrauterine device.

Significant *P* values ≤ .05 are shown in boldface.^a Percentage of women who had heard of IUDs and who responded positively to the statement, “IUDs are always available in the community and in a facility nearby.”^b Percentage of women who had heard of IUDs and who knew the correct answers to the following statements: “IUDs can be used while breastfeeding” (correct answer: yes); “Once removed, a woman can get pregnant” (correct answer: yes); and “IUDs protect against sexually transmitted infections” (correct answer: no).

TABLE 4. Motivation Factors Related to IUDs Among Survey Participants by Background Characteristics (N = 1,505)

Characteristic	Mean Attitude Score ^a	P Value	Mean Beliefs Score ^b	P Value
Marital status		.62		<.001
Married/cohabiting	3.6		3.0	
Not married	3.6		3.5	
Age group		.09		.04
15–24	3.5		3.2	
25–34	3.9		3.0	
35–49	3.5		3.4	
Parity		.64		.86
1–2	3.6		3.2	
3–4	3.6		3.1	
5 or more	3.7		3.0	
Uses family planning		.35		.002
No	3.4		3.4	
Yes	3.6		3.0	
Type of family planning		.44		.08
Traditional	3.6		3.2	
Modern	3.6		3.0	
Listens to radio		.48		.89
Not at all	3.4		3.1	
Usually	3.6		3.2	
Watches TV		.71		.38
Not at all	3.6		3.2	
Usually	3.6		3.1	
Facility type		.25		.003
Public	3.6		3.2	
Private, non-franchise	3.5		3.3	
Private, franchise	3.7		2.8	
Overall score	3.6		3.6	

Abbreviation: IUD, intrauterine device.

Significant *P* values ≤ .05 are shown in boldface.^a Women's scores out of a total 5 for the following 3 statements: The IUD is a good family planning method; The IUD is a safe family planning method; and The IUD is an effective family planning method.^b Women's scores out of a total 5 for the following 3 statements: The IUD can result in cancer; The IUD can damage the womb; and Prolonged use of IUDs can cause infertility.

to fertility after IUD removal, and the majority also believe in myths surrounding the IUD. For example, over 40% of the participants had incorrect information about the IUD in relation to breastfeeding, return to fertility, and protection against STIs. Participants also believed incorrectly that IUDs cause cancer and damage the womb.

Availability of IUDs is limited by the lack of skilled providers and the lack of equipment. Over half of the survey respondents perceived a lack of availability of IUDs in nearby facilities. This perception is supported by findings from other surveys. For example, in a 2014 survey of private-sector providers, over 70% of the providers had ever had training in IUD insertion, but only 4% of franchise providers and 13% of non-franchise providers had comprehensive training, including lectures, practice on models, and performing an insertion and removal on a patient under observation.⁶ Furthermore, only 30% of the providers correctly identified 3 of 5 side effects of the IUD.⁶ Providers are a key source of information for women seeking family planning, and a knowledge gap on their side results in a knowledge gap among women, which affects acceptance of a particular family planning method.

In our study, several factors emerged as having an influence on awareness, knowledge, and beliefs about the IUD. Current use of any family planning method or of a modern method specifically was positively associated with awareness and accurate knowledge and beliefs about the IUD. Women using contraceptives are more likely to be exposed to information about the IUD at a facility or from a health care provider than nonusers. In addition, married women had significantly higher awareness of the IUD than single women and had better knowledge and belief scores. This might be attributed to the fact that married women have already had children and therefore are in need of limiting births or spacing for a longer period. TV viewership seemed to play a more significant role in improving awareness about the IUD, whereas radio played a more significant role in women having correct knowledge about the method. Finally, the type of facility used for health care services may also influence acceptance of the IUD as a contraceptive method. Women at franchise facilities believed less in IUD-related myths than women at public facilities or private but non-franchise clinics. Women at franchise clinics also perceived the IUD as being available in the community. This might be attributed to the efforts to increase

IUD use by PACE through its Women's Health Project.

Study Limitations

Conducting the study in project implementation areas may have led to some bias since the ProFam franchise is in only 60 of 112 districts. However, we believe that this bias was reduced by the nationwide promotion of the IUD and the use of a random sample of non-franchise facilities and participants. Although women were selected randomly, only WRA who visited facilities on days when research teams were visiting had the chance to participate in the study. The study may also suffer from a seasonality effect since data were collected over a short period of time.

CONCLUSION

Use of the IUD in Uganda is increasing rapidly but is still low. To further increase access to and use of the IUD, couples need accurate information about the benefits and risks of the IUD. This information can come through interpersonal communication, from trained providers, and in the mass media. To protect women's health in Uganda, promoting demand for this safe and effective contraceptive method, in the context of wide method choice, should be a priority.

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Over half of the surveyed women did not think the IUD was available in a nearby facility.

To protect women's health and slow Uganda's rapid population growth rate, promoting demand for the IUD, in the context of wide method choice, should be a priority.

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ORIGINAL ARTICLE

Expanding Access to a New, More Affordable Levonorgestrel Intrauterine System in Kenya: Service Delivery Costs Compared With Other Contraceptive Methods and Perspectives of Key Opinion Leaders

Kate H Rademacher,^a Marsden Solomon,^a Tracey Brett,^a John H Bratt,^a Claire Pascual,^b Jesse Njunguru,^c Markus J Steiner^a

At a public-sector transfer price of US\$15 per unit, the direct service delivery cost of Medicines360's levonorgestrel intrauterine system (LNG IUS) per couple-years of protection would be comparable with the cost of other contraceptive products commonly procured in Kenya. Interviews with key opinion leaders suggest that introduction of a more affordable LNG IUS could help increase demand for the method.

ABSTRACT

Background: The levonorgestrel intrauterine system (LNG IUS) is one of the most effective forms of contraception and offers important non-contraceptive health benefits. However, it is not widely available in developing countries, largely due to the high price of existing products. Medicines360 plans to introduce its new, more affordable LNG IUS in Kenya. The public-sector transfer price will vary by volume between US\$12 to US\$16 per unit; for an order of 100,000 units, the public-sector transfer price will be approximately US\$15 per unit.

Methods: We calculated the direct service delivery cost per couple-years of protection (CYP) of various family planning methods. The model includes the costs of contraceptive commodities, consumable supplies, instruments per client visit, and direct labor for counseling, insertion, removal, and resupply, if required. The model does not include costs of demand creation or training. We conducted interviews with key opinion leaders in Kenya to identify considerations for scale-up of a new LNG IUS, including strategies to overcome barriers that have contributed to low uptake of the copper intrauterine device.

Results: The direct service delivery cost of Medicines360's LNG IUS per CYP compares favorably with other contraceptive methods commonly procured for public-sector distribution in Kenya. The cost is slightly lower than that of the 3-month contraceptive injectable, which is currently the most popular method in Kenya. Almost all key opinion leaders agreed that introducing a more affordable LNG IUS could increase demand and uptake of the method. They thought that women seeking the product's non-contraceptive health benefits would be a key market segment, and most agreed that the reduced menstrual bleeding associated with the method would likely be viewed as an advantage. The key opinion leaders indicated that myths and misconceptions among providers and clients about IUDs must be addressed, and that demand creation and provider training should be prioritized.

Conclusion: Introducing a new, more affordable LNG IUS product could help expand choice for women in Kenya and increase use of long-acting reversible contraception. Further evaluation is needed to identify the full costs required for introduction—including the cost of demand creation—as well as research among potential and actual LNG IUS users, their partners, and health care providers to help inform scale-up of the method.

INTRODUCTION

The levonorgestrel intrauterine system (LNG IUS) is one of the most effective forms of reversible contraception^{1,2} and is increasingly popular among

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TABLE 1. Contraceptive Prevalence Among Married Women of Reproductive Age in Kenya, 1988–2015

Percentage of Married Women Using:				
Survey Year	Any Modern Method	Injectable	Copper IUD	Implant
1988–1989	17.9	3.3	3.7	0.0
1993	27.3	7.2	4.2	0.0
1998	31.5	11.8	2.7	0.8
2003	31.5	14.3	2.4	1.7
2008–2009	39.4	21.6	1.6	1.9
2014	53.2	26.4	3.4	9.9
2015	63.1	29.2	4.8	16.1

Abbreviation: IUD, intrauterine device.
Source of data: 2015 survey from Performance Monitoring and Accountability 2020 (PMA2020)¹⁵; all other surveys from Demographic and Health Surveys.¹⁶

Copper IUDs are currently an underutilized method in Kenya.

In 2015, the U.S. FDA approved Medicine360's LNG IUS to prevent pregnancy for up to 3 years. Ongoing clinical trials are evaluating effectiveness for up to 7 years.

women worldwide.³ The product offers a number of advantages beyond its high effectiveness, including reduction of menstrual blood loss and cramps, fewer side effects compared with some other hormonal methods, and possible alleviation of anemia in some populations—all of which could provide substantial benefits to women in developing countries.^{4,5} However, the high price of Mirena—an LNG IUS labeled for 5 years of use that is manufactured by Bayer HealthCare Pharmaceuticals and has been commercially available since 1990—has meant that its availability in developing countries has been extremely limited.^{3,6,7}

Medicines360, a global nonprofit pharmaceutical company based in the United States, is poised to introduce a new, more affordable, highly effective LNG IUS in low-resource settings. Medicines360's mission is to expand access to medicines regardless of socioeconomic status, insurance coverage, or geographic location. In February 2015, Medicines360 and their partner Allergan (formerly Actavis) received U.S. Food and Drug Administration (FDA) approval for their LNG IUS, marketed as LILETTA in the United States, to prevent pregnancy for up to 3 years. Clinical trials are ongoing that will evaluate effectiveness for up to 7 years, with the expectation that the labeled duration of use will be extended.⁸ The product will be sold under the trade name Avibela

in developing country markets. It is a T-shaped, intrauterine system loaded with 52 mg of levonorgestrel and is designed to provide a steady, localized release of approximately 20 mcg of LNG per day, which is comparable to Mirena. The product has already been approved in approximately 20 countries, including in the United Kingdom where it is approved for treatment of menorrhagia and 3 years of contraception under the brand name Levosert.^{9,10} In 2014, with funding from the Reproductive Health Supplies Coalition and the Bill & Melinda Gates Foundation, a new partnership was launched between FHI 360 and Marie Stopes International (MSI)/Marie Stopes Kenya (MSK) to develop an introduction strategy in Kenya for Medicines360's new LNG IUS.^{11,12}

Current Landscape in Kenya

The modern contraceptive prevalence rate (mCPR) among married women of reproductive age in Kenya was 39.4% in 2008–2009 and rose to 53.2% by 2014, according to Demographic and Health Survey data.^{13,14} This increase is also reflected in findings from the most recent Performance Monitoring and Accountability 2020 (PMA2020) survey as of publication of this article, which reported an mCPR of 63.1% in Kenya among married women in 2015.¹⁵ However, copper intrauterine devices (IUDs) remain an underutilized method in Kenya, with 3.4% of married women of reproductive age using the method in 2014 and 4.8% in 2015.^{14,15} In contrast, use of implants has increased steadily over the last decade; prevalence increased from 1.9% in 2008–2009 to 9.9% in 2014 to 16.1% in 2015. Injectables continue to dominate the market, with 26.4% of married women of reproductive age using the method in 2014 and 29.2% in 2015 (Table 1).^{13–15}

The Mirena is not currently offered in the public sector in Kenya and is only available on a limited basis in the private sector. According to an assessment of the current sales of Mirena conducted by MSK in 2014, its price ranges from US\$56 to US\$194 in private-sector clinics in Kenya depending on the location and type of the clinic (in some locations, clients could negotiate a discount ranging from US\$6 to US\$22).¹⁷ To date, limited quantities of free LNG IUS commodities have been donated through the International Contraceptive Access (ICA) Foundation for distribution in Kenya by NGOs. The ICA Foundation was established in 2003 and is a partnership between Bayer HealthCare and the

Population Council. Approximately 70,000 units have been donated worldwide since 2005.¹⁸ Between 2008 and 2011, MSK provided approximately 5,000 donated units of the LNG IUS in Kenya.¹⁹ However, the ICA Foundation does not provide support for marketing or training which has limited the ability of NGOs to scale-up the method.⁷

A recent study of women using the ICA Foundation product in Kenya showed high acceptability and uptake of the method. Among 671 postpartum women offered a range of short-acting and long-acting methods at no charge, 16% chose the LNG IUS (N=109) (all methods were offered to the clients at this facility for free).⁶ (Only a subset [n=93], however, initiated use of the method, either due to medical contraindications or personal reasons.²⁰) Approximately one-third of LNG IUS users in the study indicated that if the product had not been available, they would have chosen a shorter-acting method; only 21% said they would have used a copper IUD, indicating that the hormonal product could potentially fill a niche in the market that is not currently filled by the copper IUD.⁶ In a follow-up assessment of continuation rates, 89% of LNG IUS users (82 of 92 women; 1 woman was lost to follow-up) were still using the method after 1 year, which was comparable to the continuation rate of subdermal implants at 91% (179 of 196 women). Among the 79 LNG IUS users who provided information about their experiences with the product, 87% reported being “very satisfied” with the method at 12 months, with 13% “somewhat satisfied” (similar to 84% and 12% among implant users, respectively; uptake of copper IUDs was low and continuation rates were not reported).²⁰

To determine if Medicines360's LNG IUS would be cost-competitive compared with other contraceptive products if introduced in Kenya, we conducted an analysis of the direct service delivery costs of various family planning methods that are currently being offered or are likely to be introduced there soon. In addition, staff from FHI 360 and MSK conducted interviews with key opinion leaders, which explored current barriers to use of the copper IUD and key considerations for successful scale-up of a new hormonal product.

METHODS

We revised and expanded an earlier analysis conducted by Tumlinson and colleagues of direct

service delivery costs of contraceptives per couple-years of protection (CYP).²¹ We included Medicines360's LNG IUS and updated cost inputs for Kenya. Medicines360 has exclusive distribution rights for the product in 61 countries in Africa and South Asia, and their public-sector transfer price (the price from the supplier, Medicines360, to the distributor) in these countries will vary based on volumes between US\$12 and US\$16 per unit. The analysis conducted reflects a public-sector transfer price of US\$15 per unit based on a weighted average for an order of 100,000 units.¹⁰ (The distributor may then add additional margins when selling the product in-country, per the terms in the agreement with the supplier.)

FHI 360/Kenya and MSK staff also identified and interviewed key opinion leaders to better understand the potential demand for a more affordable LNG IUS in Kenya through the public and private sectors.

Calculating Direct Service Delivery Costs

Elements of direct service delivery costs included commodity costs to international procurers as well as costs of consumable supplies, estimated costs of instruments per client visit, and costs of direct labor for counseling, insertion, removal, and resupply if required.

Consumable supplies include supplies such as sterile gloves, sharps boxes, syringes, scalpel blades, sterile drapes, sanitary pads, and analgesics, when relevant for the various contraceptive methods. Instruments included items such as forceps, bowls, scalpel handles, scissors, and specula.²² For instruments and consumable supplies that could be used for multiple procedures, we divided the total cost of the product by an estimated number of procedures to derive a unit cost. We did not include supplies that have a negligible unit cost (including antiseptic, soap, and iodine) in the model. Supplies for both insertion and removal, if relevant, were included. Costs of consumable supplies were taken from the United Nations Population Fund's (UNFPA) AccessRH Product Catalogue²³ and the IDA Foundation's Electronic Price Indicator.²⁴ Cost of instruments required for provision of long-acting and permanent methods was obtained through personal communication with an international medical instrument manufacturer (Shendu Pak).

Contraceptives currently available in the public sector in Kenya were included, as well as

products such as the Sayana Press injectable that are likely to be introduced within the next several years. Costs for all contraceptive commodities came from UNFPA's AccessRH Product Catalogue²³ or from information in the public domain provided by the supplier in the case of Medicines360's LNG IUS.¹⁰ For female and male condoms, we used an average price of the various condoms listed in the catalog. Table 2 includes a summary of the commodity costs and consumable supplies used in the model. Supply and commodity costs can fluctuate over time; the prices used in the model were accessed in September 2015.

We also included labor time for counseling, insertion, removal, and resupply (if applicable) in the model. Assumptions about labor times were taken from Futures Institute's (now Avenir Health's) OneHealth Tool.²⁵ For example, the model assumes that IUD insertion would require 20 minutes for counseling and 15 minutes for insertion, as well as 1 follow-up visit for 10 minutes and then 10 minutes for removal. We applied the same labor times to the LNG IUS. For all methods except male and female sterilization and male condoms, we assumed that a nurse-midwife would provide the methods, which is

TABLE 2. Per Unit Costs of Commodities, Consumable Supplies, and Instruments Included in the Model (US\$)

Method	Commodity	Consumables for Insertion/Initial Provision	Consumables for Resupply	Consumables for Removal	Instruments
COCs	\$0.27	NA	NA	NA	NA
Copper IUD	\$0.35	\$0.90	NA	\$0.90	\$0.13
DMPA injectable	\$0.72	\$0.34	\$0.34	NA	NA
Female condom	\$0.45	NA	NA	NA	NA
Female sterilization	NA	\$6.64	NA	NA	\$0.15
Implanon implants	\$8.50	\$1.32	NA	\$1.32	\$0.03
Jadelle implants	\$8.50	\$1.32	NA	\$1.32	\$0.03
LNG IUS	\$15.00	\$0.90	NA	\$0.90	\$0.13
Male condom	\$0.03	NA	NA	NA	NA
Male sterilization	NA	\$4.67	NA	NA	\$0.03
NET-EN injectable	\$1.15	\$0.34	\$0.34	NA	NA
Sayana Press injectable	\$1.00	\$0.34	\$0.34	NA	NA
Sino-implant (II) implants	\$8.00	\$1.32	NA	\$1.32	\$0.03

Abbreviations: COCs, combined oral contraceptives; DMPA, depot medroxyprogesterone acetate; IUD, intrauterine device; LNG IUS, levonorgestrel intrauterine system; NA, not applicable; NET-EN, norethisterone enanthate.

Source of data: UNFPA AccessRH Product Catalog,²³ IDA Foundation E-catalogue,²⁴ Stephens,¹⁰ and personal communication with international medical supplier Shendu Pak (for cost of instruments required for long-acting and permanent methods). Supply and commodity costs can fluctuate over time; the prices used in the model were accessed in September 2015.

allowed according to national policies and is common practice in the public and private sectors in Kenya.²⁶ For both male and female sterilization, it was assumed that a physician would spend 30 minutes on the procedure and a nurse-midwife would provide 30 minutes of counseling (for the woman and her partner together), 30 minutes for support to a physician during the procedure, and 10 minutes for a follow-up appointment. For male condoms, we assumed that counseling and method provision would be completed by an unpaid, volunteer health worker; this includes 20 minutes for the first visit for counseling and provision and then follow-up visits of 5 minutes each. For female condoms, we assumed that counseling and provision would be offered by a nurse-midwife. We obtained 2015 salaries for Kenya based public-sector staff through personal correspondence with staff at FHI 360/Kenya. The model reflects a monthly salary of 51,590 KES (US\$552) for a nurse-midwife, and 75,840 KES (US\$811) for a physician. (These salaries include standard allowances provided to employees in the Kenyan public health system, such as uniform or leave allowance). Table 3 summarizes the total time required by cadre of provider.

We used standard CYP conversion factors for each method.²⁷ For short- and mid-acting methods, we aggregated costs of visits made throughout the year to achieve 1 CYP. For long-acting methods, we divided the costs by the appropriate conversion factor. We used a conversion factor of 3.3 years for the LNG IUS, which assumes it will be registered as a 5-year product in Kenya. The model does not reflect other costs required to support product introduction including costs for demand creation and provider training.

Interviews With Key Opinion Leaders

Staff from FHI 360 and MSK conducted 13 semi-structured interviews with key opinion leaders from a variety of organizations, including the Ministry of Health (n=2), NGOs (n=4), international donors and normative bodies such as United Nations bodies (n=4), a private-sector franchisee (n=1), a pharmaceutical distributor (n=1), and a member of a national reproductive health society (n=1). The key opinion leaders were identified and purposively selected based on their knowledge and expertise within the reproductive health field. The interviewers used a

standard interview guide with open-ended questions. Interviewers asked respondents about their perceptions of the current and future landscape for IUDs, potential demand for a new LNG IUS, and potential users' needs and preferences. All interviews were conducted in English and were audio-recorded and transcribed. Staff based in the United States and United Kingdom categorized the responses in Microsoft Excel and selected illustrative quotations that reflected common themes.

RESULTS

The Figure shows that the direct service delivery cost of Medicines360's LNG IUS per CYP would compare favorably with costs of other contraceptive methods commonly procured for public-sector distribution in Kenya. Assuming Medicines360's LNG IUS will ultimately be registered as a 5-year product, its direct service delivery cost per CYP (US\$6.34) would be slightly lower than that of the 3-month contraceptive injectable, depot medroxyprogesterone acetate (DMPA) (US\$7.07), which is currently the most popular method in Kenya, making up 46.2% of the method mix among married women of reproductive age in 2015.¹⁵

At the time of this publication, Medicines360's product was registered for 3 years of use in the United States and the United Kingdom. However, as noted, clinical trials in the United States are ongoing with the expectation that the labeled duration of use will be extended up to 7 years. The Medicines360 LNG IUS contains 52 mg of levonorgestrel, which is the same amount of active pharmaceutical ingredient as the Mirena, which is registered for 5 years of use. The timeline for product registration in Kenya is uncertain, and it is unknown if Medicines360's LNG IUS will be initially registered there as a 3-year or 5-year product. If it is initially registered as a 3-year product and the CYP conversion factor for Implanon is applied in the analysis (i.e., a conversion factor of 2.5 years), then the cost per CYP of Medicines360's LNG IUS would be US \$8.37 (not shown in the Figure).

Perspectives of Key Opinion Leaders: Current Barriers to Uptake of the Copper IUD

All of the key opinion leaders were in agreement that there is potential to increase overall use of

Direct service delivery cost per CYP of Medicines360's LNG IUS would compare favorably with costs of other contraceptive methods distributed in Kenya.

TABLE 3. Total Labor Time Included in the Model for Counseling, Insertion, Removal, and/or Resupply by Method and Provider Cadre

Method	Nurse-Midwife			Physician	Unpaid Health Worker	
	Counseling and Method Provision	Follow-up or Resupply	Removal	Method Provision	Counseling and Method Provision	Resupply
COCs	25 min	5 min	NA	NA	NA	NA
DMPA injectable	25 min	5 min	NA	NA	NA	NA
Female condom	20 min	5 min	NA	NA	NA	NA
Female sterilization	60 min	10 min	NA	30 min	NA	NA
Implanon implants	35 min	10 min	15 min	NA	NA	NA
Copper IUD	35 min	10 min	10 min	NA	NA	NA
Jadelle implants	35 min	10 min	15 min	NA	NA	NA
LNG IUS	35 min	10 min	10 min	NA	NA	NA
Male condom	NA	NA	NA	NA	20 min	5 min
Male sterilization	60 min	10 min	NA	30 min	NA	NA
NET-EN injectable	25 min	5 min	NA	NA	NA	NA
Sayana Press injectable	25 min	5 min	NA	NA	NA	NA
Sino-implant (II) implants	35 min	10 min	15 min	NA	NA	NA

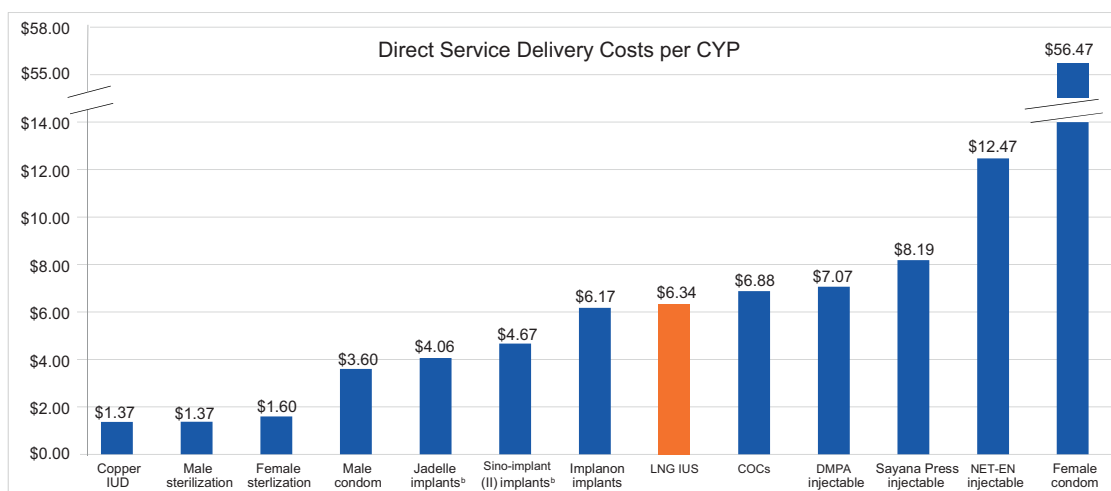
Abbreviations: COCs, combined oral contraceptives; DMPA, depot medroxyprogesterone acetate; IUD, intrauterine device; LNG IUS, levonorgestrel intrauterine system; NA, not applicable; NET-EN, norethisterone enanthate.

Source of data: Futures Institute.²⁵

IUDs in Kenya. They noted that Kenyan women increasingly want to space and limit their children and are also demanding more choice of contraceptive methods, particularly long-acting methods. (According to the 2015 surveys from PMA2020, 15.9% of married women have an unmet need for family planning, with 7.2% having an unmet need for limiting and 8.7% for spacing. Among married women, 20.2% are currently using long-acting methods.¹⁵) However, respondents also noted that IUD usage has remained relatively low in contrast to other methods, including implants, which have been a focus of government advocacy efforts in recent

years. All of the key opinion leaders attributed the low usage of IUDs to a general lack of knowledge and enduring myths and misconceptions about IUDs among women, providers, and the general public. Respondents reported common myths among women, such as the belief that the IUD can get lost in the body or become implanted in an infant during birth, as well as concerns about impact on sexual pleasure, including concerns that sexual partners can feel the strings. Key opinion leaders reported that providers often erroneously think that the IUD is only appropriate for multiparous women, and are confused about the correct timing of insertion.

FIGURE. Direct Service Delivery Cost of the LNG IUS per CYP^a Compared With Cost per CYP of Other Contraceptive Methods (2015 US\$)



Abbreviations: COCs, combined oral contraceptives; CYP, couple-year of protection; DMPA, depot medroxyprogesterone acetate; IUD, intrauterine device; LNG IUS, levonorgestrel intrauterine system; NETEN, norethisterone enanthate.

^a The public-sector transfer price for Medicines360's LNG IUS depends on volumes. The calculated LNG IUS cost per CYP of US\$6.34 in this chart reflects a US\$15 per unit public-sector transfer price based on a weighted average for an order of 100,000 units.

^b Although the commodity cost of Sino-implant (II) implants (US\$8 per unit) is lower than the commodity cost of Jadelle implants (US\$8.50 per unit), Sino-implant (II) is labeled for 4 years of use with a CYP conversion factor of 3.2 years while Jadelle is labeled for 5 years of use with a CYP conversion factor of 3.8 years. Thus, the cost per CYP for Jadelle is slightly lower than that of Sino-implant (II).

Insufficient training for health care providers was also commonly seen as a barrier to IUD scale-up, and key opinion leaders noted that insertion skills and confidence are often lacking. Additional challenges mentioned included limited availability of IUD commodities, a lack of insertion equipment, insufficient space within clinics to offer IUDs, and the longer time required to insert IUDs compared with shorter-acting methods such as injectables. Several respondents also cited the increased bleeding that is often a side effect of copper IUDs as a reason they have not become more popular with women.

Current Perceptions of and Experiences With the Mirena

Almost all of the key opinion leaders had heard of Mirena and had at least a basic understanding of the product (e.g., all were aware that it is a hormonal IUD). The majority of respondents

reported that the product is currently used by women of middle and high socioeconomic status, and several mentioned that users are typically employed and live in urban areas. Key opinion leaders noted that key barriers to uptake of the LNG IUS have been both the lack of availability of the product in the public sector and the high prices of the commodity and insertion fees. For example, one respondent stated:

[A barrier which] is extremely important is the cost ... I can talk even now as a private practitioner. You have a costing that goes anything from 6,000 to 12,000 KES [US\$64–US\$128]. That's the range, that's the whole procedure; it's all loaded to the patient. I have an idea of the range of the market because the prices also fluctuate depending on where you are sourcing the product from. So that's a big, big, big barrier. And I must say, it's more expensive in the bigger the hospital wherever you're going to

put it in. So that's one of the biggest limitation to its use, cost. It's not in the public domain.

When asked how Mirena has been perceived by providers and clients who know about it, the most common response was that the product is known for offering non-contraceptive benefits, and several specifically mentioned reduced bleeding.

Potential Demand for a More Affordable LNG IUS in the Public and Private Sectors

Almost all of the respondents agreed that introducing a more affordable LNG IUS could increase uptake of the method. They also emphasized the importance of addressing the barriers that have historically contributed to low uptake of IUDs in order to ensure successful introduction and scale-up of a new product. For example, one respondent said:

I think once we've cleared ... the myths and misconceptions about IUCDs [intrauterine contraceptive devices] in general and we applaud the benefits ... demand is there. All people need to be assured that you don't have to swallow anything, you don't have any systemic side effects. I think that's what people are concerned about: weight gain, bleeding, and those kinds of things. Then I think we can work on the cost, and once we address the cost side of things, [and] when people have information, then we expect the demand will be high.

One respondent expressed skepticism that introducing a more affordable LNG IUS would be sufficient to increase uptake of the method, emphasizing that the LNG IUS would still face service delivery challenges similar to the copper IUD. This individual said:

Issues around [copper] IUDs and the LNG IUS would be very similar. [The copper] IUD is generally good for the private sector and available free from the Health Ministry and the uptake is poor ... So, I think it's not just the price.

In general, the key opinion leaders agreed that an introduction strategy should include both the public and private sectors, as exemplified by this comment from one respondent:

Let's go for the total market. We want this hormonal IUCD to [be made] available to the public and the private ... sectors. Yes, let it be available.

There were differing opinions regarding whether uptake would be greatest in the public or private sector. Some felt that if the price were substantially reduced and the product were made available, the greatest opportunity to increase access would be through public-sector distribution, which would increase uptake among low-income women. Others felt that the greatest opportunity lies within the private sector, and several respondents indicated that users would likely continue to be mid- to high-income women. Other key market segments identified included women seeking non-contraceptive health benefits, as well as postpartum women and adolescents.

The majority of key opinion leaders expressed the opinion that reduced bleeding would be viewed as a key advantage among potential users. Almost all respondents indicated that women would welcome reduced menstrual bleeding for lifestyle reasons such as increased convenience. Groups who would potentially find reduced bleeding attractive include students, career women who travel frequently, and female sex workers, as well as those who would benefit clinically, such as women suffering from heavy menses and those at risk of anemia. One respondent explained:

I'm looking at a woman in the village. You already have nutritional setbacks; you have the monthly menstruation that is an excessive amount. So [amenorrhea] is a plus, plus, plus! You're reducing the anemia risk and the quality of life with pain. ... [It] benefits business women and school girls ... when you look at the cost-benefit there is a lot more to gain and with some degree of independence and freedom.

Other product characteristics identified that would be attractive to women include reduced cramping, as well as its long-term duration of use and effectiveness.

Key Considerations for Product Launch

Key opinion leaders were asked about the essential steps required to ensure the successful introduction of a new LNG IUS. They all agreed that effective demand creation is crucial; the need for education and awareness was mentioned as a priority by all respondents. For example, one respondent said:

Key opinion leaders emphasized the importance of addressing the barriers that have contributed to low uptake of IUDs.

The majority of key opinion leaders thought that reduced bleeding would be perceived as an advantage among potential users.

[We need] to work on the myths and misconceptions ... the communications aspect.

Key opinion leaders also emphasized the importance of working with a broad coalition of stakeholders to generate buy-in and support for introduction and scale-up of the method. For example, one key opinion leader said:

Start with the policy opinion leaders. Let them ... secure buy-in from opinion leaders. What I mean is the MOH [Ministry of Health], the donors who support family planning, the key service providers of family planning ... everybody.

Key opinion leaders also emphasized the importance of expanding and improving provider training. One respondent said:

For launching, one of the first steps is creating awareness, improving the capacity building through training. Training of providers is critical.

Other recommended strategies included ensuring that the product is available in the public sector as well as the private sector, that there are adequate supplies and equipment, that the LNG IUS is adequately reflected in national policies and guidelines, and that the product becomes prequalified by the World Health Organization. Several key opinion leaders acknowledged that challenges to introduction could include resistance from private-sector providers to a lower-cost LNG IUS because of the high margins they are currently able to charge.

DISCUSSION

The direct service delivery costs per CYP of Medicines360's LNG IUS will be competitive with other hormonal family planning commodities commonly procured by international donors and the government for public-sector distribution in Kenya. In addition to the very high effectiveness of the LNG IUS at preventing pregnancy, the LNG IUS's non-contraceptive health benefits may make it an attractive investment for the government and donors. Realistically, the price of LNG IUS products including Medicines360's will never be equivalent to that of the copper IUD—which can be procured for US\$0.35.²³ However, because the LNG IUS has a different side effect profile from the copper IUD (e.g., the hormonal product can lead to reduced menstrual bleeding, whereas the copper product is associated with heavier, prolonged menses),³ it is appropriate for decision

makers to compare the direct costs of the LNG IUS with the full range of available family planning methods, including contraceptive implants and injectables, as well as to products that are likely to be introduced in Kenya soon, such as Sayana Press.

When asked which women would be most likely to use a new LNG IUS in Kenya, the key opinion leaders most frequently mentioned women who would be attracted to its non-contraceptive clinical benefits. Although Medicines360's LNG IUS has a higher up-front commodity cost than the other contraceptive methods included in the analysis, the method could be positioned in Kenya as a “dual purpose” technology—that is, as a contraceptive product that can treat menorrhagia and has the potential to alleviate anemia. By way of comparison, female condoms—which are promoted as an important “multipurpose technology” that offer protection from both unintended pregnancy and transmission of HIV and other sexually transmitted infections—have a high direct cost per CYP of US\$56, as illustrated in the Figure. Additional cost-benefit analyses of the LNG IUS conducted in Kenya and other developing countries are needed to compare the use of the product with other therapeutic interventions, including for treatment of heavy menstrual bleeding.²⁸⁻³⁰

In addition, an important finding from the qualitative interviews was the perception among the key opinion leaders that women would welcome reduced menstrual bleeding for lifestyle reasons. There is a lingering perception among some in the public health community that women in developing countries are unlikely to find contraception-induced amenorrhea acceptable. The responses from the key opinion leaders in Kenya challenge this assumption and instead suggest that some women in Kenya may seek out a method that is associated with a reduction in menstrual blood loss and cramping.

That said, because of the limited availability of the LNG IUS to date in most developing countries, including Kenya, it is unknown what true demand would be if the product were offered at scale. The uptake of the copper IUD has been low compared with other contraceptives, so it remains a question whether wide-scale introduction of a new LNG IUS would lead to increased use in Kenya. It is notable that almost all of the key opinion leaders agreed that the introduction of a more affordable LNG IUS would increase demand and uptake of the method. This perception is consistent with the findings of Hubacher

The LNG IUS could be positioned in Kenya as a “dual purpose” technology.

and colleagues in an earlier study in Kenya, which showed that 16% of women selected the LNG IUS when it was offered as part of a broader method mix.⁶ At the same time, the key opinion leaders all cautioned that factors on both the demand and supply sides that have contributed to low uptake of copper IUDs in Kenya must be addressed for introduction of a new LNG IUS to be successful at scale.

Limitations

Limitations of this assessment include that a small number of key opinion leaders were interviewed; their perspectives may not be representative of other stakeholders' perspectives or adequately predict how clients and providers will react to the product. Interviews with women were not included in this analysis. Both quantitative and qualitative research is needed among current and potential LNG IUS users and their partners, as well as among health care providers. Most importantly, once the product begins to be introduced, monitoring uptake and evaluating acceptability will be critical both to inform additional scale-up in Kenya and to offer evidence and lessons learned for other countries in the region.

An additional limitation is that the analysis of the costs per CYP of various family planning methods includes only direct, variable costs for service delivery. We did not include fixed facility costs or costs for up-front and ongoing training and demand creation. The full costs of product introduction—including provision in various service delivery settings—will be important to document.

CONCLUSIONS

Results from this early assessment indicate that introduction of a more affordable LNG IUS has the potential to increase access and choice for women in Kenya, and that the method's side effect profile and the associated non-contraceptive health benefits may be attractive to women. As a follow-on to the costing assessment and interviews with key opinion leaders, an introduction strategy for Medicines360's product in Kenya is being developed by MSI/MSK and FHI 360 with input from stakeholders. One goal of this exercise is to identify the steps needed to address the potential barriers to scale-up identified by the key opinion leaders. These include ensuring adequate provider

training, addressing myths and misconceptions among both clients and providers, and increasing awareness of the product among policymakers, the health care community, and the general public.

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ORIGINAL ARTICLE

Vouchers in Fragile States: Reducing Barriers to Long-Acting Reversible Contraception in Yemen and Pakistan

Luke Boddam-Whetham,^a Xaher Gul,^b Eman Al-Kobati,^c Anna C Gorter^d

Vouchers for family planning in Yemen and Pakistan reduced barriers, such as cost and availability, and encouraged public and private providers to improve skills, leading to an increase in uptake of long-acting reversible contraceptives and permanent methods.

ABSTRACT

In conflict-affected states, vouchers have reduced barriers to reproductive health services and have enabled health programs to use targeted subsidies to increase uptake of specific health services. Vouchers can also be used to channel funds to public- and private-service providers and improve service quality. The Yamaan Foundation for Health and Social Development in Yemen and the Marie Stopes Society (MSS) in Pakistan—both working with Options Consultancy Services—have developed voucher programs that subsidize voluntary access to long-acting reversible contraceptives (LARCs) and permanent methods (PMs) of family planning in their respective fragile countries. The programs focus on LARCs and PMs because these methods are particularly difficult for poor women to access due to their cost and to provider biases against offering them. Using estimates of expected voluntary uptake of LARCs and PMs for 2014 based on contraceptive prevalence rates, and comparing these with uptake of LARCs and PMs through the voucher programs, we show the substantial increase in service utilization that vouchers can enable by contributing to an expanded method choice. In the governorate of Lahj, Yemen, vouchers for family planning led to an estimated 38% increase in 2014 over the expected use of LARCs and PMs (720 vs. 521 expected). We applied the same approach in 13 districts of Punjab, Khyber Pakhtunkhwa (KPK), and Sindh provinces in Pakistan. Our calculations suggest that vouchers enabled 10 times more women than expected to choose LARCs and PMs in 2014 in those areas of Pakistan (73,639 vs. 6,455 expected). Voucher programs can promote and maintain access to family planning services where existing health systems are hampered. Vouchers are a flexible financing approach that enable expansion of contraceptive choice and the inclusion of the private sector in service delivery to the poor. They can keep financial resources flowing where the public sector is prevented from offering services, and ensure that alternative sources are available for reproductive health services such as family planning. Programs should consider using vouchers in fragile states to facilitate access to family planning services and support the countries' health systems.

INTRODUCTION

Many of the poorest countries are also beset by conflict or social and political unrest that challenge programs providing health services to their populations. This appears to be the case particularly in 2015

and 2016, with many conflicts across the Middle East and chronic unrest in countries such as the Democratic Republic of the Congo and Pakistan. Official development assistance is increasingly focused on these fragile states because their humanitarian needs are great and their insecurity can spread across a region and affect countries across the globe.¹

The challenges to delivering health services in these contexts are numerous. Even where there is not full-scale conflict, governments struggle to provide health services including family planning services.

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Large populations are often beyond easy reach of a public health facility, and even where those facilities exist, they are under-resourced and their staff often lack the skills to provide the most effective long-acting reversible contraceptives (LARCs) and permanent methods (PMs) of family planning.² Conflict exacerbates these challenges. Government systems break down, financial flows are curtailed, and basic supplies become scarce.

In the context of state fragility and conflict, service provision by the public sector is often weak; private-sector service providers can sometimes fill the gap. In Afghanistan, for example, the private sector provides 80% of all health care.³ In sub-Saharan Africa, as much as 60% of health expenditure is in the private sector, and in South Asia as much as 80% is accounted for by out-of-pocket costs at private-sector facilities.^{3,4} Furthermore, in these contexts, international agencies often bypass the public sector to fund urgent health services through nonprofit agencies for quick and visible results.⁵ Cost can therefore be a major barrier in seeking health services for people living in low-income, fragile environments.

To address these challenges, several organizations, such as the United Nations Population Fund (UNFPA) in Syria, are using vouchers to address the need for reproductive health services in fragile environments.⁶ Vouchers are not a new approach in conflict-affected regions—they are widely used for food, clothing, and shelter—but their use for the provision of health services in fragile contexts is a recent development (although health vouchers have been used in development aid since the 1960s).⁷

This article explores the innovative use of a demand-side financing approach in the form of vouchers to reduce barriers and catalyze uptake of family planning in Yemen and Pakistan, ranked eighth and tenth, respectively, in the Fragile States Index in 2014.⁸ In these challenging environments, women encounter multiple barriers to choosing voluntary LARCs and PMs, evidenced by low utilization rates. Barriers to accessing LARCs and PMs are greater than those for short-acting methods. Providers may lack or have limited knowledge and skills, lack supplies, or be biased against LARCs and PMs due to the greater effort and time needed to provide them. Client barriers include costs, distance to the nearest provider, lack of information, fear of side effects, and cultural beliefs. In fragile states, supplies of implants and intrauterine devices (IUDs) are often erratic or unavailable in rural facilities due to their low

priority and security problems. Clients therefore need to travel farther and incur more costs. This is compounded by insecurity, which makes longer travel unsafe. Vouchers reduce these barriers, facilitating access to the full range of family planning methods necessary for women to make an informed choice on the method to be used.

We first describe Yemen and Pakistan and their voucher programs. We then use data from 2014 to show that vouchers have reduced barriers and increased uptake of family planning services. Finally, we argue that vouchers are well suited to the uncertainties of working in fragile contexts because they enable access to services where the public sector faces challenges from other priorities. Vouchers are flexible enough to keep services available despite the challenges of conflict, and they provide the most needy populations with access to services.

COUNTRY CONTEXT

Yemen

Yemen's health system is dominated by the public sector in rural areas and has a strong private sector in urban areas. Family planning services in the public sector are provided for free; however, due to problems in the supply chain, they are often unavailable in lower-level facilities. In hospitals, clients are required to pay or provide missing commodities and supplies themselves.

The 2013 National Health and Demographic Survey found that knowledge of family planning is almost universal.⁹ However, the national contraceptive prevalence rate (CPR) for modern methods stands at only 29.2% (urban 40.2%, rural 24.0%) and for LARCs/PMs at 8.9% (urban 15.1%, rural 5.9%) (Table 1). The CPR for LARCs/PMs in Lahj governorate (where the voucher program operates) is less than half the national rate. In Yemen, LARCs and PMs are predominantly used in larger cities and by the wealthiest quintile (15.9%), compared with a rate of only 1.6% among the poorest quintile. Just over half (53.0%) of women obtain their contraceptive methods from the public sector, compared with 44.3% from the private sector and 1.2% from NGOs. The final 1.5% represents missing data.

Discontinuation rates are high (43.0% stop using methods within 12 months), with 27.2% discontinuing for a method-related reason (e.g., method failure, side effects, inconvenient use, costs). More than a quarter (28.7%) of married women of reproductive age (MWRA) have an

This article explores the innovative use of a demand-side financing approach to reduce barriers and catalyze uptake of family planning in Yemen and Pakistan.

TABLE 1. Contraceptive Prevalence Rates (%) in Yemen Nationally and in Lahj Governorate, 2013

	Yemen	Lahj Governorate
Short-acting methods		
Pills	11.6	19.7
Injectables	4.2	2.3
LAM	4.0	4.1
Condoms	0.5	0.3
<i>Subtotal</i>	20.3	26.4
LARCs and PMs		
Implants	0.6	0.5
IUD	5.9	1.8
Female sterilization	2.3	1.5
Male sterilization	0.1	0.2
<i>Subtotal</i>	8.9	4.0
All modern methods	29.2	30.4

Abbreviations: IUD, intrauterine device; LAM, Lactational Amenorrhea Method; LARCs, long-acting reversible contraceptives; PMs, permanent methods.

Source: Yemen National Health and Demographic Survey 2013.⁹

unmet need for family planning (15.0% for spacing and 13.8% for limiting). Unmet need for family planning in the poorest quintile is 43.1%, much higher than for the wealthiest quintile, 18.0%.⁹ Only 63% of births were wanted in 2013. If all unwanted births could be prevented, the total fertility rate in Yemen would be 3.1 instead of 4.4 children per woman.

The low family planning rates, the high unmet need, and the pronounced differences between poor and wealthy and between rural and urban areas reflect serious difficulties in family planning access. LARCs and PMs are not easily available in the public sector. In 2014, implants could only be provided by doctors, most health staff in rural public health units were insufficiently trained in IUD insertion, and sterilizations were done only in larger hospitals. Provision of LARC/PM services by the private sector in Lahj is also limited and mostly concentrated in urban areas, and accessing such services through the private sector is beyond the budget of most women.¹⁰

Since March 2015, the security situation in Yemen has deteriorated severely and government funds have all but stopped flowing. Funding from

the central government to the governorates has been erratic.

Pakistan

Pakistan presents a similar picture to Yemen. The public health sector provides the bulk of family planning services in rural areas, and the private sector dominates in urban areas.

The national CPR for modern methods is 26.2%. Voluntary female sterilization is the most common method at 8.7%, and thus accounts for about one-third of all contraceptive use nationally.¹¹ See [Table 2](#) for national, urban, and rural prevalence rates.

The overall prevalence of LARC use in both rural and urban areas is extremely low at around 2.5%. While the overall CPR in Pakistan has increased by 9 percentage points over the last decade, the proportion of LARC users has remained almost unchanged.¹¹

Two-thirds of women choosing voluntary female sterilization receive services in the public sector, while close to half of all women who adopt the IUD receive services at private-sector facilities ([Table 3](#)).

TABLE 2. Contraceptive Prevalence Rates (%) in Pakistan, by Urban and Rural Area and Province, 2012–2013

	Pakistan (nationally)	Urban Pakistan	Rural Pakistan	Punjab Province	KPK Province	Sindh Province
Short-acting methods						
Condoms	8.8	14.8	5.8	9.9	7.0	8.0
Pills	1.6	1.5	1.6	1.1	2.7	1.8
Injectables	2.8	2.5	2.9	2.0	5.2	3.3
LAM	1.5	0.6	2.0	2.3	0.6	0.2
<i>Subtotal</i>	<i>14.7</i>	<i>19.4</i>	<i>12.3</i>	<i>15.3</i>	<i>15.5</i>	<i>13.3</i>
LARCs and PMs						
Implants	0.2	0.1	0.2	0.2	0.0	0.3
IUD	2.3	2.6	2.2	2.9	1.5	1.2
Female sterilization	8.7	9.6	8.2	10.2	2.4	9.7
Male sterilization	0.3	0.4	0.2	0.4	0.0	0.1
<i>Subtotal</i>	<i>11.5</i>	<i>12.7</i>	<i>10.8</i>	<i>13.7</i>	<i>3.9</i>	<i>11.3</i>
All modern methods	26.2	32.1	23.1	29.0	19.4	24.6

Abbreviations: IUD, intrauterine device; KPK, Khyber Pakhtunkhwa; LAM, Lactational Amenorrhea Method; LARCs, long-acting reversible contraceptives; PMs, permanent methods.

Source: Pakistan Demographic and Health Survey 2012-13.¹¹

TABLE 3. Source of Contraceptive Services (%) in Pakistan, 2012–2013

Source	Female Sterilization	IUD	Pills ^a	Injectables	Condoms ^a	Total
Public	66.5	53.3	46.5	56.3	17.7	45.6
Private	33.5	46.7	49.6	43.4	66.6	54.4

Abbreviation: IUD, intrauterine device.

^a Percentages of public and private sources for pills and condoms do not total to 100 because some sources, such as shops, friends, and traditional birth attendants, are not shown.

Source: Pakistan Demographic and Health Survey 2012-13.¹¹

Over 20.1% of MWRA continue to have an unmet need for family planning; 8.8% for spacing and 11.3% for limiting births. Unmet need is higher in rural areas (21.6%) compared with urban areas (17.1%).¹¹ Barriers to adoption of family planning and continued use include an inability to pay for services and challenges to accessing services, such as low availability of skilled service providers at

both public and private facilities and women's limited mobility.¹²

According to World Bank data (data.world-bank.org), Pakistan allocated just 1% of gross domestic product (GDP) to education and health in 2013. Perhaps as a result, Pakistan leads the region in the highest proportion of out-of-pocket spending on health care, accounting for nearly

85.0% of total health expenditure. Health functions are distributed among several ministries at the federal and provincial levels, resulting in fragmentation. There is an absence of effective governance mechanisms; limited coordination between stakeholders; little focus on and investment in family planning and reproductive health services; failure to develop specific advocacy and information messages around family planning; and limited monitoring, evaluation, and research support for family planning and reproductive health services at the state level. High levels of poverty and illiteracy as well as lack of access to social services in rural areas compound the challenge of addressing the low CPR.

BACKGROUND ABOUT VOUCHERS

Voucher programs have a long history of increasing access to health services among underserved populations by reducing financial and other barriers to accessing services.¹³ They can be used for a range of services but have been most commonly applied to improving access to reproductive health services such as family planning and safe motherhood (the Yemen program covers both).

Voucher programs are flexible in their design, effective at leveraging the capacity of both public and private providers of health care, and can be adapted to changing situations and contexts. These are aspects that make them an effective tool for enabling access to health services in fragile states.

Voucher programs can help to strengthen health systems by targeting subsidies to overcome financial and other barriers to accessing health services and encouraging providers to improve the quality of their services for both voucher and non-voucher clients.

Voucher programs encourage improvements in quality by assessing providers in both the public and private sectors and only contracting with those who reach minimum standards or are the best available. Those who are below the minimum standards can be given a chance to improve and be contracted at a later stage. If the vouchers accompany a social health franchise, which is the case for the Pakistan program, the franchise assists the provider to reach the required quality level. Voucher programs also channel funds (voucher reimbursements) to service providers, which can be used to improve service quality (e.g., supplies and commodities, equipment, staff, and infection prevention). Furthermore, in order to

attract more voucher clients and earn more, providers raise the quality of their services and become more responsive to the needs of their clients.

Vouchers enable clients to access services through both the public and private sectors without incurring out-of-pocket expenditures at the point of service, therefore bringing greater benefit to the poor. This can be amplified by making the poor or underserved priority populations for vouchers.

A voucher program is a tool that can reduce barriers for both provider and client. Vouchers level the playing field for voluntary use of LARCs and PMs. The additional income that vouchers provide, by increasing demand, motivates health care providers to offer those services and enables program managers to obtain training for their staff, where relevant, and buy supplies, if necessary. When vouchers are distributed in the community, clients receive face-to-face information and health education on LARCs and PMs and where they can be obtained. Furthermore, the voucher reduces costs for the client and can also reduce distance by encouraging an increased number of health care providers to offer LARC and PM services.

PROGRAM DESCRIPTION

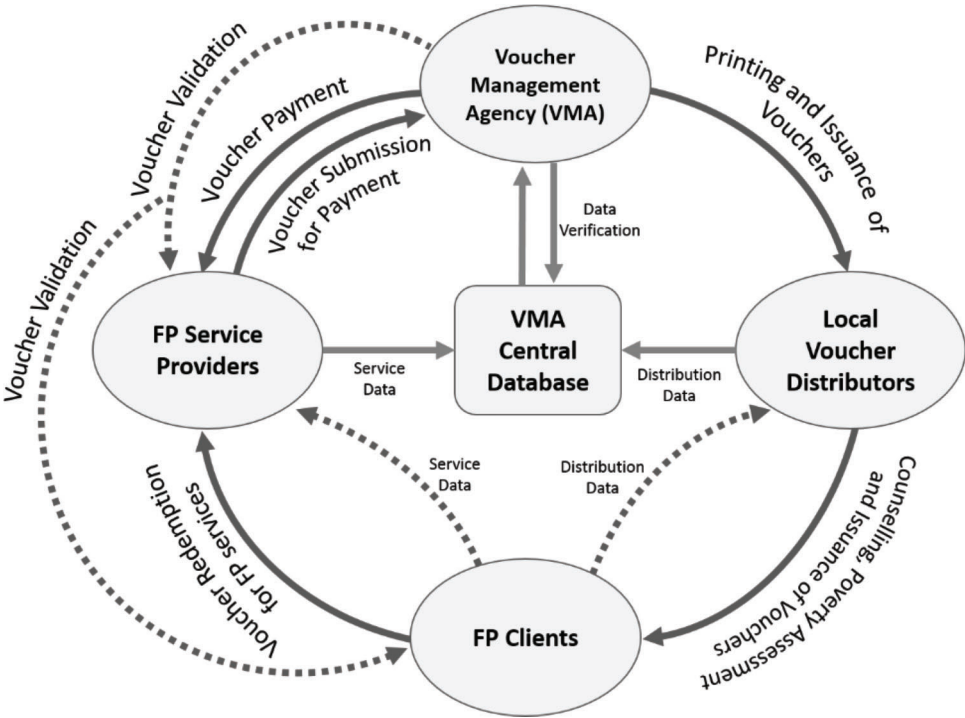
Marie Stopes Society (MSS) in Pakistan and the Yamaan Foundation for Health and Social Development in Yemen—both working with Options Consultancy Services—have developed voucher programs to increase access to LARCs and PMs.

Figure 1 shows a diagram of a voucher program. A voucher management agency (VMA) receives funding and contracts with family planning service providers. The VMA prints the vouchers and issues them to local voucher distributors who visit rural communities and go door to door to counsel potential family planning clients and hand out the vouchers. The client redeems the voucher through the service provider. The provider sends a claim to the VMA for payment for a service. The VMA checks and vets the claim for completeness and consistency of the relevant data filled by the provider, and then sends payment to the provider. Payments take between 6 weeks (MSS) and 10 weeks (Yamaan) to be processed.

Table 4 describes similarities and differences between the 2 country programs. In both countries, the VMA is an NGO. The VMA recruits service providers and trains them in administration of the voucher program. Where gaps are identified, the VMA facilitates technical training of staff on

Vouchers can be used for a range of services but have been most commonly applied to improving access to reproductive health services such as family planning and safe motherhood.

FIGURE 1. Voucher Movement and Funds Flow



Abbreviations: FP, family planning; VMA, voucher management agency.

TABLE 4. Key Aspects of the Voucher Programs in Yemen and Pakistan

Aspects	Yemen	Pakistan
Geographical area	Urban and rural areas in 2 governorates	Rural areas in 13 districts in 3 provinces
Type of VMA	NGO	NGO
Type of family planning service providers	Public and private	Private (franchised network)
Voucher distribution	Local voucher distributors paid according to number of vouchers distributed and redeemed	Local voucher distributors who receive a monthly stipend
Identifying the priority poor population	Geographical targeting of poor areas	Means testing of socioeconomic status
Cost of voucher	Free (for family planning)	Free (for family planning)
Voucher package	Counseling and LARCs/PMs (including follow-up and removal)	Counseling and LARCs/PMs (including follow-up and removal)

Abbreviations: LARCs, long-acting reversible contraceptives; PMs, permanent methods; VMA, voucher management agency.



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A distribution agent gives a family planning voucher to a woman in rural Pakistan.

In Yemen and Pakistan, local voucher distributors identify eligible women, provide them with information on family planning, and hand out the vouchers for free.

service provision, such as insertion and removal of IUDs and implants. In both countries, Marie Stopes offers training on LARCs. The VMA enters into agreements with service providers; the agreements set out the detailed conditions for participation in the voucher scheme, including maintaining quality standards and setting reimbursement prices for services provided. In both countries, the VMA organizes the quality assurance. In Pakistan, supplies are provided through the voucher program; in Yemen, providers can buy supplies from a social marketing program.

In both countries, local voucher distributors identify eligible women in the communities, provide them with information on family planning (relevance and range of methods available, including LARCs and PMs), and hand out the vouchers for free. The voucher gives access to free family planning counseling at a health care facility as well as free LARC/PM services, while short-acting methods are provided for free or at a heavily subsidized rate.

In both countries, program staff carry out periodic field visits to clients, during which they observe where and to whom vouchers are being distributed.

Yemen Voucher Program

The Yemen reproductive health voucher program operates in 2 governorates, Lahj in the south and Ibb in the center. We decided to implement a voucher program based on a detailed feasibility study funded by the KfW Development Bank, which now funds the program. In this article, we describe the results for Lahj, which we selected because it is one of the poorest governorates in the south, as evidenced by the current critical food insecurity level.¹⁴ The governorate, however, has a fairly functional public health system that is interested in developing new approaches to reach its underserved population.

The Yemen Reproductive Health Voucher Programme runs predominantly through the public sector and in close coordination with the governorate and national ministries of health. Providers range from public hospitals to rural health units and community midwives. A substantial minority of the facilities enrolled, however, are private-sector providers.

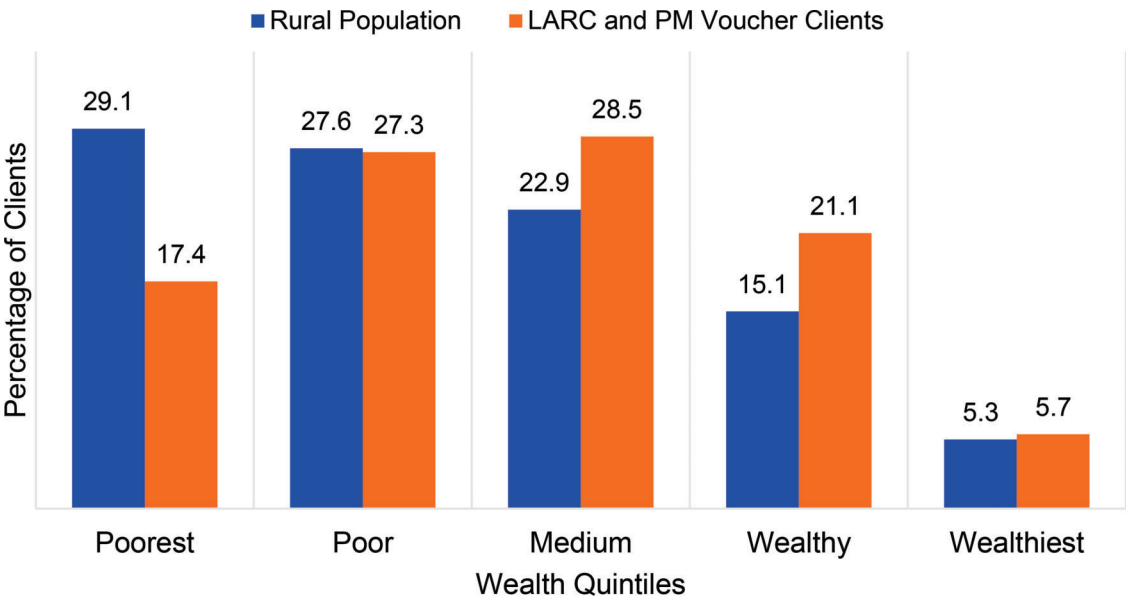
The free family planning vouchers entitle women to a free family planning method of their choice, follow-up for any complications, and a removal if and when required. A second type of voucher is sold at a subsidized price and covers safe motherhood services. The Ministry of Health requested that the program distribute the family planning voucher for free, as it is considered a priority, underutilized service.

Pakistan Voucher Program

The Pakistan voucher program currently covers 29 districts across 3 provinces of the country. The program started in December 2012 with 2 districts. Scaling up occurred in phases: in 2014 the program covered 13 districts in 3 provinces.

The Pakistan voucher program functions against a backdrop of political instability, security concerns, and little focus of the government on human rights and poverty alleviation. In this challenging context, vouchers appear to strengthen the overall health system by engaging and improving the service quality of private-sector providers and by increasing the overall demand for family planning services. The Pakistan program is funded by the UK Department for International

FIGURE 2. Wealth Index Distribution of the Rural Population in Pakistan and of MSS Voucher Clients for LARCs and PMs (N=1,557), 2014



Abbreviations: LARCs, long-acting reversible contraceptives; MSS, Marie Stopes Society; PMs, permanent methods.
Source: Wealth index distribution of the rural population from the 2012-13 Pakistan Demographic and Health Survey¹¹; of voucher clients, from the MSS annual client exit interview survey conducted in December 2014.

Development (DFID). We decided to implement a voucher program based on vouchers’ known efficacy in decreasing access barriers and increasing uptake of targeted services, and their adaptability to challenging operating environments.

The Pakistan Reproductive Health Franchise (RHF) program works entirely with private providers in a social franchise network, called the Suraj Network. While some of these providers are medical doctors, the majority are nurses and lady health visitors, who are a paramedic cadre with a 2-year diploma, specifically trained to provide family planning and reproductive health services.

From an equity perspective, vouchers are considered to be effective in increasing access to family planning services, especially for the poor. Figure 2 presents information from the Annual Client Exit Interview survey conducted in 2014 with clients receiving family planning services at MSS social franchise facilities. Overall, a total of 1,557 family planning clients were interviewed at 151 MSS social franchise facilities in December

2014. The wealth index analysis is based on the weighted analysis. The wealth distribution of clients who access family planning services using a free voucher was similar to the wealth index of rural Pakistan,¹¹ with a slightly higher number of voucher clients in the wealthier quintiles.

A higher proportion of Suraj voucher clients fell within the second and third wealth quintiles, rather than the first and second quintiles. This is not because the poor are not effectively identified as an underserved population; rather it is explained by the fact that, in addition to eligibility being determined by a poverty-ranking tool, vouchers are distributed to clients as a function of their capacity-to-benefit (i.e., a woman is given a free service voucher if she reports lack of access to finances, irrespective of what her poverty-ranking score is).

METHODS AND RESULTS

Voucher programs, because they pay based on results, have strong built-in data collection and

TABLE 5. Estimated Annual LARC and PM CPR and Expected 2014 Annual LARC and PM Uptake Among MWRA, Lahj Governorate, Yemen

	CPR (%)	CYP per Unit	Annual CPR ^a (%)	Expected 2014 Annual Uptake of LARCs/PMs ^b (No. of Women)
Implants	0.5	3.2	0.156	188
IUD	1.8	4.6	0.391	471
Female sterilization	1.5	10.0	0.150	181
LARCs or PMs	3.8		0.697	840

Abbreviations: CPR, contraceptive prevalence rate; CYP, couple-years of protection; IUD, intrauterine device; LARC, long-acting reversible contraceptive; MWRA, married women of reproductive age; PM, permanent method.

^a To obtain the annual CPR, we divided the CPR from the 2013 National Health and Demographic Survey⁹ by the CYP.

^b To obtain the expected annual uptake of LARCs/PMs, we multiplied the population of MWRA (120,478) in 2004 by the annual CPR for each method.

analysis mechanisms. Data on targeted services are collected, and trends in service utilization, are analyzed as an integral part of voucher monitoring systems. These data can be compared with historical data to evaluate the effect vouchers have on utilization.

Yemen

In Lahj governorate, the program was scaled up in phases from April 2013 to September 2014 when all 15 districts were finally participating. From April 2013 to April 2015, the voucher distributors handed out around 56,000 family planning vouchers. There was no requirement to use the voucher immediately; distributors explained that recipients might use them at a later date. Data up to September 2015 show that recipients redeemed about 12,000 vouchers (1,135 for LARCs/PMs and the rest for counseling and/or short-acting methods). The war caused serious problems in the supply chain, and many providers closed their facilities temporarily, which resulted in a 21.0% redemption rate rather than the expected rate of 40.0%.

For Lahj, we estimated the expected annual uptake of LARCs/PMs among eligible MWRA needed to maintain the CPR. We used population data for 2004,¹⁵ corrected for population growth, as well as the CPR from the recent 2013 National Health and Demographic Survey.⁹ The formula we used is as follows: MWRA multiplied by the annual CPR for each method.

Long-acting methods provide multiple couple-years of protection (CYP).¹⁶ A crude but indicative

formula to obtain the annual CPR for a method is to divide its CPR by the CYP. Table 5 presents the annual CPR for implants, IUDs, and female sterilization as well as the number of women that would need to be added annually to maintain the current CPR. The expected annual number of women choosing LARCs or PMs in Lahj is 840. However, because the program did not reach full scale until September 2014, this number had to be corrected for the period that eligible MWRA had access to vouchers that they could use. We calculated this number by using only the person-months that eligible women were covered by vouchers in 2014. This was 62.0% of all person-months in 2014. Therefore, the expected number of women choosing LARCs or PMs, among eligible women covered by a voucher, is 62.0% of 840 = 521. We compared this result against a year of service data generated by the vouchers (Table 6). We found a much higher-than-expected uptake of LARC and PM services in voucher areas in the year 2014: 720 vs. 521 expected overall. This 38.0% difference is a strong indication of the positive effect of the family planning vouchers.

It should be noted that this is *at least* a 38.0% difference. Not all LARC and PM service provision was through vouchers, because non-voucher clients also accessed LARCs and PMs. Service providers reported that the number of non-voucher clients was approximately the same as the number of voucher clients. Not all MWRA took vouchers. By the end of December 2014, distributors had handed out approximately

We found a much higher-than-expected uptake of LARC and PM services in voucher areas in 2014: 720 vs. 521 expected.

TABLE 6. Number of LARC and PM Services Provided Through the Yemen Voucher Program in Lahj Governorate, 2014

	Expected No. of Women Choosing LARCs or PMs in 2014	No. of Women Choosing LARCs or PMs Through Vouchers in 2014	Percentage Difference
Implants	117	273	133.3
IUD	292	428	46.6
Female sterilization	112	19	-83.0
Total	521	720	38.2

Abbreviations: IUD, intrauterine device; LARC, long-acting reversible contraceptive; PM, permanent method.

44,000 family planning vouchers, representing around one-third of all MWRA in Lahj. Furthermore, not all private-service providers were contracted under the voucher program. In 4 of the 15 districts, not all women were eligible; we used an approach that gave priority to poor households in these districts (as opposed to setting priorities geographically in the remaining districts), which excluded a large group of non-poor women. Finally, of the expected 409 implant and IUD removals in 2014, the program provided only 96 removals. This suggests that many women went elsewhere to remove or replace their methods, and that many of those using a voucher to access LARCs and PMs were new users.

The use of implants was more than double the use we would have expected among eligible women in the absence of vouchers; for the IUD, this was 46.6% more. The lower number of sterilizations merits further study. One of the reasons might be that, in practice, with implants and the IUD becoming more available, women preferred these methods over sterilization. Also, as noted above, not all LARC and PM service provision was through vouchers and not all service providers were contracted under the voucher program.

Although the CPR for modern methods has increased considerably during the last decade—from 13.0% in 2003, to 19.0% in 2006, to 29.2% in 2013 nationally and to 30.4% in Lahj⁹—most women use short-acting methods. There have been some small-scale but notable efforts to increase uptake of LARCs and PMs, such as Marie Stopes International Yemen's social franchising of private midwives (the Rayaheen program), but the

voucher program is the only substantial intervention implemented at scale in Lahj.

Pakistan

In 2014, the Pakistan program covered 13 districts with 113 franchised private providers. The priority population around each franchised clinic is estimated at 30,000; the total priority population in these 13 districts was 3,390,000, with 474,600 MWRA. We calculated the expected number of MWRA accessing LARCs or PMs using the same formula applied to the Yemen data (Table 7). Table 8 compares the expected number of women accessing LARCs or PMs against a year of service data generated by the voucher program in Pakistan.

We estimate that the number of women accessing LARCs or PMs in the priority areas in 2014 was approximately 10 times more than expected without vouchers (73,639 vs. 6,455, respectively). While demand for family planning has been increasing over the last decade, provision of family planning services through the government has lagged behind and is low (Table 3). In the priority population described above, 102,514 MWRA (21.6%) had an unmet need for family planning.¹¹

Over 88% of clients who opted for LARCs or PMs used a voucher. Field workers distributed a total of 83,920 vouchers across the 13 districts in the 3 provinces with an overall redemption rate of 87.8%. The redemption rate was the highest in Punjab at 96.0%, followed by Sindh and Khyber Pakhtunkhwa (KPK) at 90.0% and 65.0%, respectively (Table 9). IUDs were by far the preferred choice of clients, accounting for 92% of the vouchers used (Figure 3).

TABLE 7. Estimated Annual LARC and PM CPR and Expected 2014 Annual LARC and PM Uptake Among MWRA, in 13 Pakistan Program Districts

	CPR (%)	CYP per Unit	Annual CPR ^a (%)	Expected 2014 Annual Uptake of LARCs/PMs ^b (No. of Women)
Implants	0.2	3.2	0.06	285
IUD	2.2	4.6	0.48	2,278
Female sterilization	8.2	10.0	0.82	3,892
LARCs or PMs	10.6		1.36	6,455

Abbreviations: CPR, contraceptive prevalence rate; CYP, couple-years of protection; IUD, intrauterine device; LARC, long-acting reversible contraceptive; MWRA, married women of reproductive age; PM, permanent method.

^a To obtain the annual CPR, we divided the CPR from the 2012-13 Demographic and Health Survey¹¹ by the CYP.

^b To obtain the expected annual uptake of LARCs/PMs, we multiplied the population of MWRA (474,600) in 2004 by the annual CPR for each method.

TABLE 8. Number of LARC/PM Services Provided Through the Pakistan Voucher Program, 2014

	Expected in 2014	Total 2014 Through Vouchers	Percentage Difference
Implants	285	3,826	1,242%
IUD	2,278	67,750	2,874%
Female sterilization	3,892	2,063	-47%
LARCs/PMs	6,455	73,639	1,041%

Abbreviations: IUD, intrauterine device; LARC, long-acting reversible contraceptive; PM, permanent method.

Interventions to reduce barriers to contraceptive access are needed in Pakistan's rural areas, and vouchers are an effective approach to achieving that goal.

The free LARC and PM services provided through the vouchers, the marketing and health education by the voucher distributors at a woman's doorstep, and the higher quality of the franchised clinics appear to have contributed to this huge success in reaching poor women in rural areas of Pakistan.

Because of the historically poor trends in the availability and uptake of implants and IUDs, it may be safely assumed that, in the absence of demand- and supply-side efforts to improve awareness of family planning and the supply and quality of LARC and PM services, uptake would have been considerably lower. Interventions to reduce barriers to contraceptive access are needed in Pakistan's rural areas, and vouchers are an approach to achieving that goal.

We were surprised by the extent of the impact of vouchers in Pakistan on family planning uptake. To verify this result, the RHF Pakistan program is conducting a multicenter study to evaluate the impact of family planning service vouchers when combined with social franchising and different behavior change approaches.

DISCUSSION

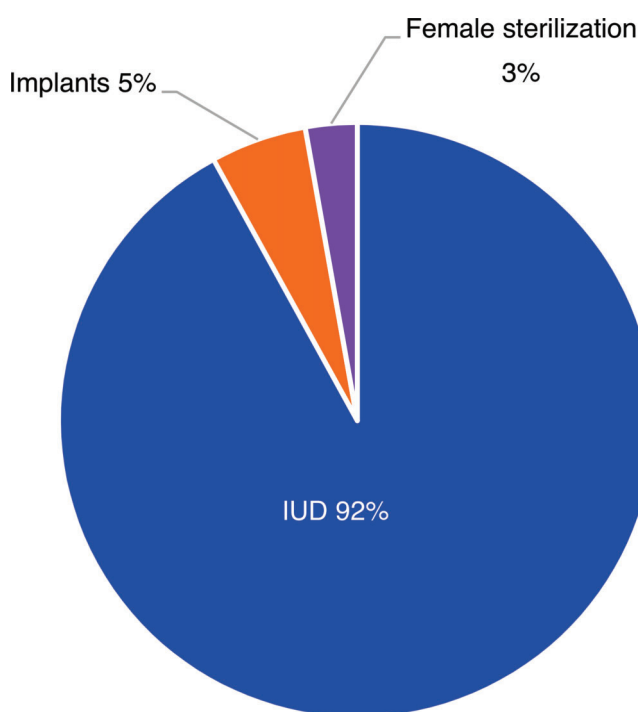
From our experience with voucher programs in Yemen and Pakistan, we have observed that vouchers alone and vouchers combined with social franchising facilitate access to services when traditional supply-side approaches are unable to do so.

When the Yemen voucher program started, very few facilities were offering LARC or PM

TABLE 9. Voucher Distribution and Redemption by Province in Pakistan, 2014

Province	Vouchers Distributed No. (%)	Vouchers Redeemed No. (%)	Redemption Rate (%)
Punjab	52,249 (62)	49,969 (68)	95.6
KPK	18,989 (23)	12,304 (17)	64.8
Sindh	12,682 (15)	11,366 (15)	89.6
Total	83,920 (100)	73,639 (100)	87.7

Abbreviation: KPK, Khyber Pakhtunkhwa.

FIGURE 3. Vouchers Redeemed in Pakistan by Contraceptive Method, 2014

services. The incentives offered by the program encouraged both public and private facilities to access training in LARCs and PMs through the local health offices and NGOs, thus increasing choice and access for women.

Despite the challenges of funding through government channels, the voucher program (which also provides safe motherhood vouchers) has

continued to pay providers for the services they deliver. These are extremely valuable funds, which facilities use not only for family planning and safe motherhood services but also for other health services, such as child illness and malaria.

Fighting within Yemen shut down several key government facilities, including the main governorate hospital, for several months. However, women



A voucher distribution agent in Yemen gives a family planning voucher to a client.

were able to receive reproductive health services from other facilities in nearby districts, including privately run midwife clinics and hospitals. The safe motherhood voucher also entitles women to free family planning services as part of the postnatal care package that it offers.

In Pakistan's challenging context, vouchers were able to increase family planning uptake. Vouchers appear not only to help strengthen the overall health system by engaging and improving the service quality of private-sector providers, but they also increase the overall demand for family planning services.

Supporting our own findings, a 2011 study led by MSS evaluated the impact of vouchers on women choosing the IUD in rural Pakistani communities. MSS conducted this quasi-experimental study in 1 intervention district and 1 control district in each of the provinces of Sindh and Punjab, with 4 service providers in each district. MSS carried out a baseline survey with a sample of more than 4,000 eligible women who were followed up 18 months later. During this 18-month trial combining social franchising and family planning service vouchers, the overall CPR in the intervention districts increased from 27.2% to 48.0%, while in the control districts the CPR increased from only 28.5% to 29.7%.¹⁷ Thus, the net increase in the intervention area was 19.6%.

Program Implications

There are a number of lessons that we can draw from the voucher programs in 2 different, challenging, and fragile environments.

Voucher programs can keep vital funds flowing to public health care providers in times of conflict.

- **Voucher programs work with both the public and private sector** (both for-profit and nonprofit) within the health system as a whole, and can provide comprehensive family planning services by **expanding the contraceptive method choice to a larger group** and increasing the number of providers offering LARCs. By engaging the nonstate sector, voucher programs can fill gaps that under-resourced and, at times, incapacitated, government systems cannot address. The government of Pakistan provides family planning free through its broad network of rural health care providers. However, these providers do not offer LARCs or PMs because they are not fully trained in the provision of these methods and focus instead on short-acting methods, despite serious problems with ensuring a constant supply of such contraceptives. The voucher approach enables private providers who offer LARCs and PMs to be paid when providing these services to poor rural women who would otherwise not be able to afford such services. Payments incentivize these providers to offer family planning services that they otherwise would not offer because the limited numbers of clients seeking LARCs or PMs do not generate sufficient revenue for their businesses. Thus, vouchers expand the method choice. Furthermore, they act as an incentive to reach out to the poorer clients.
- **Voucher programs can keep vital funds flowing to public health care providers in times of conflict.** In Yemen in early 2015, a rebel militia from the north of the country (the Houthis) overthrew the elected government. The government was, for a time, incapacitated and funds did not flow to public health facilities. However, the Yemen voucher program continued to pay for services, providing vital income for facilities and ensuring that services continued to be available to women who needed them.
- **Voucher programs give women alternatives in places where government facilities are temporarily closed due to conflict.** As outlined previously, the voucher program has enabled women to continue to access health services in Yemen despite public facilities being closed by the ongoing conflict. By providing a mechanism through which to

pay private facilities for their services, voucher programs help those facilities to fill a gap in service provision and enable women to access family planning and other key reproductive health services.

- **Voucher programs can standardize quality assurance for targeted services and incentivize providers to maintain and improve the quality of the services they provide.** In fragile contexts, ministries of health can struggle to maintain oversight for all services. Implicit in the voucher approach is regular quality assurance to ensure that participating service providers maintain minimum standards. Marie Stopes International applies its global standards for high-quality family planning to its franchise network in Pakistan. Yamaan works with the government of Yemen Quality Improvement Programme (which is supported by the Deutsche Gesellschaft für Internationale Zusammenarbeit [GIZ]), focused on improving the standard of reproductive health care. Voucher service providers use their service income to improve the quality of their services and thereby attract more clients.
- **Voucher programs are flexible and can adapt to the particular needs of the population and context in which they operate.** While voucher programs strictly adhere to certain processes and procedures (e.g., regular verification and monitoring for fraud control), their design can be adjusted to realities on the ground. For example, in Yemen during the recent crisis, the price of fuel and medical supplies increased substantially. The program was able to easily adjust its pricing policy to accommodate this, ensuring providers stayed in the program and clients continued to receive services. If necessary, voucher programs can include more or other service providers or add health services or other benefits to the voucher package. Vouchers can be combined with other financing mechanisms, such as performance-based financing and conditional cash transfers. Also, once voucher programs are set up, their priority populations can be changed, or they can be scaled up to other geographical areas. Such decisions can be made rapidly to adapt to the constantly changing environment of a country at war.

Limitations

The authors adopted the formulae set out above for these calculations to look at the direction of change in contraceptive use catalyzed by vouchers. However, we recognize that this methodology could be improved to increase the accuracy of the results. We welcome suggestions from readers to improve our methodology.

CONCLUSION

Voucher programs are not a health system approach and do not solve the many challenges faced by health systems in fragile states. They do, however, have a number of strengths. In the short term, they are a proven approach to increasing use of priority services;¹⁸ they improve equity; they can have a positive impact on the quality of services;^{18,19} and recent experience, described in this article, has shown that they are a useful tool for helping to maintain health services when public systems are failing to do so. In the medium to long term, vouchers accustom providers to processes akin to insurance, and they can be a precursor to health insurance programs. They also accustom providers to contracting out to the private sector. Both health insurance and contracting to the private sector are health systems solutions.

Addressing the financial barriers associated with accessing health services can have a substantial effect on utilization, even in fragile states. A 38% increase in voluntary LARC and PM use in Yemen and a 10-fold increase in Pakistan demonstrate this. We would encourage program implementers in fragile settings to consider vouchers to reduce barriers and improve access to family planning services.

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ORIGINAL ARTICLE

Increasing Uptake of Long-Acting Reversible Contraceptives in Cambodia Through a Voucher Program: Evidence From a Difference-in-Differences Analysis

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By reducing financial and information barriers, a family planning voucher program in Cambodia significantly increased contraceptive choice and uptake of more effective long-acting reversible contraceptives among poor women and women with the least education. Without vouchers, many of these women would not have used contraception or would not have chosen their preferred method.

ABSTRACT

Objective: This article evaluates the use of modern contraceptives among poor women exposed to a family planning voucher program in Cambodia, with a particular focus on the uptake of long-acting reversible contraceptives (LARCs).

Methods: We used a quasi-experimental study design and data from before-and-after intervention cross-sectional household surveys (conducted in 2011 and 2013) in 9 voucher program districts in Kampong Thom, Kampot, and Prey Veng provinces, as well as 9 comparison districts in neighboring provinces, to evaluate changes in use of modern contraceptives and particularly LARCs in the 12 months preceding each survey. Survey participants in the analytical sample were currently married, non-pregnant women ages 18 to 45 years (N=1,936 at baseline; N=1,986 at endline). Difference-in-differences (DID) analyses were used to examine the impact of the family planning voucher.

Results: Modern contraceptive use increased in both intervention and control areas between baseline and endline: in intervention areas, from 22.4% to 31.6%, and in control areas, from 25.2% to 31.0%. LARC use also increased significantly between baseline and endline in both intervention (from 1.4% to 6.7%) and control (from 1.9% to 3.5%) areas, but the increase in LARC use was 3.7 percentage points greater in the intervention area than in the control area ($P=.002$), suggesting a positive and significant association of the voucher program with LARC use. The greatest increases occurred among the poorest and least educated women.

Conclusion: A family planning voucher program can increase access to and use of more effective long-acting methods among the poor by reducing financial and information barriers.

INTRODUCTION

From 2000 to 2010, contraceptive prevalence among married women of reproductive age in Cambodia increased dramatically and rapidly—from 24% in 2000 to 40% in 2005 and 51% in 2010.¹ By 2010, knowledge of contraceptives methods among women was nearly universal.

Despite these gains, the use of modern methods, in particular long-acting reversible contraceptives (LARCs) and permanent methods, remained quite low. In 2010, 35% of married women were using modern methods, but only about 17% of these women were using LARCs or permanent methods.¹ By comparison, 15% of modern method users were using the oral pill and 10% were using injectables. At the same time, more than half of married women said that they did not want more children or they wanted to space births by 2 years or more, and 17% of women in 2010 expressed an unmet need for contraception.¹

Access to a full range of modern contraceptives contributes importantly to reductions in maternal mortality and morbidity, a key development goal

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High costs, providers' attitudes, and misinformation present the most significant obstacles to increasing use of LARCs.

in low- and middle-income countries.² In most developing countries, use of short-acting modern contraceptives has greatly increased in response to family planning program initiatives. Significant inequities and disparities remain, however, in women's access to highly effective LARCs.^{3–6}

LARCs remain effective for years, enabling women to delay, space, or limit births as they choose,² without the need for resupply that can be disrupted by failures in the supply chain. Although initial costs of LARCs are higher, the average cost over the period of use is often lower than that of less effective short-acting methods.⁷ However, these long-acting methods are often out of reach of the most vulnerable and marginalized women due to cost and gatekeeping by providers.⁸

As in many other low- and middle-income countries, in Cambodia barriers to LARCs exist at the patient, facility, health systems, and policy levels.⁹ While system-level barriers can present significant challenges to LARC uptake, high costs to the user, providers' attitudes, and misinformation present the most significant obstacles to increasing access to and use of LARCs.^{2,8–11}

Subsidizing services and providing information for potential users who might otherwise be unable to use the service are essential to address these challenges. Studies of demand-side strategies such as vouchers, particularly vouchers for maternal, sexual, and reproductive health care, have found some increases in service utilization, particularly among low-income and marginalized groups.^{12–15} In Cambodia, the Reproductive Health (RH) Voucher program seeks to increase poor women's access to maternal and reproductive health services and to increase uptake and expand choice of family planning methods. Although maternal health care voucher programs in Cambodia have been studied,^{16,17} no studies have reported on the effects of the family planning voucher under the RH Voucher program in Cambodia on uptake of modern contraceptives. In this article, we present analysis from an evaluation of the family planning voucher component of the RH Voucher program.

PROGRAM DESCRIPTION

The Cambodian Reproductive Health Voucher Program

The Cambodian Ministry of Health, with technical support from development partners, launched the RH Voucher program in 2010. The Voucher

Management Agency (VMA), a technical group comprising EPOS Health Consultants, Oxford Policy Management, PriceWaterhouseCoopers, and Action for Health (AFH), managed and implemented the program. Funding came from the German Development Bank (KfW). The Ministry of Health and VMA designed the program and selected operational districts for participation after a number of formative studies, including rapid situational analyses, stakeholder consultations, and needs assessments conducted by VMA with assistance from international experts on voucher programs. The RH Voucher program complements the flagship Health Equity Fund (HEF) program, a strategy to improve access to health care for the poor.¹⁸ The RH voucher scheme offers vouchers for maternal health care and family planning in eligible, accredited public facilities and for safe abortion services in participating private facilities.

The RH Voucher pilot project took place in 110 health centers and their catchment areas in 9 operational districts in 3 Cambodian provinces: Kampong Thom, Kampot, and Prey Veng. Health centers were selected based on a concentration of poor residents in surrounding areas, and the health centers were accredited to implement the voucher program based on satisfactory scores on relevant components of a national quality assessment tool. Women were eligible for the voucher program if they held IDPoor cards (a poverty grading tool that pre-identifies beneficiaries for the national HEF program). If they had not been assessed under the IDPoor program, the RH Voucher program could conduct post-identification through a comparable grading tool.

Vouchers were promoted and distributed through community-based awareness-raising sessions, marketing campaigns, and face-to-face counseling by voucher promoters who informed eligible beneficiaries of the benefits of the services that the vouchers covered. Bellows et al. (2011) provide a full description of the RH Voucher program.¹⁹

The Family Planning Voucher Component

Family planning vouchers, one component of the RH Voucher program, provided free access to any modern contraceptive, including short-acting methods, LARCs, and permanent methods. As part of the means-tested voucher program, community-based distributors identified eligible women of reproductive age holding IDPoor cards and provided them with the vouchers.

Interested eligible women received comprehensive family planning counseling at a facility, typically a primary health center, and were given information on a comprehensive set of contraceptive methods. Clients who chose short-acting modern methods received the service at the primary health center. The health centers referred clients who selected LARCs or permanent methods to higher-level facilities where these methods were available. The voucher entitled beneficiaries to receive the method of their choice, including referral, at no cost. Beneficiaries also received a transportation subsidy of 500 riels (approximately US\$0.13) per kilometer, including for referral if necessary.

METHODS

The Population Council conducted an evaluation of the family planning voucher component of the RH Voucher program, with funding from the Bill and Melinda Gates Foundation, as part of a broader evaluation of voucher and accreditation programs in 5 countries in Africa and Asia. Our analysis focuses on the average effect of exposure to the voucher program (by living in voucher catchment areas) on net change in the use of modern contraceptives, with a focus on the uptake of LARCs. The family planning voucher was not specifically focused on increasing LARC uptake, but we hypothesized that it might improve the uptake of LARCs by reducing cost barriers by offering a free service with transportation and referral subsidies and by removing information barriers through comprehensive counseling.

Study Design and Data

Our findings come from a quasi-experimental pre- and post-intervention study of the Cambodian RH Voucher Program conducted between 2011 and 2013 that used a mixed methodology that included household surveys, health facility assessments, interviews of clients and providers, and observations of client-provider interactions. For details of the research design, including sampling selection, sample size calculations, and matching of intervention and control sites, please see Bellows et al. (2011).¹⁹

The data used in this analysis come from cross-sectional baseline (2011) and endline (2013) household surveys conducted in 9 pilot voucher program operational districts in Kampong Thom, Kampot, and Prey Veng provinces, as well as

in 9 comparison operational districts in neighboring provinces. Both surveys interviewed a total of 2,200 women and 800 men from households within a 5-km radius of contracted facilities and, similarly, in a 5-km radius of comparison facilities. Sample sizes were based on minimum detectable effect calculations that are detailed in the study protocol.¹⁹ We selected the 9 comparison operational districts by using propensity score matching of a number of facility-level characteristics including facility ownership, size, level of obstetric care, and characteristics of the population in the facilities' catchment areas.¹⁹ The baseline survey was conducted in early 2011, before the vouchers were introduced to intervention areas. The endline survey was completed in mid-2013, after an 18-month intervention period between surveys. The RH Voucher program continues to function in the intervention areas after the collection of the endline data. Voucher programs did not operate in comparison areas at any time during the implementation of the evaluation.

The Population Council's Institutional Review Board and the Cambodian National Ethics Committee for Health Research granted ethical approval for this study. All participants gave their informed consent before participating.

Participants in our analytical sample were currently married, non-pregnant women ages 18 to 45 years ($N=1,936$ at baseline and $N=1,986$ at endline) who had answered questions in the baseline and endline surveys on contraceptive use and for whom data were available on key indicators used in the analysis. The Center for Advanced Studies (CAS) Cambodia, in collaboration with the Population Council, collected the data.

Key Measures

The primary outcome variable was use of modern contraceptives among currently married women of reproductive age in the 12 months preceding each survey. We coded contraceptive use as a categorical variable for a comprehensive set of contraceptives. The 5 contraceptive use outcomes in this study are: (1) non-use of contraception, (2) use of traditional methods, (3) use of short-acting modern methods, (4) use of LARCs, and (5) use of permanent methods. A woman was recorded as using a short-acting modern contraceptive if she reported using condoms, oral pills, or injectables as her primary method. We coded women as using a LARC if they reported any use of an intrauterine device (IUD) or a hormonal

implant in the 12 months before the survey. Women were recorded as using a permanent method if they had ever had a female sterilization procedure performed or if their spouse or partner had had a vasectomy. We coded any use of withdrawal or safe days as use of a traditional method.

The core analysis in this study involves measuring the association of exposure to the family planning voucher with uptake of various types of contraceptive methods—LARCs, short-acting modern methods, permanent methods, and traditional methods. We considered respondents to be exposed to vouchers if they lived within 5 km of a facility accredited by the voucher program.

The study presents results of an intent-to-treat analysis of the effect of the family planning voucher on uptake of contraceptives, thus comparing differences in uptake between respondents living in areas where the voucher program operated and respondents living where the voucher program did not operate (as contrasted with a comparison between individuals who used a voucher and those who did not). Thus, women need not have reported use of the voucher to be considered an intervention area participant. Participants from comparison sites were considered to have had no exposure to the voucher program.

The surveys collected data on a range of sociodemographic indicators, including women's age, parity, educational attainment, occupation, religion, and socioeconomic status. We coded parity as no children; 1 child; 2 children; or 3 or more children. We categorized educational attainment as no schooling; completed primary school; completed secondary school (up to grade 9); or high school (grades 10–12) and higher level of education. We coded religion as Buddhism or other. We estimated socioeconomic status using household asset-based wealth quintiles constructed using principal components methodology devised by Filmer and Pritchett,²⁰ which is also used in Demographic and Health Surveys to measure socioeconomic status.

Data Analysis: Empirical Strategy

We present 2 sets of analyses in this paper. First, we present descriptive analysis of the sociodemographic characteristics of women as well as contraceptive use and method mix in both intervention and comparison samples at baseline. Second, we test statistical associations between voucher exposure and net change

in contraceptive use, using the difference-in-differences (DID) technique^{21,22} to determine whether changes in LARC uptake and in uptake of other contraceptives are associated with women's exposure to the family planning voucher. The estimation can be represented by a simple equation:

$$\hat{d} = (\bar{Y}^{2013}_{\text{Voucher}} - \hat{Y}^{2011}_{\text{Voucher}}) - (\hat{Y}^{2013}_{\text{Control}} - \hat{Y}^{2011}_{\text{Control}})$$

The estimate \hat{d} measures the net change attributable to the intervention by ascertaining the difference between changes in the use of modern contraceptives (represented by \bar{Y} , indicating the proportion of use), and specifically LARCs, for women in the voucher intervention and control areas before the intervention and 18 months later. To estimate a net effect, any observed change in the control areas in the use of modern contraceptives generally or in the use of LARCs specifically cannot be attributed to the voucher intervention and thus must be subtracted from the change observed in intervention areas. A key assumption of DID estimation is that preexisting outcome trends between intervention and comparison groups were similar.

We used *t* tests to gauge the significance for the DID estimates as well as for other appropriate 2-sample test analyses. All data analyses were conducted using STATA 13.

RESULTS

Background Characteristics of Women

In Table 1, we present descriptive statistics from the full sample in the baseline as well as from the intervention and control samples. There are no significant variations between the intervention and control samples in the distribution of most sociodemographic characteristics. The only statistically significant difference is in socioeconomic status. The control group was slightly wealthier than the intervention group. It is likely that this difference is a result of a higher proportion of poor women living near contracted voucher facilities in the intervention areas.

Contraceptive Use at Baseline

At baseline in 2011, 71.8% of women surveyed reported not using any form of contraception during the 12 months before the survey (Table 2). Approximately 1 in every 4 women (23.8%) was using a modern method, predominantly

TABLE 1. Percentage Distribution of Women by Sociodemographic Characteristics in Baseline Survey, Cambodia, 2011

	Full Sample (N=1,936)	Voucher Areas (N=961)	Non-Voucher Areas (N=975)	P Value
Age, years, mean	29.2	29.4	29.1	
15–19	2.4	2.5	2.3	.84
20–24	22.1	19.9	24.3	.02
25–29	31.8	32.0	31.5	.79
30–34	23.4	24.6	22.3	.23
35–39	11.8	13.8	9.9	.007
40–45	8.5	7.2	9.7	.04
Education level				
No school	17.4	18.0	16.7	.46
Primary school	58.8	59.2	58.5	.74
Secondary school (up to grade 9)	20.3	18.8	21.6	.13
High school (grades 10–12) or higher	3.5	4.0	3.2	.36
Occupational status				
Unemployed	12.5	13.2	11.8	.35
Agriculture	61.3	59.9	62.7	.22
Informal	9.2	9.7	8.8	.52
Formal	17.0	17.2	16.7	.79
Religion				
Buddhism	98.3	96.9	99.6	≤.001
Others	1.7	3.1	0.4	≤.001
Household size				
0–4	47.3	53.2	47.7	.70
5 or more	52.7	46.8	52.3	.70
No. of living children				
0	1.2	0.6	1.7	.02
1	35.3	33.7	36.9	.14
2	28.3	30.9	25.6	.01
3 or more	35.2	34.8	35.8	.67
Wealth quintile				
Q1, Poorest	20.9	18.5	23.2	.01
Q2	20.4	18.6	22.1	.05
Q3	20.3	22.5	18.1	.02
Q4	19.7	23.4	16.1	≤.001
Q5, Richest	18.7	17.0	20.5	.05

a short-acting modern contraceptive (21.3%). Among modern methods, oral pills was the most commonly used, followed by injectables and then condoms. The use of LARCs in the sample was quite low, at 1.7%, and use of permanent methods, even lower, at 0.8%. Among LARCs, IUD use was higher than use of implants. At baseline, no overall significant variation was found in the use of contraceptives between non-voucher areas and areas where the voucher program was about to begin (Table 2).

In general, the use of short-acting modern methods was uniformly distributed across age groups (Table 3). LARC use, too, although at lower levels, was uniformly distributed across age groups. LARCs were most popular among women of the highest socioeconomic status or with the highest level of education. Permanent methods were most common among the poorest and least educated women and among women with 3 or more children. These patterns mirror those seen in the national Demographic and Health Survey figures for 2010. Overall, these numbers suggest that LARCs may be more

accessible and more utilized by women of higher socioeconomic status due to their greater ability to pay and better access to information.

Results of Difference-in-Differences Analysis and Multivariate Analyses

In Table 4, we present results of the DID analysis of the use of modern contraceptives in voucher and non-voucher areas. The unadjusted (crude) DID estimates are presented, as well as the associated statistical significance levels for the adjusted DID estimate after controlling for covariates (age, religion, education, occupation, household size, number of living children, participation in other social protection schemes, and socioeconomic status). When contraceptive use is examined by simply disaggregating traditional methods, modern methods, and non-use, no statistically significant DID estimates are observed (Table 4).

Modern contraceptive use increased in both intervention and control areas—in intervention areas, from 22.4% to 31.6%, and in control areas, from 25.2% to 31.0% (Table 4). After disaggregating

TABLE 2. Contraceptive Use (%) by Type of Contraceptive Method Among Married Women of Reproductive Age, Baseline Survey, 2011

Method	Full Sample (N=1,936)	Voucher Areas (N=961)	Non-Voucher Areas (N=975)	P Value
None	71.8	73.7	70.0	.07
Traditional	4.4	3.9	4.8	.35
Modern	23.8	22.4	25.2	.14
Short-acting methods	21.3	20.6	22.1	.44
Pill/emergency pill	11.7	10.6	12.8	.13
Male/female condoms	1.0	0.7	1.2	.26
Injectables	8.6	9.3	8.1	.32
LARCs	1.7	1.4	1.9	.30
IUD	1.1	0.4	1.6	.008
Implants	0.6	1.0	0.3	.08
Permanent methods	0.8	0.4	1.2	.05

Abbreviation: IUD, intrauterine device; LARCs, long-acting reversible contraceptives.

Note the nested nature of the table for the modern method category: the percentages for the pill, condoms, and injectables sum to the short-acting methods percentage while the percentages for the IUD and implants sum to the LARCs percentage. Similarly, the percentages for short-acting methods, LARCs, and permanent methods sum to the modern methods percentage.

TABLE 3. Current Use of Contraceptive Methods (%) by Sociodemographic Characteristics Among Married Women of Reproductive Age, Baseline Survey, 2011

	Sample Size (n)	Type of Method					
		None	Traditional	Modern	Short-Acting	LARCs	PMs
Age group, years							
15–19	47	76.6	0.0	23.4	21.3	2.1	0.0
20–24	428	75.5	2.6	21.9	21.0	0.9	0.0
25–29	615	71.7	4.6	23.7	21.3	1.8	0.6
30–34	453	69.5	4.4	26.1	22.3	2.2	1.6
35–39	229	69.9	6.6	23.5	20.5	1.3	1.7
40–45	164	70.1	6.7	23.2	20.8	1.8	0.6
Education level							
No school	336	72.0	4.2	23.8	21.1	0.9	1.8
Primary	1,139	70.3	3.5	26.2	23.5	1.9	0.8
Secondary	392	75.3	6.9	17.8	16.1	1.5	0.2
High school or higher	69	75.4	5.8	18.8	15.9	2.9	0.0
Wealth quintile							
Q1, poorest	404	67.1	3.7	29.2	26.7	0.8	1.7
Q2	395	71.1	3.8	25.1	22.5	2.0	0.6
Q3	392	70.2	3.8	26.0	23.2	1.8	1.0
Q4	382	73.0	5.5	21.5	19.6	1.6	0.3
Q5, richest	363	78.2	5.2	16.6	13.8	2.2	0.6
No. of living children							
0	23	91.3	0.0	8.7	8.7	0.0	0.0
1	684	78.1	3.7	18.2	17.8	0.4	0.0
2	547	68.6	4.0	27.4	24.5	2.7	0.2
3 or more	682	67.5	5.6	27.0	22.7	2.1	2.2

Abbreviations: LARCs, long-acting reversible contraceptives; PMs, permanent methods.

use of modern contraceptives to examine impacts of the family planning voucher on LARC use, we found that LARC use increased significantly between baseline and endline in both intervention (from 1.4% to 6.7%) and control (from 1.9% to 3.5%) groups (Table 4). More importantly, the increase in the percentage of women using LARCs in voucher areas was

greater than the increase in control areas, with an estimated difference in LARC usage rates of 3.7 percentage points ($P=.002$). The statistically significant result on a balanced sample suggests that access to the family planning voucher was associated with a net increase of LARC use among married women. A significant difference was seen also in the increase in

TABLE 4. Difference-in-Differences Analysis: Change in Use of Contraceptive Methods (%) Between Baseline (2011) and Endline (2013) in Voucher and Non-Voucher Areas

Method	Voucher Areas		Non-Voucher Areas		DID	
	Baseline (n=961)	Endline (n=993)	Baseline (n=975)	Endline (n=993)	Crude (Unadjusted)	P Value (of Adjusted DID Estimate ^a)
None	73.7	63.5	70.0	62.7	−2.9	.41
Traditional	3.9	4.9	4.8	6.3	−0.5	.79
Modern	22.4	31.6	25.2	31.0	3.4	.32
Short-acting modern	20.6	23.8	22.1	26.7	−1.4	.47
LARCs	1.4	6.7	1.9	3.5	3.7	.002
Permanent methods	0.4	1.1	1.2	0.8	1.1	.05

Abbreviations: DID, difference-in-differences; LARCs, long-acting reversible contraceptives.

^a We opted not to present the adjusted DID point estimates with these associated *P* values because the adjusted estimates do not have an intuitive interpretation as the crude estimates do, which are the arithmetic difference-in-differences. Adjusted DID point estimates are available upon request.

Use of LARCs increased more in the voucher areas than in the comparison areas.

At endline, women living in voucher areas had 3.3 times greater odds than women in non-voucher areas of using a LARC or a permanent method than women in the control groups or in the pre-intervention voucher group.

use of permanent methods (DID=1.1 percentage point, *P*=.05).

In Table 5, multivariate analyses of pooled baseline and endline samples present DID estimates after controlling for sociodemographic characteristics. In the logistic regression analysis, the odds ratio for the interaction term between time period (baseline=0, endline=1) and area (control=0, intervention [voucher]=1) is the effect measure. Adjusted odds ratios from this analysis suggest that, among all married women surveyed, those residing in voucher areas in the intervention period had 1.35 times greater odds of using a modern contraceptive (95% confidence interval [CI], 1.00 to 1.81) than women in control areas or women in the intervention areas during the pre-intervention period (*P*=.05).

More strikingly, among married women currently using contraceptives, those living in voucher areas in the post-intervention period had 3.3 times greater odds of using a LARC or a permanent method (95% CI, 1.54 to 7.15; *P*=.002) than women in the control groups or in the pre-intervention treatment group. (LARCs and permanent methods are grouped together for ease of comparison in these analyses.) The statistically significant result seen for LARCs

and permanent methods increases our confidence in the DID results presented in Table 4 and points to the significant influence of the family planning voucher on the uptake of long-acting methods among married women in Cambodia.

LARC Use Before and After Intervention

In disaggregated analysis of LARC use, we found that the greater increases in LARC uptake in voucher areas than in control areas took place across age groups, educational status, occupational groups, and socioeconomic levels (Table 6). The greatest increases were seen among women with the lowest levels of education (no school, from 1.1% at baseline to 11.8% at endline) and in the lowest socioeconomic group (poorest quintile, from 1.1% to 8.8%). These results suggest that the family planning voucher increased use of LARCs most among the poorest and most vulnerable women, the intended beneficiaries of the intervention. Another key finding is that large increases in the use of LARCs occurred among women with 3 or more children (from 1.8% to 11.0%), suggesting that a provider bias existed and/or that LARCs may be more appealing to women who have already reached their desired family size.

TABLE 5. Adjusted Odds Ratios From the Logistic Regression Models Predicting Use of Modern Contraceptives, LARCs, and Permanent Methods

Covariates	Use of Modern Methods ^a AOR (95% CI)	P Value	Use of LARCs or PMs ^b AOR (95% CI)	P Value
Area (0=non-voucher; 1=voucher)	0.73 (0.59, 0.91)	.005	0.55 (0.29, 1.05)	.07
Year (0=baseline; 1=endline)	1.24 (1.00, 1.53)	.05	1.11 (0.66, 1.88)	.69
Interaction (area*year)	1.35 (1.00, 1.81)	.05	3.32 (1.54, 7.15)	.002
Age group, years (ref: 15–19)				
20–24	0.87 (0.52, 1.45)	.59	2.25 (0.28, 18.02)	.44
25–29	0.71 (0.42, 1.19)	.19	2.29 (0.28, 18.44)	.44
30–34	0.73 (0.43, 1.24)	.24	1.85 (0.23, 15.22)	.57
35–39	0.70 (0.40, 1.23)	.22	2.16 (0.25, 18.29)	.48
40–45	0.78 (0.43, 1.40)	.41	1.37 (0.16, 12.00)	.78
Education level (ref: no school)				
Primary	1.23 (1.00, 1.52)	.05	0.60 (0.39, 0.95)	.03
Secondary	0.92 (0.71, 1.20)	.54	0.87 (0.49, 1.52)	.62
High school or higher	0.74 (0.48, 1.14)	.17	1.25 (0.50, 3.11)	.64
Employment status (ref: unemployed)				
Agriculture	1.16 (0.96, 1.40)	.13	0.88 (0.57, 1.34)	.54
Informal	1.34 (1.01, 1.78)	.04	1.22 (0.66, 2.26)	.52
Formal	1.49 (1.16, 1.90)	≤.001	1.04 (0.60, 1.80)	.82
No. of living children (ref: 3 or more)				
0	0.08 (0.02, 0.32)	≤.001	No observation	
1	0.54 (0.43, 0.68)	≤.001	0.23 (0.13, 0.43)	≤.001
2	0.96 (0.79, 1.16)	.65	0.51 (0.33, 0.78)	.002
Social health protection (ref: no social health protection program)				
Health Equity Fund	1.87 (1.54, 2.26)	≤.001	1.07 (0.68, 1.69)	.77
Any other social health protection program	1.47 (1.19, 1.82)	≤.001	1.46 (0.91, 2.34)	.11
Wealth quintile (ref: Q1, poorest)				
Q2	0.94 (0.75, 1.17)	.56	0.99 (0.60, 1.65)	.98
Q3	0.98 (0.78, 1.22)	.85	1.16 (0.70, 1.93)	.55
Q4	0.90 (0.71, 1.13)	.35	0.98 (0.57, 1.71)	.95
Q5, richest	0.79 (0.62, 1.02)	.07	1.50 (0.83, 2.74)	.18

TABLE 5 (continued).

Covariates	Use of Modern Methods ^a		Use of LARCs or PMs ^b	
	AOR (95% CI)	P Value	AOR (95% CI)	P Value
Religion (ref: other)	0.65 (0.37, 1.11)	.12	0.61 (0.22, 1.67)	.34
Constant	0.05 (0.01, 0.24)	≤.001	0.20 (0.02, 2.19)	.19

Abbreviations: AOR, adjusted odds ratio; CI, confidence interval; LARCs, long-acting reversible contraceptives; PMs, permanent methods.
^aAmong all married women in the sample.
^bAmong those who used any type of contraceptive method in the last 12 months; LARCs and permanent methods grouped together for simplicity of interpretation.

The voucher program in Cambodia targets financial and information barriers that disproportionately impede poor and marginalized women from making informed contraceptive choices.

DISCUSSION

These results demonstrate the ability of a family planning voucher program to increase uptake of long-acting methods among poor women in Cambodia, contribute to the body of evidence on the impact of vouchers on LARC uptake. The impact seen on LARC uptake in this study shows the potential for demand-side strategies such as vouchers to complement supply-side and policy-level efforts to increase voluntary uptake and expand choice among poor and vulnerable women to include effective long-acting methods. This is particularly important since access to family planning is among the most inequitably distributed of reproductive health indicators in most low- and middle-income countries.

The demonstrated positive effect of the Cambodian family planning voucher program is indicative of an effective, comprehensive, and targeted implementation strategy. The voucher program in Cambodia targets not only financial barriers but also informational barriers that disproportionately impede poor and marginalized women from making informed contraceptive choices. The largest gains in LARC uptake occurred among women from the lowest socioeconomic strata. This suggests that vouchers may be an effective strategy for giving access to LARCs to women who might be unable to obtain the methods they want without the help of a voucher. For poor women in Cambodia, initial cost appears to be a barrier to the choice of LARCs and permanent methods—a barrier that vouchers can lower.

Limitations

There are limitations to this study. Assessment of current contraceptive use measured in cross-sectional surveys has limited ability to deal with method discontinuation and switching, particularly for short-acting methods. This limitation may be less problematic for LARCs, however, which have lower rates of discontinuation. Additionally, although our study attempted to address confounding influences from observed covariates through the quasi-experimental design, there is a possibility that, despite a stringent matching design to generate balanced pre-intervention samples, spurious associations due to unobserved confounders could be present. These confounders could include contamination or exposure to other non-public social health protection or other nationwide system improvements that resulted in better supply chain management and improved referral systems and execution of programs if they were not uniform between control and intervention groups at baseline. We did not collect information on other demand promotion programs that may have been carried out outside the public sector. Lastly, it is not possible to disaggregate the effects of the vouchers themselves and the voucher-associated promotion activities. Moreover, the execution of the intervention may have had a positive impact on the outcome over and above the voucher program itself. While some activities and attention occurred in both the voucher and non-voucher areas, the various activities such as training, supervision, and other attention from the research team to implement the voucher intervention may have contributed to improving service delivery and the outcome.

TABLE 6. Changes in Use of LARCs (%) Between Baseline (2011) and Endline (2013) by Selected Characteristics

	Voucher Areas		Non-Voucher Areas	
	Baseline (n=961)	Endline (n=993)	Baseline (n=975)	Endline (n=993)
All married women	1.4	6.7	1.9	3.5
Age group, years				
15–19	0.0	0.0	4.3	0.0
20–24	5.4	4.7	0.8	2.8
25–29	6.7	6.3	1.9	4.1
30–34	7.0	7.0	2.3	3.3
35–39	9.3	9.1	3.1	3.6
40–45	8.8	8.6	2.1	6.4
Education level				
No school	1.1	11.8	0.6	4.8
Primary	0.9	6.0	2.8	2.9
Secondary	2.2	5.6	0.9	4.5
High school or higher	5.3	5.8	0.0	3.2
Wealth quintile				
Q1, poorest	1.1	8.8	0.4	3.1
Q2	1.7	7.9	2.3	3.4
Q3	0.9	5.1	2.8	4.3
Q4	0.4	6.5	3.2	2.9
Q5, richest	3.0	5.1	1.5	3.9
No. of living children				
0	0.0	0.0	0.0	0.0
1	0.3	3.3	0.6	1.8
2	2.0	7.3	3.6	4.1
3 or more	1.8	11.0	2.3	5.5

Abbreviation: LARCs, long-acting reversible contraceptives.

CONCLUSION

Despite these limitations, the impacts observed in this study of family planning vouchers are significant for two key reasons. First, this is the first published study of the Cambodian family planning voucher strategy, and it finds that

vouchers increased LARC uptake among important beneficiary groups. Second, and more importantly, these results lay the groundwork for rigorously generating evidence on demand-side strategies aimed at improving the capacity of poor and vulnerable women in low- and middle-income countries to make and carry out

informed decisions about contraceptive use. Such strategies should expand women's choice and agency, in line with a rights-based understanding of contraceptive service delivery. This study also has generated lessons for national family planning programs that seek to expand contraceptive choice and improve equity in access to effective long-acting methods. The findings may serve as an impetus to integrate strategies such as vouchers into larger national family planning initiatives.

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ORIGINAL ARTICLE

The Mayer Hashi Large-Scale Program to Increase Use of Long-Acting Reversible Contraceptives and Permanent Methods in Bangladesh: Explaining the Disappointing Results. An Outcome and Process Evaluation

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The Mayer Hashi program resulted in a modest increase in use of long-acting reversible contraceptives and permanent methods in Bangladesh, but less of an increase than in comparison nonprogram districts, which appears to have been the result of weaknesses in the health system environment in the program districts. Addressing system issues to support providers beyond training might have led to better results.

ABSTRACT

Background: Bangladesh has achieved a low total fertility rate of 2.3. Two-thirds of currently married women of reproductive age (CMWRA) want to limit fertility, and many women achieve their desired fertility before age 30. The incidence of unintended pregnancy and pregnancy termination is high, however. Long-acting reversible contraceptives (LARCs), consisting of the intrauterine device and implant, and permanent methods (PM), including female sterilization and vasectomy, offer several advantages in this situation, but only 8% of CMWRA or 13% of method users use these methods.

Program: The Mayer Hashi (MH) program (2009–2013) aimed to improve access to and the quality of LARC/PM services in 21 of the 64 districts in Bangladesh. It was grounded in the SEED (supply–enabling environment–demand) Programming Model. Supply improvements addressed provider knowledge and skills, system strengthening, and logistics. Creating an enabling environment involved holding workshops with local and community leaders, including religious leaders, to encourage them to help promote demand for LARCs and PMs and overcome cultural barriers. Demand promotion encompassed training of providers in counseling, distribution of behavior change communication materials in the community and in facilities, and community mobilization.

Methods: We selected 6 MH program districts and 3 nonprogram districts to evaluate the program. We used a before–after and intervention–comparison design to measure the changes in key contraceptive behavior outcomes, and we used a difference-in-differences (DID) specification with comparison to the nonprogram districts to capture the impact of the program. In addition to the outcome evaluation, we considered intermediate indicators that measured the processes through which the interventions were expected to affect the use of LARCs and PMs.

Results: The use of LARCs/PMs among CMWRA increased between 2010 and 2013 in both program (from 5.3% to 7.5%) and nonprogram (from 5.0% to 8.9%) districts, but the rate of change was higher in the nonprogram districts. Client–provider interaction and exposure to LARCs/PMs were lower in the program than nonprogram districts, and the MH program districts had higher vacancies of key providers than the nonprogram areas, both indications of a more difficult health system environment.

Conclusion: The weaknesses in the health system in the MH districts apparently undermined the effectiveness of the program. More attention to system weaknesses, such as additional supportive supervision for providers, might have improved the outcome.

INTRODUCTION

Long-acting and permanent methods of contraception are components of a balanced method mix. Long-acting reversible contraceptives (LARCs)

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comprise the intrauterine device (IUD) and implants, while permanent methods (PMs) include female sterilization and vasectomy. LARCs offer women and couples who wish to delay, space, or limit childbearing a number of advantages: they are highly effective, require little action on the part of the user, are suitable for a wide range of women, and are cost-effective over the long term.^{1,2} Discontinuation and failure rates are typically low,³ and LARCs have the potential to reduce unintended pregnancy and the associated risks of unsafe abortion and maternal morbidity and mortality.^{2,4} There is growing evidence that many women and couples prefer LARCs when they are available and affordable.⁵

Bangladesh has achieved a low level of fertility (total fertility rate of 2.3) and a contraceptive prevalence rate (CPR) of 62% among currently married women of reproductive age (CMWRA), increasing from about 20% in the early 1980s.⁶ Increased use of oral contraceptive pills and injectables largely accounts for the increase in CPR. Currently, only 13% of users in Bangladesh rely on LARCs and PMs compared with 74% relying on pills, injectables, and condoms.⁶ Another 13% of users rely on traditional methods. Pill use increased dramatically from 3% in the 1980s to 27% in 2014, while use of injectables increased from below 5% in the early 1990s to 12% in 2014.⁶ In contrast, prevalence of PMs increased from 7% in the early 1980s to around 10% in the early 1990s, but has declined to 6% in the 2000s. Among LARCs and PMs, tubectomy is the dominant method. IUD use is low, currently at 0.6% of CMWRA, and the current prevalence of implants is 1.7%. The number of women choosing PMs decreased substantially beginning in the early 1990s, when the number of women relying on PMs who phased out of the reproductive ages annually was larger than the number of new acceptors, which led to a decrease in prevalence.

However, desire for fertility limitation has increased since the 1990s. For example, in the early 1980s, about half of mothers with 2 children wanted to have additional children.⁷ In 2011, only 20% wanted to have additional children.⁸ Among all CMWRA, 58% wanted to limit childbearing in 1993/1994, increasing to 65% in 2011,⁹ and most women achieve their desired fertility before age 30.⁸ The high reliance on short-acting and traditional methods exposes women to increased risks of method failure¹⁰ and early method discontinuation¹¹ during the 15 to 20 years when they could become pregnant after they achieve

their desired family size. A high proportion of mothers (30%) report that their last birth was unintended.⁸ Singh et al. reported there were 1.3 million menstrual regulations and abortions in 2010 in Bangladesh, yielding a pregnancy termination rate of 36 per 1,000 women ages 15–44 years old.¹²

The government of Bangladesh, along with NGOs, have encouraged efforts to increase use of LARCs and PMs to meet the needs of couples for sustained contraception. One example of these efforts is the Mayer Hashi (MH) program, funded by the United States Agency for International Development (USAID) from 2009 to 2013, to increase access to LARCs and PMs and improve the quality of services. We evaluated the impact of this program on use of LARCs and PMs and explored the pathways through which the program aimed to influence use of these methods to interpret the findings of the impact analysis.

PROGRAM DESCRIPTION

Family Planning Service Delivery in Bangladesh

Both the public and private sector deliver family planning services in Bangladesh. Most of the LARCs and PMs are provided by the public sector, whereas short-acting contraceptives are provided by both the public and private sector. In 2014, 92% of IUD users, 93% of implant users, 85% of vasectomy users, and 69% of female sterilization users obtained their method from the public sector. This compares with 42% of pill users, 61% of injectable users, and 15% of condom users.⁶ The Directorate General of Family Planning (DGFP) of the Ministry of Health and Family Welfare (MOHFW) is the public-sector agency that delivers both LARCs and PMs and short-acting contraceptives. Pills, condoms, and injectables are available at pharmacies, and pills and condoms are also available in convenience stores.

The DGFP delivers family planning services both in communities and health care facilities. Female family welfare assistants (FWAs) are responsible for visiting homes every 2 months to provide information and counseling and to supply pills and condoms.¹³ The family welfare visitor (FWV) provides injectables and IUDs at the family welfare center and satellite clinics in communities. In the past, only FWVs provided injectables, but FWAs have started to provide subsequent doses of injectables (the first dose is given by the FWV from a facility). There is

Bangladesh has achieved a low total fertility rate of 2.3 and a contraceptive prevalence rate of 62%.

1 family welfare center and several satellite clinics in each union (the lowest-level administrative area) staffed by 1 FWV. The medical officer–maternal and child health (MO–MCH) provides implants, tubectomy, and no-scalpel vasectomy (NSV) from the *upazila* (subdistrict) health complex at the subdistrict headquarters. The MO–MCH or equivalent personnel also provide LARCs and PMs at other tertiary facilities throughout the country. The *upazila* family planning officer (UFPO) supervises community family planning activities. NGOs also offer family planning services at the community and facility levels in coordination with the DGFP. All service providers (FWA, FWV, and MO–MCH) receive training prior to beginning their jobs.

The Mayer Hashi Program

The Mayer Hashi (MH) program operated in 21 of the 64 districts in Bangladesh during the period 2009–2013.^{14–16} The 21 selected districts had low use of family planning and other health care services. Seventeen of the 21 MH districts are in the eastern region of the country (Chittagong and Sylhet divisions) where people are more conservative and have more traditional beliefs compared with other regions. Family planning and other health services also tend to be weaker in this region.

The MH interventions were grounded in the SEED (supply-enabling environment-demand) Programming Model.^{17,18} Bangladesh has well-established family planning services, and the MH interventions were added to the regular LARC/PM activities of the family planning program. The main components of the interventions are summarized in the [Box](#).

Supplies

Supply improvement includes enhancement of provider knowledge and skills, systems strengthening, and logistics management. In addition to training DGFP providers and managers, the MH program trained resident medical officers of the Directorate General of Health Services, on LARCs and PMs. The Directorate General of Health Services is an MOHFW agency that provides preventive and curative health services. The MH program trained its resident medical officers to support expansion of LARC and PM services beyond the DGFP. The program also trained obstetrician/gynecologists (OB/GYNs)—the Directorate General of Health Services personnel who provide delivery services including cesarean

delivery (available in some *upazilas*)—and the program began training private providers on LARCs and PMs.

The provider training focused on enhancing clinical knowledge and skills. FWVs received a 3-day clinical training on the IUD. The training specialists assessed the theoretical knowledge and reported technical skills of FWVs on the IUD prior to the training. The training was given in 2 stages: knowledge improvement and insertion practice. The trainers used discussions to address the knowledge gaps identified in the pre-training assessment. They demonstrated IUD insertion, and then the trainees practiced among clients inserting an IUD under the observation of the trainers, who provided immediate feedback. The MOs–MCH, resident medical officers, and OB/GYNs were given a 3-day clinical training on implant insertion, tubectomy, and NSV procedures following the same model as the FWV IUD training. The FWAs who counsel couples on contraceptive methods were trained on theoretical aspects of LARCs and PMs, such as the appropriateness of each method for a particular client situation, advantages and disadvantages of LARCs and PMs, and potential side effects.

To strengthen the systems supporting LARCs and PMs, managers were provided with a day-long LARC and PM orientation. The orientation covered the importance of LARCs and PMs in the family planning service delivery system, enhancing demand for LARCs and PMs, and improving systems to better support LARC and PM use. Throughout the program, managers received help in projecting their supply needs and ensuring a secure supply of equipment and commodities for LARCs and PMs.

Enabling Environment

Creating an enabling environment included conducting workshops with local and community leaders, including religious leaders, to encourage their participation in demand promotion for LARCs and PMs and to help overcome cultural barriers. The program published *Islam and Family Planning*, a book in Bangla, and circulated it to religious leaders. The book explains that Islam supports birth spacing and describes the available birth-spacing methods, including LARCs. At the policy level, the MH program advocated policies to support expansion of LARC and PM services through the Directorate General of Health Services and the private sector. The technical assistance

The Mayer Hashi program operated in 21 of the 64 districts in Bangladesh during the period 2009–2013.

BOX. Mayer Hashi Interventions

The Mayer Hashi program was grounded in the SEED Programming Model, which encompasses Supply, Enabling Environment, and Demand interventions.

Supply Improvement

Enhancement of knowledge and skills of providers through training and refresher training of:

- FWAs
- FWVs (3-day clinical training on providing the IUD)
- MOs–MCH (3-day clinical training on implant insertion, female sterilization, and no-scalpel vasectomy)

Expansion of services through the DGHS through training of:

- RMOs and OB/GYNs (3-day clinical training on implant insertion, female sterilization, and no-scalpel vasectomy)

System strengthening:

- Orientation of program managers (UFPOs and UHFPOs) (1-day training on LARCs and PMs)

Logistics projection and management (also impacts the enabling environment):

- Technical assistance for program managers

Facilitation of policy formulation and policy change (also impacts the enabling environment):

- LARCs and PMs delivered through the DGHS
- LARCs and PMs available through the private sector

Enabling Environment

Advocacy:

- Orientation of community leaders and influential persons

Demand Creation

Community mobilization:

- Home visits by FWAs
- Courtyard meetings
- Cultural programs (e.g., street drama, music)
- Advocacy by local leaders and influential persons

Distribution of BCC materials (billboards, posters, and leaflets):

- In communities
- At facilities

Enhancement of provider skills:

- Training all providers in interpersonal communication

Abbreviations: BCC, behavior change communication; DGHS; Directorate General of Health Services; FWAs, family welfare assistants; FWVs, family welfare visitors; LARCs, long-acting reversible contraceptives; MOs–MCH; medical officers–maternal and child health; OB/GYNs, obstetrician/gynecologists; PMs, permanent methods; RMOs, resident medical officers; SEED, supply–enabling environment–demand; UFPO, *upazila* (subdistrict) family planning officer; UHFPO, *upazila* health and family planning officer.

provided to managers to support planning for supplies described above also aimed to contribute to strengthening the enabling environment for LARCs and PMs by improving logistics systems.

Demand Promotion

Demand promotion encompassed training of providers in interpersonal communication, distributing behavior change communication (BCC) materials at the community and facility levels, and community mobilization. The program trained community- and facility-based providers on interpersonal communication techniques in a 1.5-day training session. The primary audience for the interpersonal communication training were the FWAs who counsel clients for LARCs and PMs at the community level, as well as other providers (FWVs, MOs–MCH). The providers were given BCC materials (flip charts and leaflets) on LARCs and PMs for client counseling. Leaflets on contraceptive methods were also produced for distribution to current and potential clients. Posters and billboards on LARCs and PMs were produced and displayed in facilities and communities.

FWAs organized community mobilization for LARCs and PMs through home visits and courtyard meetings. The primary audience for community mobilization were CMWRA. Street drama and music programs publicized LARCs and PMs, and local leaders and influential persons spoke to communities about LARCs and PMs.

The MH team routinely monitored the program by examining quarterly trends in LARC/PM acceptance in the MH intervention districts. However, there was no systematic plan for following up with providers after the training, either by the MH team or by the DGFP, to see how the training affected practice. USAID sponsored a midterm performance evaluation of the MH program that included comparing project achievements with expected results in intervention areas and interviewing stakeholders about program implementation.¹⁵

To measure impact on use of LARCs/PMs, we used a before–after and intervention–comparison design, and a difference-in-differences (DID) specification.

METHODS: EVALUATION DESIGN

We used 2 approaches for the evaluation. To measure the impact of the MH interventions on use of LARCs and PMs, we used a before–after and intervention–comparison design. This design measures the changes in the key contraceptive behavior outcomes in the MH intervention areas relative to those in the comparison areas.¹⁶ We used a difference-in-differences (DID) specification to capture the impact of the program.¹⁹ The

DID approach assumes that the change in the outcomes in the comparison group provides a good estimate of the change that would have occurred in the intervention group in the absence of the program.^{20,21} Under these assumptions, if the improvements in outcomes are significantly greater in the program areas compared with the comparison (nonprogram) areas, then we can conclude that improvements in outcomes were caused by the program.

To explore the pathways through which the MH interventions aimed to change contraceptive behaviors, we used an endline-only intervention–comparison design. In this design, we considered a series of intermediate indicators that measure the processes through which we expected the interventions to affect use of LARCs and PMs. This analysis is primarily descriptive.

Data

USAID requested the impact evaluation toward the end of the MH program. Therefore, it was not possible to collect pre-program data designed for the impact evaluation. This is a common problem in evaluation in practice. To overcome this problem, we used data from the 2010 Bangladesh Maternal Mortality Survey (BMMS 2010).²² The BMMS 2010 was a national survey conducted during January–August 2010. Although the MH program formally began in October 2009, implementation did not begin until March 2010 and was in a sufficiently preliminary state through the end of BMMS 2010 fieldwork that it was unlikely to have an impact on population-level use of LARCs or PMs before that time.

To form program and comparison samples for the evaluation, we randomly selected 6 (of 21) program districts (Barisal, Patuakhali, Comilla, Cox's Bazar, Moulvibazar, Sunamganj), and we selected 3 nonprogram districts (Kishoreganj, Mymensingh, Narsingdi) to match the program districts in initial LARC and PM prevalence.¹⁶ The nonprogram districts are from a different administrative division, but they are adjacent to some of the MH program districts, separated by a river. There is a cluster of districts in Dhaka, Chittagong, and Sylhet divisions that share a common characteristic of low performance in family planning and maternal and child health.¹⁶ The 3 comparison districts are in that cluster. Program districts received MH interventions to improve accessibility to and quality of LARC and PM services in addition to regular DGFP services, while nonprogram

TABLE 1. Sample Sizes and Response Rates for the Household and Provider Surveys

Survey and Respondents	Program Districts ^a		Nonprogram Districts ^b	
	Number	Response Rate (%)	Number	Response Rate (%)
Household survey of CMWRA				
Baseline – 2010 (BMMS)	22,145	93 ^c	9,893	93 ^c
Endline – 2013 (MH Program)	3,894	95 ^d	1,970	93 ^d
Provider survey, 2013				
FWAs	118	100	62	100
FWVs	118	98	62	98
UFPOs	59	71	31	83
MOs–MCH	59	32	31	61
RMOs	53	79	28	79
OB/GYNs	53	34	28	36
<i>All providers</i>	<i>460</i>	<i>77</i>	<i>242</i>	<i>82</i>

Abbreviations: BMMS, Bangladesh Maternal Mortality Survey; CMWRA, currently married women of reproductive age; FWAs, family welfare assistants; FWVs, family welfare visitors; MH, Mayer Hashi; MOs–MCH, medical officers–maternal and child health; OB/GYNs, obstetrician/gynecologists; RMOs, resident medical officers; UFPOs, *upazila* (subdistrict) family planning officers.

^a Barisal, Patuakhali, Comilla, Cox's Bazaar, Moulvibazar, Sunamganj.

^b Kishoreganj, Mymensingh, Narsingdi.

^c 93% for program and nonprogram districts together.

^d 94% for program and nonprogram districts together.

districts continued to receive regular DGFP services. This design is geared toward identification of the average effect of treatment on the treated.

The baseline data came from the BMMS 2010. The sample size in BMMS 2010 for the 6 program districts was 22,145 CMWRA, and for the 3 nonprogram districts, 9,893 CMWRA (Table 1). The endline household survey was conducted during February–May 2013 in the 9 study districts. The endline survey was a population-based household survey with a multistage sampling procedure. All CMWRA ages 13–49 who were usual residents in each selected household were eligible for the interview. The response rate for selected CMWRA was 93.4%, yielding a sample of 5,864 CMWRA (3,894 in program districts and 1,970 in nonprogram districts).

Additionally, the endline data collection included a survey of 702 providers in the 9 districts (460 in program districts and 242 in nonprogram districts; Table 1). The public-sector service providers

of the 90 *upazilas* in the 6 program and 3 non-program districts were the population of interest for the provider survey. For the DGFP in an *upazila*, there is 1 MO–MCH and 1 UFPO, both of whom were included in the survey. There are 6 to 8 unions per *upazila*, and each of the unions has 1 FWV and 6 FWAs. We selected 2 unions at random per *upazila*. Within the selected union, the lone FWV and 1 randomly selected FWA were interviewed. Providers from the Directorate General of Health Services were also interviewed for each of the *upazilas*: the resident medical officer and the OB/GYN. The overall response rate of service providers was 77% in the program districts and 82% in the nonprogram districts. The response rates were low for MOs–MCH and OB/GYNs (32%–36% except for MOs–MCH in nonprogram areas, whose response rate was 61%), primarily due to high vacancy rates for these positions. The provider survey included a module on BCC products and materials available at the facilities

where the providers were interviewed. Data from providers are available only at endline.

Indicators

The outcome indicators considered in the women's data are:

- Use of LARCs and PMs
- Use of other methods

We also considered the following program exposure indicators for women:

- Client-worker contact at home
- Client-worker contact for health care at facilities
- Client-worker contact for health and family planning care at facilities
- Acceptors of temporary methods told about PMs
- Acceptors of injectables, the IUD, and implant told about method side effects
- Acceptors of injectables, the IUD, and implant told about follow-up visits
- Women who sought care from facilities who noticed messages on LARCs/PMs
- Women who heard, saw, or read messages about tubectomy
- Women who heard, saw, or read messages about NSV
- Women who heard, saw, or read messages about the IUD
- Women who heard, saw, or read messages about implants
- Women who heard, saw, or read messages about LARCs/PMs
- Women who heard, saw, or read messages about PMs

The BMMS 2010 includes only the indicators on use of LARCs/PMs and other methods, so the DID analysis is restricted to these outcomes only. Use of LARCs/PMs is the main outcome indicator that the MH program aimed to affect. The other indicators can be compared only between intervention and comparison areas at endline.

From the provider data, we considered a number of indicators related to:

- Provider training (program exposure)
- Provider knowledge and reported practice (level of adherence to pre- and post-counseling

protocols associated with LARC/PM service provision)

- Pre-procedure counseling during provision of implants
- Post-procedure counseling when providing IUDs
- Post-procedure counseling when providing tubectomy
- Information provided on method side effects
- Presence and use of BCC materials

Analysis and Modeling

To assess and contextualize program impact, we performed both bivariate and multivariate analyses. The bivariate analysis compared the indicators of interest between program and nonprogram districts and between 2010 and 2013 (when available). The multivariable analyses involved a regression model designed to assess impact. The foundation of the impact model was a DID regression specification. We implemented this specification through a multinomial logit regression model in which the dependent variable represented the choice of the contraceptive methods by CMWRA. Three categories of choice were considered: (1) no contraception, (2) LARC or PM (IUD, implant, tubectomy, or NSV), or (3) other methods (pill, injectable, condom, or traditional methods).

To implement the DID specification to capture the potential impact of the MH program on increased use of LARCs and PMs or other methods over time, we included dummy terms for whether the district was among the 6 selected for the program as well as a dummy variable indicating whether the observation came from the baseline (BMMS 2010) or follow-up (MH endline survey). We also included an interaction term between these 2 variables, which is crucial. Finally, the specification applied to the multinomial model also included selected independent variables, such as women's age, education, religion, household wealth quintile, and residential location (rural vs. urban).

We estimated the multinomial model in a fashion that recognizes the 3 sampling design features of the 2 surveys: stratification (both involved a stratified design), clustering, and sampling weights. To generate a unified weighting scheme between the 2 surveys, we normalized together the design selection probabilities for the observations

from the 2 surveys. This, combined with the dummy variable indicating the survey (BMMS 2010 or MH endline) from which the observations were drawn, should control for any structural differences between the 2 surveys.

Because the multinomial logit is a nonlinear regression model, program impact was captured through an interaction effect obtained from the estimated model. Specifically, program impact on LARC/PM use was:

$$\begin{aligned} &Pr(LARCPM = 1 | P = 1, T = 1, X) \\ &- Pr(LARCPM = 1 | P = 1, T = 0, X) \\ &- (Pr(LARCPM = 1 | P = 0, T = 1, X) \\ &- Pr(LARCPM = 1 | P = 0, T = 0, X)) \end{aligned}$$

where $Pr(LARCPM | P, T, X)$ is the predicted probability (from the fitted multinomial model) of using LARCs/PMs conditional on whether the individual resides in a program area ($P = 1$ if residing in a program area and 0 otherwise), T is an indicator for whether the observation is drawn from the baseline (BMMS 2010) or endline sample, and X are the other characteristics (e.g., age, education) for which we controlled in the multinomial regression model. Program impact was thus the difference in predicted probabilities over time in program areas minus the same in nonprogram areas. This is in line with the classic DID approach to program impact estimation. The standard error of this program impact measure was obtained via the Delta method for functions of maximum likelihood estimates.

Beyond this causal modeling, all the indicators except for the use of LARCs/PMs and other methods were compared between program and nonprogram districts only at endline. This helped us to understand the intermediate-level variables through which the program can affect LARC/PM use.

Additional Analysis

Bangladesh has regional variations in use of health and family planning services.⁸ Most of the MH districts (17 of 21) come from the eastern region, which tends to have weaker health systems and more conservative values. Therefore, we also examined selected indicators by region within program areas and included some health system indicators obtained from DGFP records. The additional health system indicators included vacancy level for MOs–MCH, vacancy level for UFPOs, client–provider contact, and client

exposure to BCC materials. Most of these health system indicators refer to 2013, either from the endline survey or from government records. The vacancy rates of MOs–MCH and UFPOs refer to the year 2013, and we assume that the rates remained the same during 2010–2013. This assumption is plausible because the DGFP did not recruit for MO–MCH or UFPO positions during this period,²³ and therefore no change in vacancy is expected. The vacancy level could be changed through transfer of personnel, but this is unlikely because of the way the system operates.

RESULTS

Background Characteristics of Sampled Women

The LARC and PM use rates in program and nonprogram samples were comparable in 2010 (i.e., at baseline). We also found that these rates were comparable for program and nonprogram districts in 2004 and 2007 for the years when data were available. Women's age, number of children, and education were comparable in program and nonprogram districts, but the nonprogram areas were more urban and had a smaller non-Muslim population than the selected program districts (Table 2). The BMMS over-sampled urban areas, while the endline MH survey did not. Estimates representative of the populations of the 9 districts considered in this study are straightforward for both surveys through the application of appropriate sampling weights.

Provider Training

In the program districts, 63% of each group of providers, MOs–MCH, FWVs, and FWAs, reported that they received training on LARCs and PMs compared with 42% of MOs–MCH, 23% of FWVs, and 15% of FWAs in the nonprogram districts. Among OB/GYNs and resident medical officers, 28% and 5%, respectively, reported receiving training on LARCs and PMs in the program districts compared with none in non-program districts.

Provider Knowledge, Skills, and Practice

Almost all the MOs–MCH and FWAs reported that they explained to clients the advantages and disadvantages of implants (Table 3). We also asked providers whether they ensured informed choice (“ensure that the client made her decision after having full information”). A higher

Most of the Mayer Hashi districts (17 of 21) were in the eastern region of Bangladesh, which tends to have weaker health systems and more conservative values.

TABLE 2. Background Characteristics of Sampled Women

	Program Districts		Nonprogram Districts	
	2010	2013	2010	2013
Age, years, mean	30.6	31.4	30.3	31.5
No. of children, mean	2.6	2.7	2.5	2.6
No education, %	31.1	28.5	36.7	32.0
Lowest 2 quintiles, %	39.9	42.3	40.7	35.6
Non-Muslim, %	13.7	10.4	5.7	3.5
Urban, %	33.5	25.6	44.3	27.0

Source of data: 2010 baseline data are from the Bangladesh Maternal Mortality Survey; 2013 endline data are from the Mayer Hashi endline survey.

percentage of MOs–MCH (37%) and FWAs (39%) than FWVs (14%) replied in the affirmative to this question for implants in the program districts. This percentage was lower (26% for MOs–MCHs, 23% for FWA, and 7% for FWVs) in the nonprogram districts.

For IUD clients, in program districts, 74% of FWVs (the only IUD provider) said they provide the follow-up card to the clients, and 54% of FWAs, who accompany the clients for the procedure and play an important role in enhancing the client–provider interaction, said they provide the follow-up card (Table 3). The follow-up card for IUD clients is an important tool for identifying method complications and their treatment, and it is expected to lead to higher continuation of the method. A higher percentage of both FWVs and FWAs reported providing the follow-up card in nonprogram districts than program districts—for FWVs, 90% vs. 74% ($P \leq .05$) and for FWAs, 73% vs. 54% ($P \leq .05$).

Similar patterns emerged for female sterilization clients. The level of reported knowledge and adherence of reported provider practice to standard protocols (e.g., the pre- and post-counseling protocols) was (a) generally low in both the program and nonprogram districts and (b) statistically similar in the 2 areas. However, the percentage of providing the follow-up card by FWVs was significantly greater ($P \leq .01$) in nonprogram districts than program districts (Table 3). Reported practice was better among higher-level providers, such as MOs–MCH, than among FWVs and FWAs in nonprogram areas, and for some indicators in program areas.

BCC Materials at Facilities

BCC materials were commonly available in the facilities in program districts: 86% to 92% of facilities had billboards, banners, or posters on LARCs/PMs in and around the facilities (Figure 1). Such BCC materials were also commonly available in nonprogram district facilities, but less so (74% to 82% of facilities). Just over one-half of the program district facilities had a recognizable place where clients could see leaflets and booklets on LARCs/PMs, compared with only 2% in the nonprogram districts. In 88% of facilities in program districts, the providers had job aids to provide information to clients and to counsel clients on LARCs/PMs, compared with 77% in nonprogram districts ($P \leq .05$).

Client–Provider Contact

In 2013, 13% of women interviewed in the household survey reported they were visited by family planning workers in the last 3 months in program districts, compared with 23% in nonprogram districts (Table 4). The level of client–worker contact was low in both types of districts, and it is significantly lower ($P \leq .001$) in the program districts than nonprogram districts. The CMWRA also had significantly higher contacts with service providers at facilities in nonprogram districts than in program districts.

Information Through Service Providers or Facilities

Quality of care of family planning services can be enhanced if contraceptive clients are told

TABLE 3. Provider Practice (%) at Endline, Mayer Hashi Provider Survey, 2013

	FWAs		FWVs		MOs–MCH	
	Program (n = 118)	Nonprogram (n = 62)	Program (n = 116)	Nonprogram (n = 61)	Program (n = 19)	Nonprogram (n = 19)
Pre-counseling for implant clients						
Explain advantages and disadvantages of implants	97	98	31	23	95	100
Ensure informed choice	39	23	14	7	37	26
Mention probable side effects of implants						
Amenorrhea	64	81	22	20	68	100
Spotting	47	58	22	11	74	95
Post-counseling for IUD clients						
Provide the follow-up card	54	73	74	90	58	95
Determine that clients understand key counseling points	31	8	9	10	21	16
Post-counseling for female sterilization clients						
Provide the follow-up card	53	68	66	87	58	95
Determine that clients understand key counseling points	9	3	8	15	21	26

Abbreviations: FWAs, family welfare assistants; FWVs, family welfare visitors; IUD, intrauterine device; MOs–MCH, medical officers–maternal and child health.

about method side effects, are reminded about follow-up visits, and are told about other method options.²⁴ The percentages were less than 50% for all indicators related to these aspects of quality of care, and most of the differences between program and nonprogram districts in 2013 were not significant (Table 4). For example, only 40% and 33% of temporary method acceptors were told about permanent methods in program and nonprogram districts, respectively. Further, 38% and 49% of injectable, implant, and IUD acceptors reported they were told about method side effects in the program and nonprogram districts, respectively. Only 31% and 48% of injectable, implant and IUD acceptors were reminded about follow-up visits in program and nonprogram districts, respectively, and the difference between program and nonprogram districts was significant.

Exposure to BCC Materials on LARCs/PMs

In the program districts, 15% of women reported that they read, heard, or saw messages on the

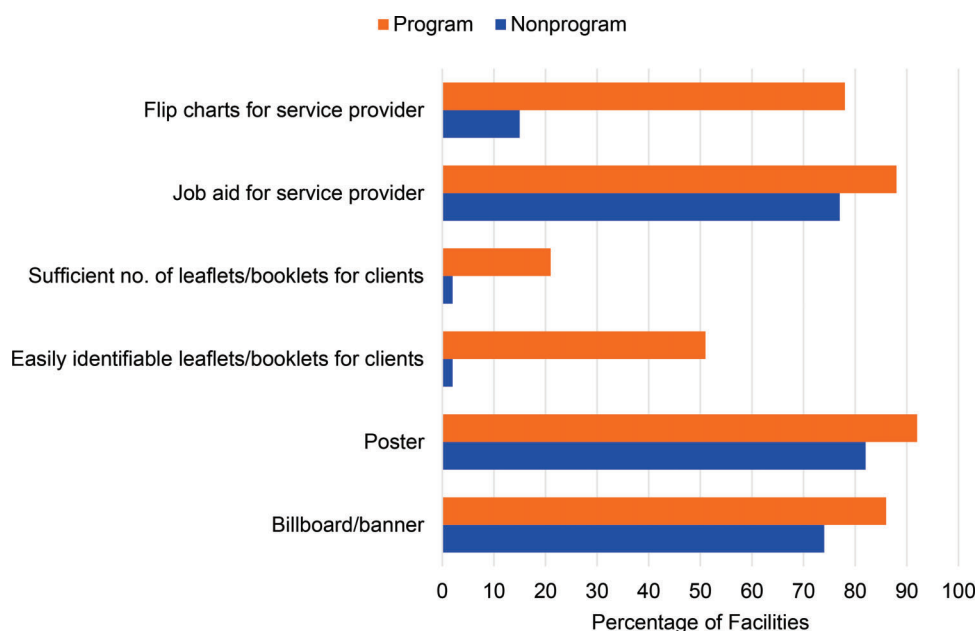
IUD in the 3 months before the survey, 22% on implants, 29% on tubectomy, and 17% on NSV (Table 4). Women in nonprogram districts were significantly more likely to recall hearing, seeing, or reading messages on all LARCs and PMs except NSV.

LARC/PM and Other Method Use

Use of LARCs/PMs among CMWRA increased between 2010 and 2013 in both program (from 5.3% to 7.5%) and nonprogram (from 5.0% to 8.9%) districts, but the increase was significantly lower in program than nonprogram districts (Figure 2). Table 5 compares the method-specific rates between program and nonprogram districts and between 2010 (baseline) and 2013 (endline). Among the LARCs/PMs, tubectomy was the most commonly used method at baseline, used by over 3% of CMWRA in 2010. Use of other LARCs/PMs was between 0.4% and 0.8% at baseline. There was an increase in the use of each method between 2010 and 2013 in program and nonprogram

Use of LARCs/PMs increased between 2010 and 2013 in both program and nonprogram districts, but the increase was significantly lower in program districts.

FIGURE 1. Percentage of Facilities Having BCC Materials/Products on LARCs/PMs at Endline, Mayer Hashi Provider Survey, 2013



Abbreviations: BCC, behavior change communication; LARCs, long-acting reversible contraceptives; PMs, permanent methods.

districts, except for the IUD in program districts, where use declined from 0.5% to 0.4% ($P \leq .01$). The increase in method use was higher in non-program districts than program districts, except for NSV.

The CPR increased by 1.6 percentage points (from 54.2% to 55.8%) in 6 program districts and by 3.5 percentage points (from 58.7% to 62.2%) in 3 nonprogram districts. This means that most of the increase in the CPR was due to an increase in use of LARCs/PMs in both areas. Figure 2 confirms that use of other methods besides LARCs/PMs either declined or was unchanged in both program and nonprogram districts.

Multivariate Analysis

Table 6 shows the multinomial logit estimates of coefficients for use of LARCs/PMs and other methods. For LARCs/PMs, program impact (which, as discussed in the Methods, is captured by the interaction effect estimated from the predicted probabilities of using LARCs/PMs obtained from

the multinomial logit model for each combination of program area and survey wave) is -0.017 and not significant ($P = .14$). Thus, we find that the program did not have any significant effect on increasing the probability of CMWRA using LARCs/PMs.

Regional Variation and Health System Context

As noted previously, MH program districts were predominantly located in the eastern region of Bangladesh which tends to have weaker health systems and more conservative values. To explore the role of health system and regional context on our findings, Table 7 presents selected indicators of health system context alongside changes in the LARC/PM use observed for subregions within program and nonprogram districts. Characteristics of a stronger health system context include (1) low vacancies of MOs–MCH and UFPOs, (2) high level of client–provider contact, and (3) high level of LARC/PM information dissemination. Nonprogram districts performed better

TABLE 4. Women's Reports of Client–Provider Contact, Informed Choice, and Exposure to Information on LARCs/PMs, Mayer Hashi Household Survey, 2013

	Percentage		Sample Size		P Value
	Program	Nonprogram	Program	Nonprogram	
Provider contact with CMWRA (in last 3 months)					
Visited by family planning workers	13	23	3,194	1,637	<.001
Sought health care from government facilities	30	44	3,117	1,544	<.001
Sought health or family planning care from government facilities	44	55	3,117	1,544	<.001
Informed choice – Received family planning or LARC/PM information from providers or facilities (in last 3 months)					
Temporary method acceptors who were told about PMs	40	33	410	174	NS
Injectable, IUD, and implant acceptors who were told about side effects	38	49	216	79	NS
Injectable, IUD, and implant acceptors who were reminded about follow-up visits	31	48	216	79	<.05
CMWRA who sought health or family planning care and noticed BCC materials with LARC/PM messages	42	43	1,369	854	NS
Exposure to LARC/PM Information – Heard, saw, or read messages ^a (in last 3 months) about:					
IUDs	15	21	3,194	1,637	<.001
Implants	22	40	3,194	1,637	<.001
Tubectomy	29	35	3,194	1,637	<.001
No-scalpel vasectomy	17	13	3,194	1,637	<.001
LARCs/PMs	38	50	3,194	1,637	<.001
PMs	31	35	3,194	1,637	<.001

Abbreviations: BCC, behavior change communication; CMWRA, currently married women of reproductive age; IUD, intrauterine device; LARCs, long-acting reversible contraceptives; PMs, permanent method; NS, not significant.

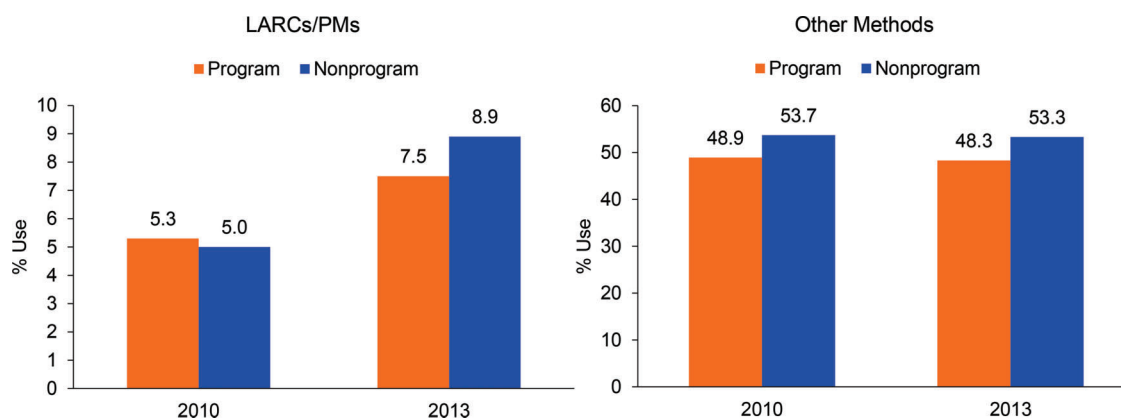
^a From TV, radio, newspaper/magazine, billboard/poster, folk song/theater, courtyard meeting, health/family planning worker, health facility, or friend/relative.

than program districts (both eastern and south-central regions) on all of these indicators. There was little difference between eastern and south-central program areas; the program areas in the eastern region had lower vacancies of UFPOs than the south-central program areas but higher vacancies for MOs–MCH, and fewer women visited health facilities for care than in the south-central program districts, which provides fewer opportunities for client–provider interactions. Therefore, it appears that the MH interventions were in districts with weaker health systems. However, the increase in use of LARCs/PMs

in the south-central program districts was only slightly lower than in the nonprogram districts (located in the north-central region), while LARC/PM use lagged behind in program districts in the eastern region, suggesting that regional factors beyond the health system context may also be important.

DISCUSSION

The primary objective of this evaluation study was to estimate the impact of the Mayer Hashi

FIGURE 2. Use of LARCs/PMs and Other Methods, by Program vs. Nonprogram Districts, 2010 and 2013, Mayer Hashi Evaluation

Abbreviations: LARCs, long-acting reversible contraceptives; PMs, permanent methods.

program on use of LARCs and PMs in the program areas. Additionally, we explored descriptively the intermediate outcomes through which the program aimed to influence use of LARCs and PMs to interpret the findings of the impact analysis. Our findings show that the coverage of service provider training was higher in program than nonprogram districts, but higher training coverage did not necessarily translate into better provider knowledge or reported practice. Service providers in program districts were more aware of policy changes or of new policies than providers in nonprogram districts, but reported practices hardly differed between the 2 types of districts. BCC materials on LARCs and PMs were more commonly found in facilities in program districts than in nonprogram districts, but CMWRA were more likely to recall seeing, hearing, or reading messages on LARCs and PMs in nonprogram districts. The use of LARCs/PMs increased between 2010 and 2013 in both types of districts, but the rate of change was not greater in the program than the nonprogram districts.

One reason suggested for the underutilization of LARCs/PMs in many low- and middle-income countries is that these methods are more challenging for the health system to deliver than short-acting methods.^{2,5} Our analysis suggests that the Mayer Hashi program districts were programmatically less “ready” than nonprogram districts to provide

LARCs and PMs. Notably, program districts had a higher rate of vacancy of MOs–MCH, the only provider of implants and female and male sterilization, than nonprogram districts. Also, vacancy of UFPOs, the *upazila* (subdistrict) family planning manager who supervises family planning outreach activities, was higher in the program than nonprogram districts.

The government monitoring and supervision system is also weak. The ongoing monitoring and supervision of the trained providers was the responsibility of the government of Bangladesh and not in the scope of the Mayer Hashi program, which resulted in weaknesses in support for translation of knowledge and skills acquired in training into behavior change. The providers did not receive any mentoring or supportive supervision, a crucial element of performance improvement. Moreover, LARC/PM service delivery requires carefully designed activities to deal with quality of care, clients’ conservative outlook in the program districts, and many other challenges. The program districts, with poor program readiness and other problems, had an increase in LARC/PM use of 2 percentage points, compared with 4 percentage points in the nonprogram districts. This increase of 2 percentage points is considerable in view of all the challenges in the program districts. CMWRA in program districts reported less contact with the health system than women

The lack of impact of the Mayer Hashi interventions on LARC/PM use at the population level could be related to structural constraints associated with program/service readiness.

TABLE 5. Change in LARC/PM Method Use Among CMWRA Between 2010 and 2013, Mayer Hashi Program

	% Reporting Use		
	2010	2013	Change
IUD			
Program	0.5	0.4	-0.1
Nonprogram	0.4	0.6	0.2
Implant			
Program	0.7	1.2	0.5
Nonprogram	0.8	1.9	1.1
Tubectomy			
Program	3.7	4.9	1.2
Nonprogram	3.2	5.7	2.5
NSV			
Program	0.4	1.0	0.6
Nonprogram	0.5	0.8	0.3
Any LARC/PM			
Program	5.3	7.5	2.1
Nonprogram	5.0	8.9	4.0

Abbreviations: CMWRA, currently married women of reproductive age; IUD, intrauterine device; LARC, long-acting reversible contraceptive; PM, permanent method; NSV, no-scalpel vasectomy.

in nonprogram districts. Family planning workers' home visits and visits by women to health facilities for family planning or other care were both higher in the nonprogram districts.

Some interventions were undertaken at the policy level to influence the enabling environment. In particular, policy-level work was successful in expanding provision of LARCs and PMs to include the Directorate General of Health Services and private/NGO providers, and the project began training these providers too. These larger system changes will likely take time to affect the health system environment substantially, however.

Because of the generally lower desire for fertility limitation and weaker health systems in the eastern region where the Mayer Hashi districts were largely located, it may be more appropriate to focus on increasing use of short-acting methods

in the immediate future. In contrast, the western region has an environment that is likely to be more conducive to LARC/PM promotion because of the higher desire for fertility limitation and higher use of contraception there, and the region's stronger family planning program infrastructure.

The MH team routinely examined quarterly trends in LARC/PM acceptance in the MH districts. These analyses of routine service statistics indicated that LARC/PM use was increasing and that the project was exceeding its objectives.¹⁵ The lack of impact of the project becomes apparent when the increase in LARC/PM use in program districts is compared with the increase in nonprogram districts. Such an analysis is beyond the scope of most project monitoring plans, but this illustrates the limitations of relying primarily on monitoring service statistics in program areas to track progress toward objectives.

There is a relatively long series of intermediate steps from the project interventions to the outcome of increased LARC/PM use at the population level. The midterm evaluation commissioned by USAID identified some limitations in intermediate steps (e.g., BCC activities) from key informant interviews and site visits. The evaluation noted that providers who were trained in postpartum IUD insertion had little opportunity to apply those skills because postpartum women were not strongly motivated to accept IUDs.¹⁵ Such implementation insights are helpful. However, as noted previously, there was no systematic plan for following up with providers to assess the effect of training on practice, or for monitoring other intermediate steps in the program. Increased attention to process evaluation to complement outcome monitoring and impact evaluation can identify interventions that are effective and those that are ineffective, and inform corrections to the program.²⁵

Limitations

This article reports on an evaluation of a program operating at scale under real-world conditions. Such evaluations face a number of design and implementation challenges that require pragmatic and creative approaches.^{26,27} We faced a common challenge: the evaluation was requested toward the end of the project, so we could not collect baseline data specific to the evaluation. For example, it was not possible to ensure that the program and nonprogram districts had similar health system capacities.

Because of the lower desire for fertility limitation and the weaker health systems in the eastern region of Bangladesh, it may be more appropriate to focus on increasing use of short-acting methods in the immediate future.

TABLE 6. Multinomial Logit Coefficient Estimates and Estimated Program (Interaction) Effect for LARC/PM Use and Other Method Use, Mayer Hashi Evaluation, 2013 (N=37,902)

	LARCs/PMs			Other Methods		
	Coefficient	SE	P Value	Coefficient	SE	P Value
Program (ref: nonprogram)	-0.084	0.088	.34	-0.243	0.049	<.001
Year 2013 (ref: 2010)	0.616	0.157	<.001	0.145	0.070	.04
Program X Year	-0.359	0.182	.05	-0.223	0.093	.02
Age, years (ref: 25–29)						
< 20	-2.396	0.280	<.001	-0.812	0.072	<.001
20–24	-1.039	0.166	<.001	-0.283	0.056	<.001
30–34	0.691	0.122	<.001	0.247	0.072	.001
35–39	1.071	0.127	<.001	0.460	0.071	<.001
40–44	0.487	0.155	.002	-0.054	0.078	.49
45–49	0.169	0.157	.28	-1.269	0.081	<.001
Education (ref: no education)						
Primary incomplete	0.242	0.110	.03	0.189	0.057	.001
Primary complete	-0.164	0.127	.20	0.273	0.053	<.001
Secondary incomplete	-0.276	0.140	.05	0.231	0.061	<.001
Secondary complete or higher	-0.589	0.197	.003	0.279	0.085	.001
Wealth quintile (ref: lowest)						
Second	-0.207	0.115	.07	0.064	0.056	.25
Middle	-0.285	0.124	.02	-0.139	0.061	.02
Fourth	-0.263	0.135	.05	-0.221	0.072	.002
Highest	-0.380	0.171	.03	-0.378	0.083	<.001
Religion (ref: Muslim)						
Non-Muslim	0.545	0.137	<.001	0.278	0.063	<.001
Sector (ref: rural)						
Urban	0.278	0.115	.02	0.286	0.054	<.001
Constant	-1.988	0.129	<.001	0.380	0.073	<.001
Program effect ^a						
Interaction effect	-0.017	0.011	.14	-0.038	0.021	.07

Abbreviations: LARC, long-acting reversible contraceptive; PM, permanent method; SE, standard error.

^a Estimated from the predicted probabilities of LARC/PM use or other method use obtained from the model for each program area by survey year combination, in line with the difference-in-difference approach to estimate program impact, as described in the main body of the article.

TABLE 7. Indicators of Regional Health System Strength and Increase in LARC/PM Use, Mayer Hashi, 2013

	Program Districts		Nonprogram Districts
	Eastern region	South-central region	North-central region
Vacancy of UFPO, %	36	47	10
Vacancy of MO–MCH, %	56	38	19
CMWRA visited by FWA and other family planning worker, ^a %	13	12	23
CMWRA sought health/family planning care from facilities, %	41	49	55
CMWRA heard, saw, or read about LARCs/PMs, %	38	37	50
Increase in LARC/PM use between 2010 and 2013, percentage points ^b	1.6	3.3	4.0

Abbreviations: CMWRA, currently married women of reproductive age; FWA, family welfare assistant; LARC, long-acting reversible contraceptive; MO–MCH, medical officer–maternal and child health; PM, permanent method; UFPO, *upazila* (subdistrict) family planning officer.

^a Although FVAs are supposed to make home visits every 2 months, in practice less than 20% of CMWRA reported that they were visited by a family planning worker in the 6 months prior to the 2011 Demographic and Health Survey.⁹

^b It was not possible to match the program and nonprogram districts in the health system characteristics that may affect couples' LARC/PM use.

We did not have baseline data on provider knowledge and behavior or on women's knowledge of and attitudes toward LARCs and PMs. Therefore, our analysis of the intermediate outcomes through which the program aimed to influence use of LARCs and PMs is limited to a comparison between program and nonprogram districts at endline only and is therefore more descriptive. It is possible that provider knowledge and practice were weaker in program than in nonprogram districts at baseline, and that the interventions brought the providers in the program districts up to the level of those in nonprogram districts. However, the baseline use of LARCs/PMs was the same in program and nonprogram areas, so it does not appear that any baseline differences in provider knowledge and practice were associated with a difference in use of LARCs/PMs. Therefore, while we might be missing some effects of training on the intermediate step of provider knowledge and practice, it is unlikely that this limitation explains the lack of effect of the interventions on LARC/PM use.

The DID estimation strategy to evaluate the program effect on LARC/PM use was the

strongest evaluation design available to us. The DID model rests on the assumption that the change observed in the nonprogram districts is a proxy for the change that would have been observed in the program districts in the absence of the interventions. It is not possible to test this assumption directly, although trends in LARC/PM use appear to have been similar in program and nonprogram districts between 2004 and 2010. This is a limitation of DID analyses in general, however.

CONCLUSION AND RECOMMENDATIONS

Use of LARCs and PMs is increasing slowly in Bangladesh, but the increase is greater in districts or regions where the health system is stronger or the desire for family limitation is stronger. Provider vacancy is universally a crucial factor in efforts to improve health services. The availability of appropriate, high-quality providers for LARCs and PMs has been a challenge in Bangladesh for many years in spite of its substantial progress in health care.^{23,28}

An immediate solution to these challenges is unlikely; therefore, Bangladesh should seek

alternative and/or supplemental avenues to provide high-quality LARC/PM services. The privatization of LARC and PM services is one option. The Bangladesh government has opened up LARC/PM services to the private sector recently, and combined efforts of the public-, private-, and NGO sectors should be encouraged, especially in view of the recent growth of the private sector for family planning and other reproductive and child health services.^{6,29} Further operations research is needed to discover innovative, affordable, and effective interventions to improve LARC/PM service delivery within a constrained health system, and more attention to process evaluation will improve our understanding of implementation and progress along the program pathway to complement outcome monitoring and impact evaluations.

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FIELD ACTION REPORT

Increasing Use of Postpartum Family Planning and the Postpartum IUD: Early Experiences in West and Central Africa

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Competency-based training in postpartum family planning and postpartum IUD (PPIUD) service delivery of antenatal, maternity, and postnatal care providers from 5 francophone African countries generated an enthusiastic response from the providers and led to government and donor support for expansion of the approach. More than 2,000 women chose and received the PPIUD between 2014 and 2015. This model of South–South cooperation, when coupled with demand promotion, supportive supervision, and reliable collection of service outcome data, can help to expand PPIUD services in other regions as well.

ABSTRACT

A global resurgence of interest in the intrauterine device (IUD) as an effective long-acting reversible contraceptive and in improving access to a wide range of contraceptive methods, as well as an emphasis on encouraging women to give birth in health care facilities, has led programs to introduce postpartum IUD (PPIUD) services into postpartum family planning (PPFP) programs. We describe strategic, organizational, and technical elements that contributed to early successes of a regional initiative in West and Central Africa to train antenatal, maternity, and postnatal care providers in PPFP counseling for the full range of available methods and in PPIUD service delivery. In November 2013, the initiative provided competency-based training in Guinea for providers from the main public teaching hospital in 5 selected countries (Benin, Chad, Côte d'Ivoire, Niger, and Senegal) with no prior PPFP counseling or PPIUD capacity. The training was followed by a transfer-of-learning visit and monitoring to support the trained providers. One additional country, Togo, replicated the initiative's model in 2014. Although nascent, this initiative has introduced high-quality PPFP and PPIUD services to the region, where less than 1% of married women of reproductive age use the IUD. In total, 21 providers were trained in PPFP counseling, 18 of whom were also trained in PPIUD insertion. From 2014 to 2015, more than 15,000 women were counseled about PPFP, and 2,269 women chose and received the PPIUD in Benin, Côte d'Ivoire, Niger, Senegal, and Togo. (Introduction of PPIUD services in Chad has been delayed.) South–South collaboration has been central to the initiative's accomplishments: Guinea's clinical centers of excellence and qualified trainers provided a culturally resonant example of a PPFP/PPIUD program, and trainings are creating a network of regional trainers to facilitate expansion. Two of the selected countries (Benin and Niger) have expanded their PPFP/PPIUD training programs to additional sites. Inspired after learning about the initiative at a regional meeting, Togo has outperformed the original countries involved in the initiative by training more providers than the other countries. Challenges to scale-up include a lack of formal channels for reporting PPFP and PPIUD service delivery outcomes, inconsistent coordination of services across the reproductive health continuum of care, and slow uptake in some countries. Continued success will rely on careful recordkeeping, regular monitoring and feedback, and strategic data use to advocate scale-up.

BACKGROUND

In low-income countries, increasing emphasis on antenatal care (ANC) and childbirth in a health care facility (institutional delivery) has created an opportunity to

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counsel women about family planning. The health benefits of contraception and birth spacing for women and their infants are striking.^{1,2} During the postpartum period, many women want to delay or avoid a subsequent pregnancy, but unmet need for family planning is higher during the first year after childbirth than at any other time.³ At 6 weeks postpartum, Pasha et al. found that 95% of women in 5 low-income countries wished to avoid pregnancy for at least 1 year.⁴ Women who attend ANC are more likely to initiate postpartum family planning (PPFP) than those who do not,^{5,6} which indicates that women are particularly receptive to information about contraception and birth spacing during pregnancy.

Renewed interest in the intrauterine device (IUD), a highly effective, long-acting reversible contraceptive (LARC) that is safe for lactating women, has encouraged some programs to add postpartum IUD (PPIUD) services to their PPFP options.^{1,7-9} A PPIUD can be inserted within minutes after delivery of the placenta (postplacental insertion), up to 48 hours after childbirth (immediate postpartum insertion), or during a cesarean delivery (intracesarean insertion). PPIUD insertion may avoid discomfort associated with interval insertion (insertion 4 weeks or more after delivery), and bleeding from insertion will be disguised by postpartum lochia (the normal discharge from the uterus after childbirth).¹⁰ Historically, postplacental and immediate postpartum insertion have been associated with higher rates of expulsion than interval insertion, but improved insertion techniques have reduced this risk.^{1,10,11} IUDs are cost-effective, can be inserted in a matter of minutes by a trained provider, and do not require an additional facility visit when inserted during the childbirth stay.^{10,12} Insertion before discharge from the birthing facility ensures that the woman is not pregnant at the time of insertion and is protected against pregnancy prior to resuming sexual activity.¹

PPIUDs make up a small share of the method mix in sub-Saharan Africa,¹³ but West and Central African countries are investing in efforts to broaden the contraceptive method mix and increase low contraceptive prevalence rates.¹⁴ Successful PPFP and PPIUD interventions have focused capacity-building efforts on providers of ANC and labor and delivery care at high-volume maternity units with a strong record of infection prevention and counseling.⁸ Evidence from India, Kenya, and Zambia shows that nonphysicians perform PPIUD insertions as well as physicians, with similar

outcomes, as long as they receive appropriate competency-based training.^{7,15} Lessons learned from other PPIUD interventions indicate that service strengthening is crucial, including advocacy, training, provision of key supplies and equipment, demand creation, supportive supervision, and strong monitoring and evaluation (M&E).⁸

In this article, we describe the process of developing and implementing a regional initiative using competency-based training to introduce PPFP and PPIUD services in selected public teaching hospitals in francophone West and Central Africa. We highlight early lessons learned in this nascent initiative that have led to promising uptake and expansion of PPIUD services, while also documenting program and recordkeeping challenges.

PROGRAM DESCRIPTION

Preparing the Soil: The Power of Meetings to Spark Interest in PPFP and the PPIUD

In July 2012, donors, governments, and development assistance agencies committed to revitalize investment in family planning services at the London Summit on Family Planning. Countries committed to specific actions, objectives, policy changes, and investments in family planning as part of the Family Planning 2020 (FP2020) initiative spawned by this conference.¹⁴

A few months later in 2012, technical experts highlighted practical, effective reproductive health interventions, including PPFP and PPIUD services, at a session of the annual congress of the Société Africaine des Gynécologues et Obstétriciens (SAGO) in Niger, and Jhpiego, an international health NGO headquartered in the United States, gave a presentation detailing the benefits of its PPFP/PPIUD implementation strategy and results from successful programs. The presentations sparked a groundswell of enthusiasm from attendees for a PPIUD initiative, including representatives from the United Nations Population Fund (UNFPA) and ministries of health (MOHs) in West and Central African countries.

Drawing upon its program experience in the West and Central African region, Jhpiego subsequently submitted a concept note to the regional UNFPA technical director proposing an initiative to facilitate scale-up of PPFP/PPIUD services to integrate family planning and maternal health services at the facility level. Interested parties continued to consolidate support for a regional PPFP/PPIUD initiative, including giving a presentation

Successful PPFP/PPIUD interventions have focused capacity-building efforts on providers of ANC and labor and delivery at high-volume maternity units with a strong record of infection prevention and counseling.



Trainees from West and Central Africa practice postpartum family planning counseling at a training event.

at the annual meeting of the Association Sénégalaise de Gynécologie Obstétrique (ASGO) in July 2013.

Planting the Seed: Designing the PPFP/PPIUD Initiative

The goal of the PPFP/PPIUD initiative, which trained providers in November 2013 who then began offering services at the beginning of 2014, was to increase contraceptive prevalence in 5 selected countries where UNFPA had a presence by providing PPFP counseling and services during the antenatal, early labor, and postpartum periods for the full range of methods available, and introducing good-quality PPIUD services in selected health facilities to diversify the PPFP method mix. The 5 countries were Benin, Chad, Côte d'Ivoire, Niger, and Senegal. One additional country, Togo, replicated the initiative's model in 2014 after hearing about it at a regional PPIUD conference in Ouagadougou, Burkina Faso, in February 2014. After learning that UNFPA had funding for PPFP/PPIUD programs in the region, delegates from Togo approached their in-country UNFPA office and procured funds for their own program. Modern contraceptive prevalence in these 6 countries is low, ranging from 1.6% in Chad to 17.3% in Togo, with IUD usage rates almost nonexistent (<1%) (Figure 1).¹⁶ At baseline, PPFP/PPIUD services were not available in these countries.

In addition to awareness raising, sensitization, and advocacy, the principal components of the PPIUD initiative included:

1. Provider training
2. Supportive supervision for trained staff

3. Ongoing monitoring of outputs and outcomes

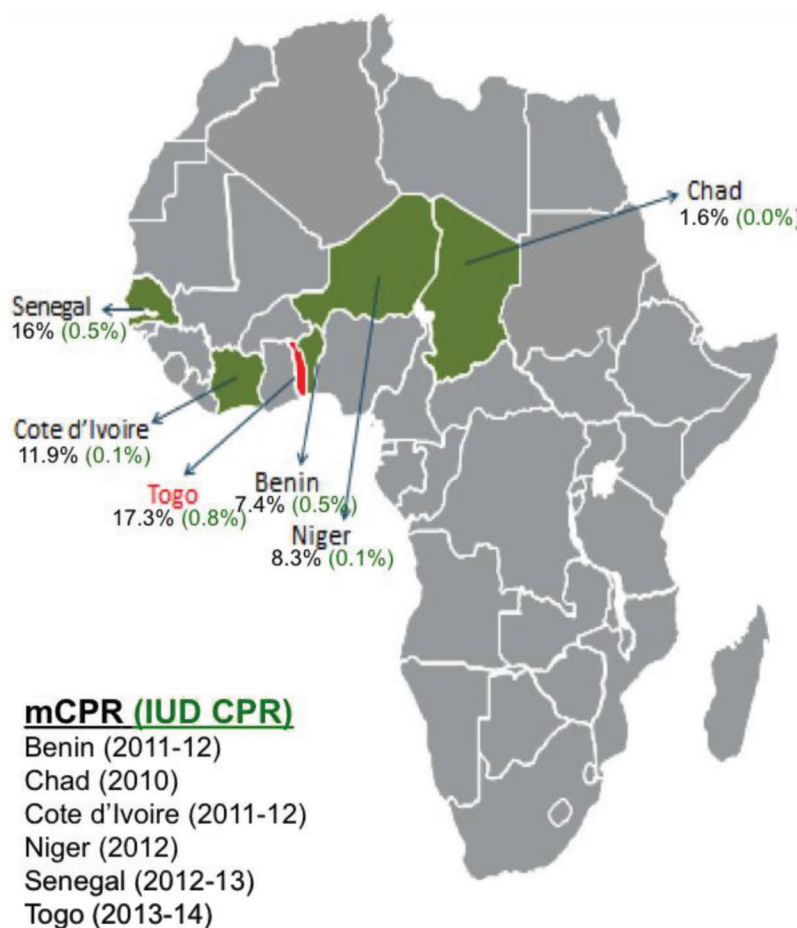
The vision was that the countries would assume ownership for implementing the initiative. Programs in each country would generate data to demonstrate the feasibility and acceptability of services and use these data to advocate sustainable expansion, supported by in-country UNFPA offices and other donors.

Regional Competency-Based Training of Country Teams

In November 2013, we held a training session to strengthen providers' family planning counseling skills and equip them to introduce PPFP and PPIUD services. In each of the 5 selected countries involved in the initiative, a team of 5 health care providers, comprising 2 providers in ANC or postnatal care (PNC), 2 in labor and delivery, and 1 physician in charge of the maternity ward, from a single facility—usually a main public teaching hospital—was invited to attend the training session.

Respected teaching faculty with high case-loads were invited because they had the potential to become competent and influential trainers and ambassadors for the PPIUD (so-called “champion” providers) who could change perceptions and practices in their countries and help expand the initiative.¹ Guinea was chosen as the training location because Jhpiego had previously supported the implementation of PPFP/PPIUD services in its national hospitals and nearby communal medical centers, which provided an excellent platform for hands-on, experiential training. (The Togo team also requested technical assistance from the PPFP/PPIUD initiative for training of trainers by the Guinea team.)

The training course used a competency-based approach and covered counseling skills, PPIUD insertion techniques, management of side effects and complications, and infection prevention procedures. ANC and PNC providers attended training for counseling only, whereas the labor and delivery providers on each team were trained in PPIUD insertion as well as counseling. Classroom sessions were followed by practice on anatomical models of the postpartum uterus. Anatomical models were furnished for training, and each facility team was given at least 3 instrument kits for PPIUD insertions. The postpartum uterus model differs from a normal uterine anatomical model in how the fundus feels and in the

FIGURE 1. mCPR and IUD CPR in the PPF/PPIUD Initiative Countries and Togo^a

Abbreviations: CPR, contraceptive prevalence rate; IUD, intrauterine device; mCPR, modern contraceptive prevalence rate; PPF, postpartum family planning; PPIUD, postpartum intrauterine device.

^a The initiative was launched in 5 countries (Benin, Chad, Côte d'Ivoire, Niger, Senegal) in November 2013; Togo replicated the initiative's model in 2014.

Source: United Nations, Department of Economic and Social Affairs, Population Division.¹⁶

vagino-uterine angle, which must be reduced for proper PPIUD placement. Participants' performance was assessed using a standardized checklist of skills for successful counseling and insertion.

Four trainers—themselves trained as trainers by Jhpiego—coached participants until they demonstrated competence with the anatomical model, after which the participants visited 1 of 3 practicum sites in Guinea to gain clinical experience performing PPIUD insertions on clients. The partici-

pants performed 22 PPIUD insertions: 18 postplacental insertions, 3 intracesarean insertions, and 1 immediate postpartum insertion. The same standardized performance checklist used during training was also used at practicum sites to observe practice and qualify providers on PPIUD insertion with clients.

Post-Training Transfer-of-Learning Visit

Following the training, the trainers conducted one formal transfer-of-learning visit at each hospital

The number of sites providing PPFP and PPIUD services has increased from the original 4 in early 2014 to 19 as of January 2016.

to monitor the new skills and services and to help providers address challenges in putting their new skills into practice and in managing service delivery. Only one formal visit was possible due to budget constraints. During these visits, they observed providers at work and used standardized checklists to give feedback; examined client flow, organization of services, and the procurement system; and worked to strengthen data collection and reporting. Use of standardized checklists offered an opportunity to improve quality of services. This was also an opportunity to advocate ongoing support for the integration of family planning and maternity services and expansion of the PPFP/PPIUD initiative in each country. Whenever trainers were near one of the hospitals at other points in time, they also visited the providers informally to answer questions, monitor progress, and provide support.

Monitoring and Evaluation

The initiative worked with the 5 country teams to develop and strengthen monitoring systems for both PPFP counseling and PPIUD insertions. PPFP and PPIUD indicators are not yet included in any of the countries' health management and information system (HMIS). Instead, an M&E staff person from Guinea oriented trainees on the use of a standardized logbook provided during the training and sensitized country teams to the importance of accurate data collection and reporting. The site visits by the trainers were also an opportunity to identify gaps in service delivery data collection and errors in recordkeeping, such as discrepancies between the time when a woman was counseled and when she received the PPIUD. However, monitoring efforts suffered from the lack of a dedicated person to collect and collate the data, as well as a lack of accountability inherent in the HMIS. As a result, there are considerable missing data.

RESULTS

Growing Buds: Encouraging Signs of Success

The initiative is still in its infancy, and thus it is too early to detect any increase in contraceptive prevalence attributable to the initiative. However, training outputs and service delivery outcomes have been promising, and the program is expanding in the region. During the initial round of training, 21 providers from the 5 countries were instructed in PPFP counseling, 18 of whom were

also trained in PPIUD insertion. Although providers from Chad have been trained, introduction of PPIUD services has been delayed, likely due to low ANC coverage, low modern contraceptive prevalence, and a lack of government and agency support. Progress in the other countries has been slow, but the number of sites providing PPFP and PPIUD services has increased from the original 4 in early 2014 to 19 as of January 2016, which includes 7 sites in Togo.

The initiative's M&E staff person in Guinea collected service data informally from 2014 to 2015, which are presented in the [Table](#) for 5 of the 6 countries. Service data for Chad are not provided in the [Table](#) due to the delays experienced there. The data point to the following program results:

- More than 15,000 women were counseled on PPFP services in Benin, Côte d'Ivoire, Niger, Senegal, and Togo between 2014 and 2015. Year-over-year decreases in numbers of women counseled were observed in some sites, probably due to having met an initial surge in demand after services were first introduced.
- 2,269 of these women in these 5 countries chose to have a PPIUD inserted. The number of women choosing to have a PPIUD inserted increased between 2014 and 2015 in each of the 5 countries with data ([Figure 2](#)).
- 0.8% of these 2,269 women reported spontaneous expulsions, which is very low compared with rates of 1.7% to 3.7% reported in similar programs in Ethiopia, Guinea, Pakistan, and the Philippines.¹
- 42.4% of PPIUD recipients received a follow-up consultation, either in person at 4–6 weeks postpartum (13.8%) or by phone at 6 weeks or after if the woman had not received follow-up and a phone number was on file (28.6%).
- Only 12 women (0.5% of those who had a PPIUD inserted) have requested removal since insertion, 10 of whom expressed a desire to become pregnant and 2 whose husbands disapproved of the IUD (data not shown).

The most common timing for PPIUD insertion to date in the 4 countries with such data is during cesarean delivery (32.9%) ([Figure 3](#)). The large proportion of intracesarean insertion is due to 3 countries (Côte d'Ivoire, Benin, and Niger),

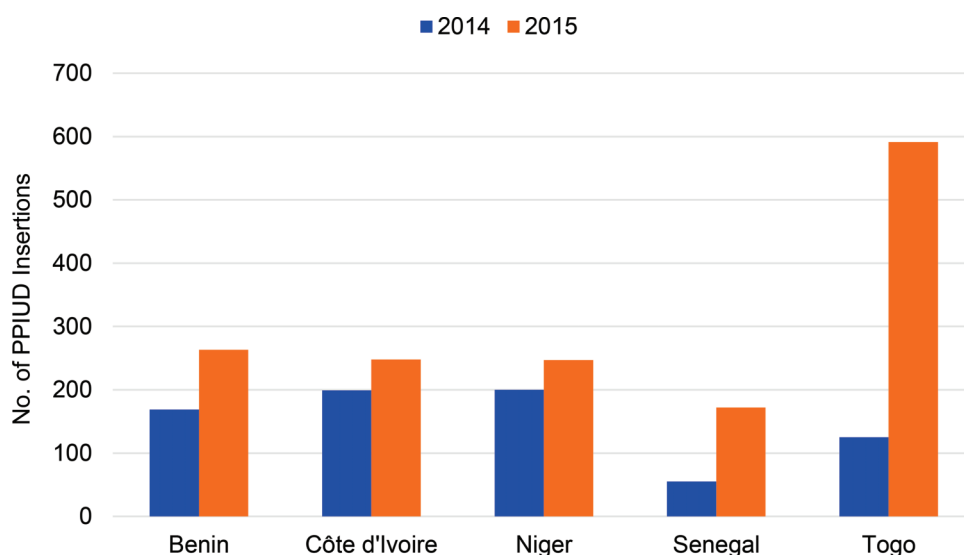
More than 2,000 women in 5 countries chose and had a PPIUD inserted between 2014 and 2015.

TABLE. PPIUD Service Statistics by Country,^a 2014–2015

Service Statistic	Benin		Côte d'Ivoire			Niger			Senegal			Togo			Total			Grand Total
	2014	2015	2014	2015	2015	2014	2015	2015	2014	2015	2015	2014	2015	2015	2014	2015	2015	
Overall																		
Cumulative no. of facilities providing PPFP/PPIUD services	1	5	1	1	1	1	5	1	1	1	1	0	7	4	4	19	19	
No. of women receiving PPFP counseling	4,858	2,934	3,829	2,953	NA	NA	NA	NA	820	NA	NA	NA	NA	8,687	6,707	15,394		
No. of PPIUD insertions	169	263	199	248	200	247	55	172	125	591	748	1,521	2,269					
No. of PPIUD expulsions ^b	1	4	0	4	0	0	0	2	0	8	1	18	19					
Timing of counseling for women choosing the PPIUD																		
During ANC	20	52	11	59	5	39	0	0	0	0	36	150	186					
Before active phase of labor	92	149	61	121	168	97	7	18	0	0	328	385	713					
Immediately postpartum	54	62	24	54	25	25	48	154	0	0	151	295	446					
Missing data	3	0	103	14	2	86	0	0	125	591	233	691	924					
Timing of insertion of the PPIUD																		
Postpartum (within 10 minutes after delivery)	29	78	24	50	31	82	1	14	29	124	114	348	462					
Immediate postpartum (> 10 minutes to 48 hours postpartum)	77	79	26	59	39	13	40	154	30	152	212	457	669					
Intracervical	63	106	47	119	129	152	14	4	4	109	257	490	747					
Missing data	0	0	102	20	1	0	0	0	62	206	165	226	391					
Method of follow-up consultation among women choosing the PPIUD																		
At the facility 4–6 weeks after delivery	28	11	24	115	3	50	30	35	0	16	85	227	312					
By telephone 6 weeks or more after delivery	24	45	17	95	134	137	22	37	0	139	197	453	650					
No follow-up	117	207	158	38	63	60	3	100	125	436	466	841	1,307					

Abbreviations: PPFP, postpartum family planning; PPIUD, postpartum intrauterine device; NA, not available.

^a The PPFP/PPIUD initiative was launched in 5 countries—Benin, Chad, Côte d'Ivoire, Niger, and Senegal—with Togo joining later. No data are provided for Chad because introduction of PPIUD services has been delayed there.^b As reported by PPIUD users.

FIGURE 2. Number of PPIUD Insertions in 5 Countries^a in 2014 and 2015

Abbreviations: PPIUD, postpartum intrauterine device.

^a Benin, Côte d'Ivoire, Niger, and Senegal were part of the original PPFP/PPIUD initiative; Togo replicated the model afterward. Data for Chad, the fifth initiative country, were not available.

Only 20% of women choosing the PPIUD had it inserted immediately after birth, potentially suggesting weak PPFP counseling at ANC clinics.

Adoption of the initiative by Togo provides a model for country-led introduction and expansion of PPFP/PPIUD services.

where physicians who perform cesareans—rather than nonphysician clinicians who cannot—are the most motivated and engaged PPIUD providers. The relatively low percentage of postplacental insertions (20.4%) may be an indicator of weak PPFP counseling at ANC clinics, assuming that the women choosing the PPIUD had made ANC visits. (ANC coverage of at least one visit is high in the West African countries involved in the initiative, ranging from 84% to 87%, and lower in the Central African countries, ranging from 39% to 46%.¹⁷) If ANC counseling can be strengthened, the share of postplacental insertions should increase.

Since launching its program, Togo has outperformed the original countries involved in the initiative, with 13 trainers updated in PPFP and 46 providers trained in PPFP counseling. Of these 46 providers, 33 were trained on PPIUD insertion. Collectively, they have performed 716 PPIUD insertions to date. The adoption by Togo provides a model for country-led introduction and expansion of good-quality PPFP/PPIUD services.

LESSONS LEARNED

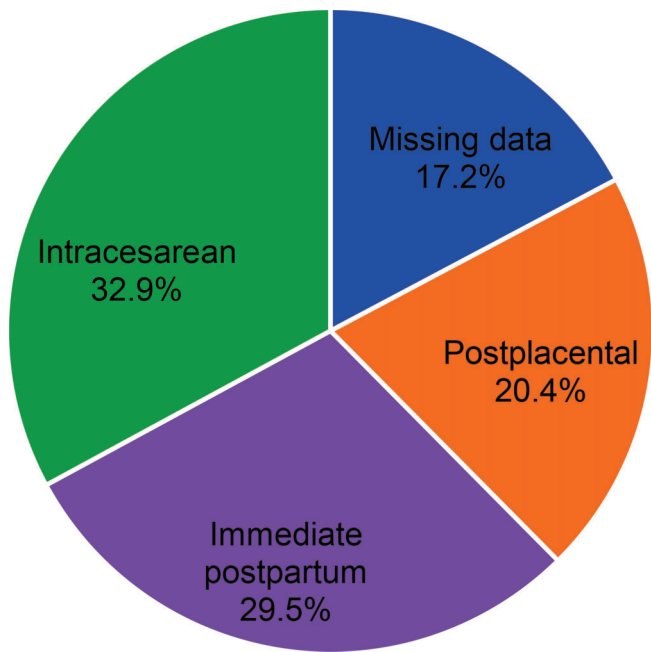
Meetings Are Opportunities

Experience with developing and rapidly implementing this PPFP/PPIUD initiative across 6 countries in West and Central Africa speaks to the potential of strategic synergies of stakeholders and good ideas at regional and international conferences, as well as the power of data to spur decision makers to action. Critical inputs included:

- Facilitation of the initiative in multiple countries of the region by a respected technical assistance provider
- Cultivation of partnerships between donors, national MOHs, and other key stakeholders
- Sharing of convincing scientific data and program experiences to ignite interest

The effectiveness of meetings to motivate and connect countries with resources to take action is evidenced by Togo's rapid and successful embrace

FIGURE 3. Timing of PPIUD Insertions Among Women Choosing the PPIUD in 5 Countries^a Between 2014 and 2015 (N=2,269 Insertions)



Abbreviations: PPIUD, postpartum intrauterine device.

^a Benin, Côte d'Ivoire, Niger, Senegal, and Togo; data for Chad were not available.

of the PPFP/PPIUD approach after the 2014 conference in Ouagadougou.

South–South Collaboration Increases Commitment

The prevailing spirit of the initiative is South–South collaboration, increasingly hailed as a successful model for sustainable knowledge and skill transfer.^{18–20} Training and support from experienced providers in their own region resonates more strongly than training from external providers, particularly as these local experts had themselves been trained by a world-renowned institution. The initial training was based in Guinea because of its experience with PPFP/PPIUD services, its clinical centers of excellence in which to conduct the practicum, and the presence of motivated, culturally similar trainers. Trainees were inspired by observing during their training a successful model for PPFP/PPIUD services in

Guinea and also by building rapport with the trainers; they returned home believing that if a PPFP/PPIUD intervention could succeed in such a similar cultural and geographic context, it should be possible in their own country. Shared culture and language also facilitated the training, reduced miscommunication between teams, and built engagement and mutual support. Continued support and guidance from these Guinea-based trainers in informal follow-up visits and phone calls has maintained this enthusiasm and confidence.

The launch of a new country initiative in Togo is an additional example of South–South collaboration. Armed with information, financial resources from UNFPA, and technical support from the Guinea-based trainers, Togo was able to mobilize resources to meet the needs of its people. Developing a pool of regional trainers—a future goal of the initiative—maximizes the potential for future South–South collaboration and builds a platform for further expansion of the program in

Developing a pool of regional trainers is a future goal of the initiative to maximize the potential for future South–South collaboration and further expansion in the region.



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A trainee practices postpartum IUD insertion using an anatomical model.

the region. There are now 15 PPIUD trainers in Togo, 11 of whom have completed their qualification by leading a training course with a mentor. However, the current number of trainers is insufficient to expand the program in the countries or across the region; training and equipping more trainers is necessary to expand good-quality counseling and PPIUD services during scale-up.

Evidence Can Help Advocate Expansion

Dissemination of positive program experiences at conferences has led to expansion of the initiative in 2 of the original 5 countries. Seeing initial program successes in Benin and Niger, each country's MOH worked with the regional UNFPA mission in collaboration with in-country UNFPA offices to expand the training to an additional 4 sites in each country. This realized the planning team's vision that countries would respond to positive data, assume ownership for their programs, and seek collaborations to help them showcase their activities and expand their programs. Expanding training to these additional sites in Benin and Niger has produced 20 trained providers on PPFP counseling in each country, and 13 and 15 providers for PPIUD insertion, respectively. Replicating and scaling up this model will require building local capacity for implementation to reduce the cost of the program model over the long term.

Ensuring Availability of Equipment and Supplies Avoids Service Delivery Delays and Interruptions

Procuring the equipment for PPIUD services can be challenging, and delays cause unnecessary interruptions in service delivery. Sending equipment and supplies home with trainees, including adequate numbers of PPIUD instrument kits (PPIUDs themselves are procured along with other contraceptive methods) and an anatomical model for each facility, allowed teams to begin providing the service immediately. Working with the same tools in their home country with which they had trained also gave them additional confidence.

Because the PPIUD service was new, there was an anticipated lag in caseload until sufficient demand was generated. Having an anatomical model available allowed trainees to maintain their skills and also to demonstrate the procedure to their peers in their facility. Some trainees were so enthusiastic that they trained their colleagues immediately upon their return. This may explain how some sites rapidly ramped up PPIUD services, although informal peer-to-peer training may reduce the quality of skills acquisition. Any quality concerns may be mitigated as the body of regional trainers is expanded to provide further transfer-of-learning visits and oversight to maintain the high quality of services.

ONGOING AND FUTURE CHALLENGES

While these early results are encouraging, uptake has not occurred evenly in the initiative countries, and numbers of insertions per trained provider are not as high as some other PPIUD programs have documented.²¹ The initiative plans to overcome the challenges experienced in the first months of implementation through (1) better communication across the service delivery continuum, (2) advocating the program to the MOH with consistent and accurate data collection and monthly reporting, and (3) creation of a system to avoid stock-outs of essential PPIUD supplies and contraceptives.

Service Delivery Coordination

Matching demand created for PPFP services with good-quality PPFP service delivery, particularly for PPIUD insertion, requires coordination between antenatal clinics, labor and delivery, family planning units, and postnatal clinic care. Such coordination is typically poor. With PPFP, the optimal time to

discuss contraception is during the antenatal period, when a bond can be established between the client and the provider and the client has time to consider her contraceptive options. Not offering PPFP counseling during pregnancy is a missed opportunity, as antenatal counseling gives women time to decide among their family planning options free of the time pressure, the pain of giving birth, and the demands of caring for a new baby. Once admitted to a facility for delivery, women in the early stages of labor may be able to make an informed choice; women in active labor may not.

One way to encourage better coordination across the antenatal-labor-and-delivery-postnatal care continuum would be to note whether a woman has received PPFP counseling and her method choice on the antenatal clinic card. This would potentially improve communication between antenatal and delivery services. Many successful PPFP/PPIUD interventions have used a rubber stamp on the antenatal care card to serve this purpose. Another way to ensure a continuum of care is to extend communication beyond the delivery room to the family planning clinic: women who receive PPIUDs need to know where to go for family planning follow-up visits, and family planning clinics need a record of which contraceptive method women are using.

Collection and Dissemination of Data

Other PPIUD programs in low-income countries have confirmed that data can be a powerful tool for advocacy,¹ and maximizing collection and dissemination of data is important to make the case for scale-up of these programs, as seen in the examples of Benin and Niger. The global climate has shifted in favor of reinvigorating family planning, there is strong global agreement that PPFP and PPIUD services are critical strategies to reduce unmet need, and there are capable institutions equipping experts to provide the service regionally—all favorable conditions to convince national governments to take ownership for PPFP/PPIUD programs.²² Generating political momentum within the MOH requires credible indicators for PPFP and PPIUD services that demonstrate the safety, acceptability, and cost-effectiveness of PPIUD services.

The continued success of this initiative relies on careful recordkeeping, regular monitoring and feedback to improve quality, and strategic use of data to make the case for scale-up in the countries and throughout the region. Service

delivery statistics that demonstrate the safety and acceptability of PPIUDs can correct misconceptions of decision makers—who may associate IUDs with high expulsion rates or other adverse consequences—and build support for PPIUD interventions. However, due to resource constraints, data collection and management tools—such as logbooks to record counseling, insertions, complications, and follow-up visits—are often poorly used. Deficiencies in data management also may contribute to loss to follow-up if facilities fail to record clients' contact information or if they lose the contact information.

The initiative has encouraged all participating sites to report monthly PPIUD service delivery data from their standardized logbooks to their MOH, even though the indicators are not yet included in any of the countries' HMIS. Data collection tools using new technology, such as smartphones or tablets, can also help identify and resolve issues, such as PPIUD complications, early. We plan to conduct research to determine how the HMIS can and should track PPFP/PPIUD uptake, and we plan to advocate the addition of PPFP/PPIUD indicators to the HMIS.¹

Systems to Avoid Stock-Outs

Failing to have a range of LARCs available in sufficient quantities at every health facility offering PPFP/PPIUD is a missed opportunity. Particularly where demand is being generated during antenatal and postnatal visits, facilities should anticipate demand outpacing available equipment and commodities.

Labor and delivery units have traditionally not offered family planning, but they could order contraceptives through the family planning unit when needed. Opening this procurement channel requires improved communication between labor and delivery units and family planning units. Alternatively, labor and delivery units could develop their own procurement mechanism and system to stock contraceptives and avoid stock-outs. As the initiative matures, we are working to develop effective systems to prevent stock-outs of supplies and commodities in the delivery room and during postpartum services.

Research to Understand Barriers to PPFP/PPIUD Uptake

Uptake of the PPIUD and service expansion has not occurred evenly across the region. Some countries have been slower to introduce PPIUD

The ideal time to counsel women about PPFP is during the antenatal period when bonds between the client and provider can be established and the client has time to consider her options.

Generating political momentum within MOHs for PPFP and the PPIUD requires credible data demonstrating safety, acceptability, and cost-effectiveness of the approach.

BOX. Priority Research Areas of Factors Affecting Use of Postpartum IUD Services

- Identification of effective recordkeeping and communication technologies to improve continuum of care for PPFP/PPIUD services from antenatal care through delivery, postpartum visits, and family planning clinic visits
- Determination of ways to routinely collect data on service delivery and quality, including total number of women counseled on PPFP and the PPIUD, timing of the counseling, and user satisfaction
- Inclusion of indicators to track PPFP/PPIUD uptake in the HMIS
- Implementation of optimal procurement systems to avoid stock-outs in labor and delivery units, coordinated with demand promotion
- Identification of cultural and religious reasons for differences in uptake of PPIUD services, and best practices to address any misconceptions about the PPIUD

services while others, such as Chad, have not yet begun offering services despite participating in provider training. We encountered no provider bias against IUD insertion, although it has been documented in other settings.²³ Rather, any initial reluctance in the countries where the initiative is actively providing services appeared to be due to an inability to perform the procedure and was overcome through training. Low ANC coverage (39%) may also partially explain the lack of success in Chad.¹⁷ While the cost of contraceptives can be a barrier, contraceptives are heavily subsidized in all countries participating in this initiative, so cost is unlikely to impede uptake.

Cultural and religious objections to family planning and lingering misconceptions about PPIUDs may contribute to low uptake.^{7,24} A study in Tanzania found that partner disapproval contributed to women's lack of follow-through on PPFP after delivery.²⁵ In Niger, we documented two cases of removal based on partner disapproval, which indicates that this may be an important factor limiting uptake in some regions. Evidence from Nigeria suggests that multiple antenatal counseling sessions lead to greater use of PPFP.²⁶ Understanding the reasons for differences in uptake of the PPIUD and programmatic best practices to overcome cultural and religious barriers are areas for research that may become more relevant as the initiative expands.

STRENGTHS AND LIMITATIONS

Few reports document the inter-organizational effort to introduce and scale up PPFP counseling and PPIUD services. Our account provides a needed example for future similar programs in

other regions. As discussed above, these early findings are too limited to draw confident conclusions about the impact of the program on contraceptive prevalence rate or quality of care (e.g., the expulsion rate data in the [Table](#) are a weak indicator of quality of care, and we have no measures of quality of counseling). Additionally, we cannot determine the reasons for the uneven uptake of services across various countries: these may represent cultural barriers, failures in demand generation, or differences in provider motivation and performance, among other reasons. Collecting more and better data on service delivery and quality will be a primary focus of the initiative moving forward. The [Box](#) details these and other challenges that the initiative hopes to address.

CONCLUSION

Our initiative's early successes introducing PPFP and PPIUD services in West and Central Africa illustrate how the seed of a timely idea can be tended with supportive and strategic collaboration between donors, country governments, and a regional body of expert trainers. This collaboration generated momentum to implement a regional model of high-quality PPFP/PPIUD service provision. Ensuring that practitioners are competent and equipped with all the supplies they need leads to better service delivery outcomes, which can ignite political will to expand PPFP/PPIUD services. Evidence from Benin and Niger demonstrate that positive service delivery outcomes can be used to advocate program expansion and scale-up. To achieve the goals of this initiative, we are working to ensure proper data collection, regular reporting of these data to engage MOH and funding agencies, and creation of a system to

To achieve the PPFP/PPIUD initiative goals, we are working to ensure proper data collection, regular data reporting to engage MOH and funding agencies, and prevention of PPIUD instrument and contraceptive stock-outs.

prevent stock-outs of PPIUD instruments and contraceptives. Our experience aligns with lessons from other PPFP and PPIUD programs: rigorous training incorporating current clinical and program learning, good recordkeeping in facilities, and sustained regional supportive supervision are essential.

Although the seed has been planted, much work remains for availability of PPFP and PPIUD services to blossom across the region. PPFP and PPIUD indicators need to be incorporated into every country's HMIS, and facilities where these services are provided need to be supported to maintain service and data management quality as the ranks of trained providers grow. Connecting antenatal visits with labor and delivery and family planning units through counseling and provision of family planning is essential to ensure continuity across the continuum of reproductive health services.

Despite the challenges, this model has the potential to lead to a paradigm shift for family planning services in West and Central Africa. Fruitful South-South collaborations, improved data collection and reporting in facilities, and sharing program experiences with national MOHs and stakeholders across the region make the case for initiatives like this one to become embedded in countries' long-term family planning program frameworks.

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