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SUPPLEMENT ARTICLE

A facility birth can be the time to start family planning: Postpartum intrauterine device experiences from six countries



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ABSTRACT

Initiation of family planning at the time of birth is opportune, since few women in low-resource settings who give birth in a facility return for further care. Postpartum family planning (PPFP) and postpartum intrauterine device (PPIUD) services were integrated into maternal care in six low- and middle-income countries, applying an insertion technique developed in Paraguay. Facilities with high delivery volume were selected to integrate PPFP/PPIUD services into routine care. Effective PPFP/PPIUD integration requires training and mentoring those providers assisting women at the time of birth. Ongoing monitoring generated data for advocacy. The percentages of PPIUD acceptors ranged from 2.3% of women counseled in Pakistan to 5.8% in the Philippines. Rates of complications among women returning for follow-up were low. Expulsion rates were 3.7% in Pakistan, 3.6% in Ethiopia, and 1.7% in Guinea and the Philippines. Infection rates did not exceed 1.3%, and three countries recorded no cases. Offering PPFP/PPIUD at birth improves access to contraception.

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1. Background

In 2012, an estimated 222 million women in low-resource countries wanted to avoid pregnancy but were not using modern contraception [1]. For many of these women, childbearing begins at an early age, intervals between pregnancies are too short, and lifetime fertility is high [2]. The resulting fertility patterns lead to excess mortality and morbidity for both mothers and offspring [3–5]. Although family planning services are intended to address desires to space and limit births, typically they are offered separately from maternity services. The providers who work in family planning units frequently are not the same individuals who care for women prenatally, at birth, and postnatally, so opportunities

for integrating these services are limited. In many countries, institutional births are on the rise, and there is strong policy support for the use of skilled birth attendants. Thus, initiation of family planning during a facility stay at the time of birth is particularly opportune, especially since few women who give birth in a facility return for further postnatal care [6–8].

According to the World Health Organization (WHO), “postpartum family planning (PPFP) focuses on the prevention of unintended and closely spaced pregnancies through the first 12 months following childbirth” [9]. Operationalizing PPFP requires integration of family planning with maternal, newborn, and child health services (see Fig. 1). In the present paper, we define “immediate postpartum” as the first 48 hours after birth, “early postpartum” as the six weeks after a birth, and “extended postpartum” as the 12 months after a birth. The provision of a contraceptive method before discharge ensures that women are protected against pregnancy before they resume sexual activity or return to fecundity. Family planning programs with a wide range of contraceptive choices are associated with greater use and lower costs [10]. Yet, according to current WHO

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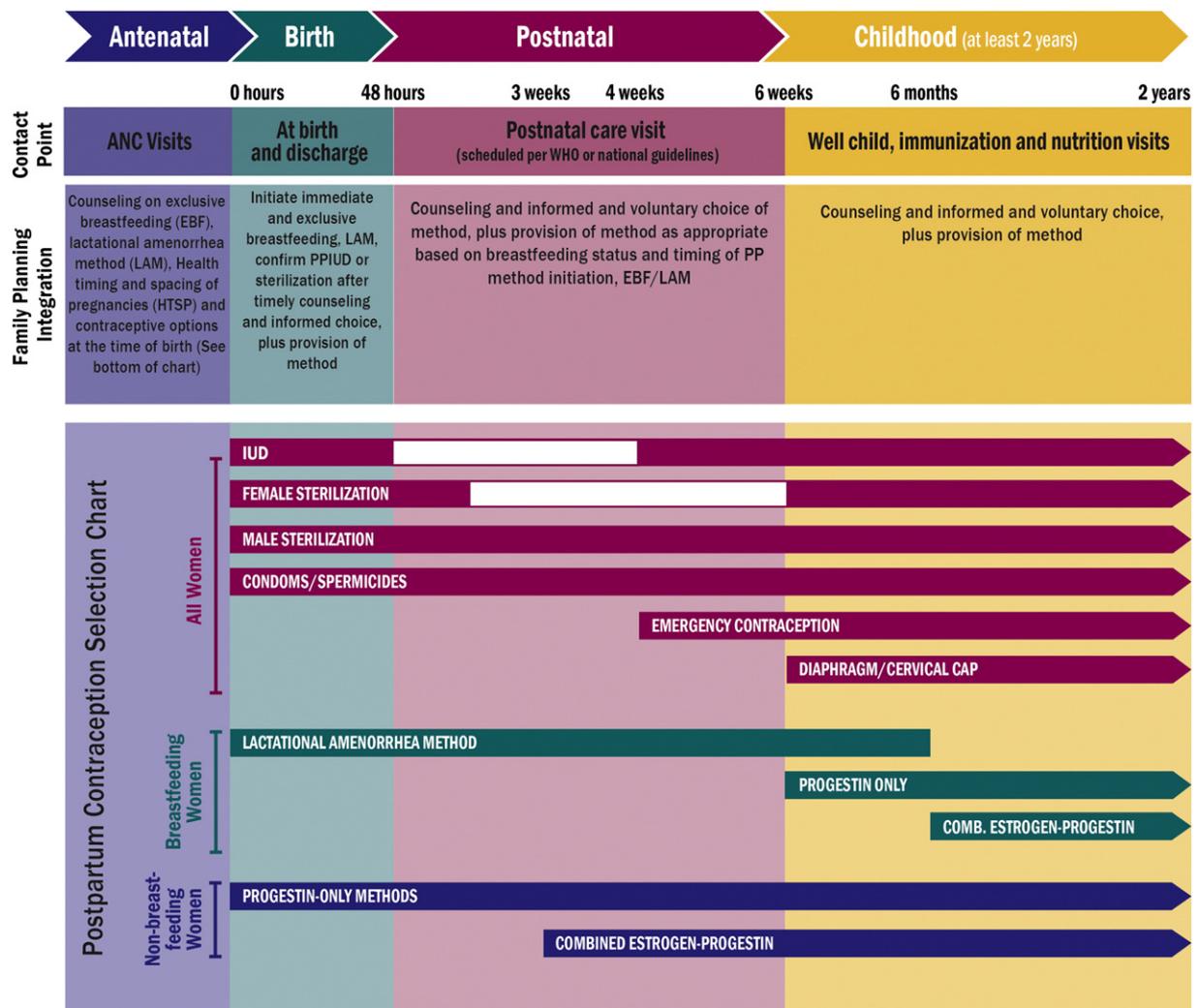


Fig. 1. Health-related contact points from pregnancy to the extended postpartum period and opportunities for family planning integration. Adapted with permission from World Health Organization [9].

recommendations, contraceptive choices are more limited during the early postpartum period, in particular for hormonal methods, if a woman follows recommendations to exclusively or predominantly breastfeed her baby [11,12]. Some countries allow progestin-only hormonal methods in the immediate postpartum for lactating women, but many follow the WHO’s recommendation to delay initiation of these methods for at least six weeks. Exclusive breastfeeding for the first six months, without resumption of menses—the lactational amenorrhea method (LAM)—is a highly effective method of family planning in the short term [13]. Other immediate contraceptive options include the postpartum intrauterine device (PPIUD), which is an intrauterine device (IUD) inserted soon after delivery, as opposed to the interval IUD inserted later, or postpartum tubal ligation. PPFPP includes any contraception used during the extended postpartum, regardless of timing of initiation, of which PPIUD is one option and is limited to the 48 hours after a birth. Quality programs always counsel women on all their PPFPP options. **Box 1** describes modalities for PPIUD insertion.

As a result of this convenient timing, PPFPP/PPIUD services can be organized to take advantage of prenatal care and labor and delivery as prime opportunities to address postpartum contraceptive needs. In many countries, PPFPP/PPIUD services also align with national efforts to promote facility-based births. However, early studies of PPIUDs that have examined different types and timings of insertion (up to seven days after birth) have found high expulsion rates, from 3.7% to over 30%, with mixed conclusions concerning post-placental or early

postpartum insertion. These studies did not describe the PPIUD insertion technique used other than to indicate hand or instrumental insertion [14–17].

In the present article, we present program experiences from six countries where Jhpiego or the Jhpiego-led and USAID-supported Maternal and Child Health Integrated Program (MCHIP) integrated PPFPP into maternal care, with PPIUD services offered. We describe the rollout and implementation of the programs, present service data on uptake and follow-up, and discuss operational challenges and solutions to support the scale-up and replication of PPIUD services in other countries. All six of the country programs used the Copper T 380A IUD. The Copper T is reversible and effective for 12 years, requires very little routine follow-up, and can be inserted within 10 minutes of placental expulsion, during cesarean deliveries, or within 48 hours after childbirth [18].

2. Methods and context

The authors reviewed program documentation, country-level monitoring and evaluation databases, and monthly summary reports from participating health facilities to assess commonalities and differences in program implementation. In Pakistan, Jhpiego staff obtained data compiled by facilities from the district or regional headquarters, while in Ethiopia, India, and the Philippines, data were obtained from monthly facility reports to program staff. In Guinea, monthly reports were sent to program staff at the same time as to the ministry of health (MOH). The

Box 1

Types of PPIUD insertions, timings, and modalities.

Insertion type	Timing	Provider	Description
Post-placental	0 to 10 minutes	Physician, midwives, nurses, and others	Insertion, either manual or instrumental, performed after a vaginal birth, immediately after expulsion of placenta. Assumes counseling and choice made prenatally.
Immediate postpartum or pre-discharge	10 minutes up to 48 hours	Physician, midwives, nurses, and others	Insertion performed later than 10 minutes after expulsion of placenta, typically the morning following the birth, by same or different provider. Sometimes called “morning after” insertion. Can be performed following postpartum counseling and choice in cases where prenatal counseling was not possible.
Intra-cesarean	During the cesarean delivery	Physicians and cadres authorized to perform cesarean deliveries	Insertion done during cesarean delivery, after expulsion of placenta and through the uterine incision, using either instruments or by hand. Uterine incision is closed once the intrauterine device is in place. This type of insertion assumes prenatal counseling and choice.

MOH of Rwanda provided the Rwanda data. The timing of interventions varied across countries, as did the availability of program data. Where country programs collected data with a lesser level of detail, we have indicated in our results that data are missing.

Secondary analysis of Demographic and Health Survey (DHS) data for prospective unmet need among women in the first year postpartum in the six countries shows high unmet need for family planning during the first year postpartum (Table 1) [19]. “Prospective unmet need” is based on DHS questions about desires for another child within the next two years (asked of postpartum women as of other nonpregnant women), whereas the standard unmet need definition is based on questions about whether a current or recent pregnancy was intended, for those women who are either pregnant or had a birth within the past two years. Total prospective unmet need for spacing and limiting births during the first 12 months after delivery ranged from 60.5% in the Philippines to 81.2% in Ethiopia. Overall, the use of IUDs ranged from a fraction of a percent of married women in Ethiopia, Guinea, and Rwanda to 3.7% of married Filipino women currently using a contraceptive [19]. Currently-married women in Pakistan and India reported IUD use of 1.7% and 2.3%, respectively.

3. PPIUD program elements: Process and variations

Table 2 shows the locations of PPF/PPIUD services in the six countries and the numbers and cadres of providers trained by Jhpiego and MCHIP from 2010–2013. India and the Philippines trained more physicians than nurses and midwives, whereas the other country programs did the opposite. From our experiences in these countries, we have synthesized common steps in the introduction of PPIUDs as part of a PPF program.

Table 1
Prospective unmet need for family planning among women in the first year postpartum.^a

Country (DHS year)	Percentage (%) of women with unmet need for spacing	Percentage (%) of women with unmet need for limiting	Total percentage (%) of women with unmet need
Ethiopia (2011)	50	31	81
Guinea (2005)	58	17	74
India (2005–2006)	33	33	65
Pakistan (2006–2007)	35	30	65
Philippines (2008)	24	36	61
Rwanda (2010)	33	29	62

Abbreviation: DHS, Demographic and Health Survey.

^a Source: USAID [19].

3.1. PPIUD service delivery models

Ideally, women would receive PPF counseling during prenatal care and decide which family planning method to use—a choice that would then be recorded in the prenatal care record and communicated to her provider when she arrives at the facility in early labor. However, if a client has not been counseled before birth, she can still be counseled during latent labor (if she is receptive) or in the immediate postpartum period. Active labor is not considered an appropriate time to provide PPF counseling. PPIUDs are provided to clients who want them and who do not have exclusion factors, i.e. unresolved postpartum hemorrhage or chorioamnionitis. Every woman's request for a PPIUD is confirmed immediately prior to insertion.

All six countries have adopted and trained providers on the insertion technique pioneered by Dr Vicente Battaglia Araujo, which focuses on achieving high fundal placement of the IUD. This is accomplished by elongating the cervical-uterine angle, elevating the uterus and the use of a long placental, or “Kelly,” forceps (Fig. 2) [20]. Placement of the IUD high in the fundus minimizes the risk of expulsion [21,22]. Jhpiego has also worked with an anatomic model manufacturer to devise a new uterine model, the “Mama-U,” that simulates the problem of the cervical-uterine angle to practice PPIUD insertion competencies.

3.2. Demand creation

Approaches to creating demand for PPIUDs have evolved over time. Initially, demand creation materials, such as counseling pamphlets and posters, were developed for use in both individual and group counseling settings to recruit patients attending prenatal care at facilities where PPIUD services were available. Women who were missed in prenatal care were counseled in early labor or postpartum. In all programs, this facility-based approach alone was enough to maintain a steady level of PPIUD acceptors. The workload associated with PPF counseling led the India program to develop and hire a new cadre of dedicated counselors for this purpose: social workers assigned to facilities providing PPIUDs. In 2011 and 2012, providers and obstetrics and gynecology faculty successfully advocated to the Government of India to hire these counselors as facility staff. As a result, in 2012, more than 1300 new positions were created for dedicated counselors at high-volume facilities across the country through the National Rural Health Mission. The dedicated counselors are typically stationed adjacent to the prenatal care ward in facilities, and all women who access prenatal care are routed through the counselor. The counselor also performs rounds in the maternity and postnatal wards to counsel women on PPF.

Table 2
Country program postpartum intrauterine device site and training profiles.

Country	Dates of reporting	Catchment area population	Number of Jhpiego-assisted facilities		Number of providers trained	
			Health centers	Hospitals	Doctors	Nurses/midwives
Ethiopia	March 2012–July 2013	33 255 949	3	15	7	54
Guinea	April 2011–April 2013	2 550 393	4	14	19	22
India	February 2010–April 2013	1 141 158 597	0	330	1385	705
Pakistan	September 2012–June 2013	1 466 465 + (estimated)	0	20	84	413
Philippines	January–June 2013	12 904 871	1	9	16	7
Rwanda	May 2010–February 2013	unknown	8	5	12	32

Over time, strategies to extend demand generation beyond the facility have emerged. Guinea relies on community health workers to spread the word about PPF services, while Pakistan supplies PPF leaflets and counseling cards to lady health workers operating at the community level. Indian states now involve community-based, accredited social health activists (ASHAs) in demand generation. Future efforts might involve mass media.

3.3. Policy and advocacy

A policy to introduce PPIUDs was common across the six countries, as governments and ministries of health aimed to address unmet need for contraception and reduce the proportion of short birth intervals. In India, the Ministry of Health and Family Welfare launched a national strategy in 2009 to reinvigorate PPIUD use as part of a maternal, newborn, and child health initiative. These revitalization efforts dovetailed with the government-initiated *Janani Suraksha Yojna* (safe motherhood) scheme, which encouraged childbirth with a skilled birth attendant and has resulted in a more than 15-fold increase in institutional deliveries since 2005 [23]. In Guinea, the Philippines, and Rwanda, national strategies to revitalize family planning emphasized long-acting methods, including PPIUDs. In the Philippines, the Department of Health approved in late 2013 a separate guideline for PPF, which includes the PPIUD [24]. Similarly, the Federal Ministry of Health (FMOH) of Ethiopia supported expanding access to services by incorporating Jhpiego's PPIUD training package into the national training package for family planning. In Pakistan, Jhpiego collaborated with the health and population departments at the subnational level to establish PPF services at public health facilities.

The decision to initiate a PPF program that includes PPIUDs involves engagement of international and national experts with relevant ministry officials. The favorable change in WHO medical eligibility criteria for IUDs in the immediate postpartum to category 1 has influenced this decision in many countries [11]. In India, leading voices from reputable universities were instrumental in reviewing the literature on PPIUDs and addressing concerns about expulsion rates. The

program strategically introduced PPIUD services in one medical college and expanded them to other states after carefully documenting that the expulsion rate remained low. Experts in Rwanda conducted an operations research study to assess feasibility, and the results were used to inform guidelines for PPIUD insertion. In both Pakistan and Ethiopia, intensive policy engagement focused first on the provincial and regional levels before moving to national scale. In Pakistan, a technical working group with members from the public and private sectors and nongovernmental organizations developed a PPF strategy and implementation plan. The group held several advocacy meetings and presented the plan at meetings and seminars organized by professional obstetrics and gynecology bodies and a medical university. In Ethiopia, early engagement and advocacy to support initiating PPF/PPIUD service delivery in select facilities focused on regional health bureaus as gatekeepers for the individual facilities. The FMOH focal person was aware of the proposed PPIUD introduction at the regional level but not the details of the program. At a national family planning symposium in November 2012, an update on the program's progress attracted national attention and resulted in significant policy support at the federal level. In all countries, the PPF/PPIUD programs would not have been possible without ministry leadership and ownership.

Engagement with government decision-makers, medical, or academic gatekeepers to advocate regarding the safety and benefits of PPF/PPIUD services has been a key and ongoing component of the programs. In preparation for initiating PPIUD services, Rwandan stakeholders visited a demonstration program in Kenya [25], while project staff in Pakistan looked for opportunities at professional meetings to marshal interest in and overcome resistance to PPIUDs. All six countries needed continued advocacy after initiation of PPIUD services and have shared their progress along the way, including service data on expulsions and infections, to help address resistance. For example, in the Philippines, the program worked to incorporate PPIUD into new clinical practice guidelines for cesarean delivery and family planning. In India, whenever the program expands to new states, it begins with a state-level workshop for the heads of all district health teams.

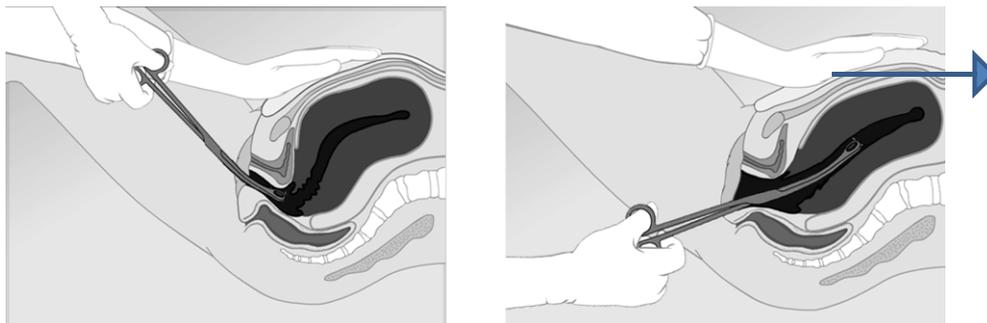


Fig. 2. Illustration of uterine extension during placement of postpartum intrauterine device. Adapted with permission from Jhpiego [20].

3.4. Site selection and training

Site selection for PPIUD services has focused on facilities with: (1) a high volume of deliveries; (2) interested providers; and (3) adequate staff to integrate PPIUD service delivery into routine care, along with the ability to conduct supportive supervision. Through needs assessments, programs identified sites with high delivery caseloads and gaps in equipment and training. In the Philippines, the program specifically selected “centers of excellence” in 10 geographical areas to serve as model service delivery sites for training, with the intent of increasing sustainability. In Pakistan, the program conducted qualitative formative research with new mothers, husbands, and grandmothers (mothers-in-law) to help craft better counseling messages and educational materials. In Guinea, the program started in six high-volume facilities in the capital city, Conakry. The facilities served as clinical practicum sites for medical and midwifery school students. The program then expanded to sites in the interior of the country. In all six programs, instrument kits—containing, in particular, long placental forceps such as Kelly forceps—were distributed when training was initiated. In some countries, such as Ethiopia and Pakistan, infection prevention materials were also provided. In both the Philippines and India, the government has taken over the procurement of instruments at the state level. In India, a country-approved manufacturer produces modified long placental forceps.

All six programs also developed a pool of national trainers who could support program expansion and sustainability. In Ethiopia, Guinea, Pakistan, and Rwanda, training of healthcare providers began with a training event on general PPFPP counseling, which targeted providers from the prenatal care, labor and delivery, and postnatal wards and covers all contraceptive options, including LAM. The PPFPP counseling event was followed by a course on PPIUD insertion (covering all types of insertion) for labor and delivery staff. During the time between training events (an interval that ranged from two weeks to several months across the programs), clients were counseled on PPFPP, including PPIUDs, and facilities increased their caseloads of PPIUD acceptors. In Pakistan and the Philippines, general information on PPFPP was incorporated into a PPIUD course for prenatal care and maternity clinicians.

Where PPIUD services were still a novelty, failure to communicate with facility staff about the introduction of the services sometimes resulted in instances of nontrained staff influencing clients to reverse their decision about PPIUD. As a result, whole-site orientations for all facility staff members, not just those who attended training, have been conducted in all programs. These orientations have even included cleaning and support staff so all staff would be informed about the service integration and respond accurately to client questions about the availability of PPIUD services.

The timing of the orientations varied across programs. In Guinea, for example, the orientation takes place immediately after training and before the start-up of services; in Pakistan and the Philippines it is held after training as part of onsite mentoring or supportive supervision visits by technical staff. In both Guinea and Ethiopia, participants in the training carry out this orientation as part of their post-training action plan, which is subsequently monitored by program staff in follow-up visits.

3.5. Post-training and ongoing monitoring

Ongoing supportive supervision visits and post-training follow-up visits to support the transfer of learning enable programs to reinforce provider performance, promote quality of services, and troubleshoot issues with service delivery or equipment. The visits enable newly trained providers to reorganize processes in a way that optimizes a consistent supply of instruments and contraceptives in the delivery rooms and initiate PPFPP/PPIUD services with help from trainers. Post-training transfer-of-learning visits are conducted in all but the Philippines program. In the Philippines, structured supportive supervision visits,

coordinated with government, begin immediately after training to reinforce provider performance, promote quality services, and troubleshoot. The programs in Ethiopia, Guinea, India, Pakistan, and Rwanda also conduct quarterly supportive supervision visits. In some cases, like Guinea, program staff conduct these visits, while elsewhere, like Pakistan, these are conducted jointly with government supervisors. Structured tools are used to support supervision in India, Pakistan, and the Philippines.

Because routine health management information systems (HMIS) are not yet adapted for tracking PPIUDs, as they are for interval IUD insertions and removals, programs have established a variety of supplementary records and data collection tools and systems, including modified or separate registers in prenatal and labor and delivery wards, client cards, or other similar files kept in facilities. The need to capture country-specific data and evidence of the feasibility and safety of PPFPP/PPIUD services justified the request for supplemental data reporting. Guinea and the Philippines have included PPFPP on their national HMIS forms. The Guinea National HMIS and National Safe Motherhood Program approved a modified labor and delivery register with a column added for PPFPP counseling and LAM use, as well as a separate register for recording PPIUD insertions. The Philippines approved a new version of a family planning form that includes PPIUD, but this form has yet to be widely disseminated. In Guinea, India, Pakistan, and the Philippines, facilities prepare monthly summary reports to share with relevant health authorities. Because only a subset of clients typically return for a postnatal visit, during which a PPIUD can be checked, three programs—Guinea, India (selected facilities), and the Philippines—monitor use after discharge by having providers call women to ask about complications or expulsions.

In Guinea, India, Pakistan, and Rwanda, programs use a special stamp to indicate that a woman has received PPFPP counseling in prenatal care and to specify the method, if any, that she has elected to use postpartum. The stamp is placed on the client's prenatal care card, which she then brings with her to the facility at the time of birth. In the Philippines, where facilities are developing their own means to track clients from prenatal care to delivery, one center is using the woman's birth plan to record PPFPP counseling and her choice of method.

4. Results

Table 3 presents the proportion of eligible women in the six programs who were counseled on PPFPP and accepted a method. The Pakistan and Philippines programs counseled more women at prenatal care than at the time of birth. Ideally, all women delivering in facilities would have been counseled at prenatal care and made their choice at that time, but tracking counseling offered in facilities other than that of the birth facility poses a challenge. Percentages of PPIUD acceptors ranged from 2.3% of women counseled in Pakistan to 5.8% in the Philippines. When accounting for all facility births, India had the highest percentage of acceptors, with 6.9% of women who delivered in Jhpiego-assisted facilities electing to have a PPIUD. The India program was the most extensive, reaching more than 99 000 women over the course of about three years (February 2010 to April 2013). Timing of PPIUD insertion varied among countries (Fig. 3), with Pakistan achieving the highest proportion of postplacental IUD insertions (68%) and Rwanda the highest proportion of insertions during cesarean deliveries (43%). Ethiopia had the highest proportion of insertions during the immediate postpartum period (53%) and the lowest percentage during cesarean deliveries (3%). Only three countries systematically track alternative methods of immediate postpartum contraception. LAM uptake is higher than PPIUDs in Ethiopia (8% of facility births) and Guinea (29% of births), whereas documented LAM uptake is roughly equivalent to PPIUD acceptance in Pakistan.

Rates of complications noted during six-week postpartum follow-up visits were collected from facility registers in five of the six country programs (Table 4). Although the proportion of women who returned to the hospital or health center for follow-up varied greatly, data on

Table 3
Postpartum family planning counseling and method acceptors by country.

Country	No. of facility births	Number of women counseled on PPFPP by timing				Number of women accepting PPFPP by method				
		Prenatal care	Labor	Postpartum	Total ^a	LAM	PPTL	PPIUD	PPIUD as percentage (%) of women counseled	PPIUD as percentage (%) of facility births
Ethiopia	28 226	6164	4549	5676	16 389	2180	309	620	3.8	2.2
Guinea	61 814	--	--	--	20 699 ^b	18 048	213	2438	11.8 ^b	3.9
India	1 450 084	1 135 280	--	632 600	1 767 880	--	--	99 470	5.6	6.9
Pakistan	182 930 (estimated)	24 618	--	9884	34 502	1062	1172	796	2.3	0.4
Philippines	--	19 578	--	14 322	33 900	--	--	1957	5.8	--
Rwanda	--	--	--	--	--	--	--	1147	--	--
Total	1 723 054	--	--	--	--	--	--	106 428	--	--

Abbreviations: LAM, lactational amenorrhea method; PPFPP, postpartum family planning; PPIUD, postpartum intrauterine device; PPTL, postpartum tubal ligation.

^a It is likely that some women were double-counted in the total number of women counseled on PPFPP since women may have been counseled at multiple visits.

^b For Guinea, the total number of women counseled is an estimate constructed as a sum of all LAM, PPTL, and PPIUD acceptors (all of whom received counseling). Women who were counseled but did not opt for one of these methods prior to discharge are thus not captured in this total, artificially inflating the percentage of PPIUD acceptors among women counseled on PPFPP.

returning PPIUD acceptors showed low rates of complications. The highest expulsion rates were 3.7% in Pakistan and 3.6% in Ethiopia, while Guinea and the Philippines had the lowest rates at just 1.7%. Rates of infection did not reach higher than the 1.3% recorded in Guinea, with two countries—Ethiopia and the Philippines—recording no cases of infection during follow-up visits.

5. Discussion

The overarching lesson from these programs is the importance of engaging government leadership and building local ownership for PPFPP/PPIUD programs. As the Pakistan program found, building ownership at multiple levels of the healthcare system and sustaining that ownership at the district level can be challenging. Providers’—including specialists’—myths and misconceptions about IUDs, and specifically PPIUDs, must be addressed as part of stakeholder engagement and the establishment of services at each new facility. In Rwanda and Guinea, programs have identified champion providers who are instrumental in ensuring success.

Supplying facilities with sufficient instruments for service delivery and ensuring that they have a regular source of commodities, positioned in maternity, is a basic minimum for continued service delivery. Integration of counseling at every possible contact with a client, whether prenatal, at birth, or in the immediate postpartum period, means integration at multiple points and by multiple providers to ensure consistent access. At the same time, emphasizing universal prenatal counseling for PPFPP that includes PPIUDs is key to increasing the

proportion of postplacental PPIUD insertions, the insertion timing that minimizes discomfort for the client. All countries could improve the coverage of prenatal counseling for PPFPP, or the proportion of prenatal care clients counseled, although it is difficult to determine individual prenatal care coverage given that clients are expected to have repeat prenatal care visits.

The country programs in India and the Philippines have sought to saturate facilities with trained PPIUD providers, whereas the other programs have struggled with staff turnover. In India, this saturation has enabled widespread institutionalization of the service. In the Philippines, capacitating providers as trainers has helped to ensure that more providers, including residents, are involved in service delivery, and that the program is prepared to expand from the 10 centers of excellence outward, including reaching out to private sector midwives. Post-training support to facilities, either through transfer-of-learning follow-up visits, supportive supervision visits, or other strategies for assistance has been crucial to address quality gaps in the medium term.

Ensuring that all staff in a given facility are aware of and understand the messages around the introduction of PPIUDs has been essential, particularly during expansion to new sites. This review did not detect any implications of the variation in timing in programs’ whole-site orientations, but failing to hold such orientations appears to contribute to low uptake of the service.

Record-keeping systems for monitoring PPIUD services help show where improvement is needed. Transparent sharing of monitoring results allows for continued advocacy for expansion to government

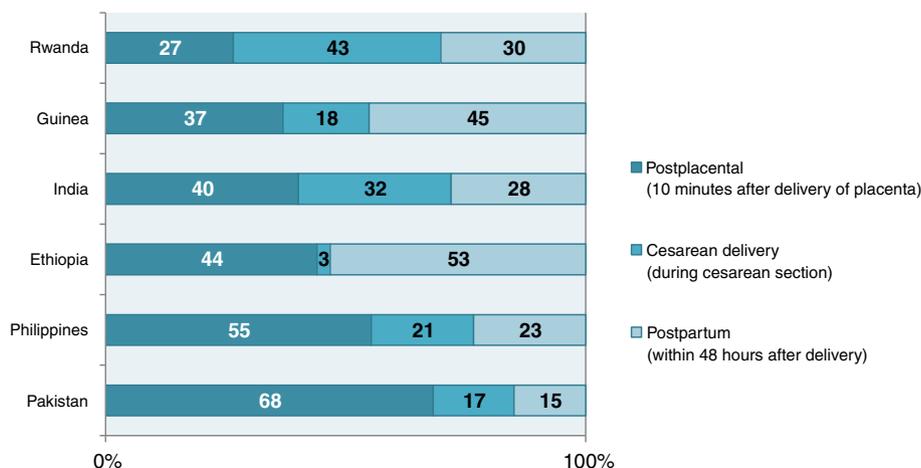


Fig. 3. Percentage of postpartum intrauterine device insertions by timing and country.

Table 4
Postpartum intrauterine device follow-up and complications by country.^a

Country	PPIUD acceptors who returned for follow-up		PPIUD acceptors who returned for follow-up with a complication		Complications					
	Expulsions	Infections	Removals	Expulsions	Infections	Removals	Expulsions	Infections	Removals	
Ethiopia	329	(53.1)	19	(5.8)	12	(3.6)	0	(0.0)	7	(2.1)
Guinea	2008	(82.4)	74	(3.7)	35	(1.7)	27	(1.3)	12	(0.6)
India	37 252	(37.5)	2937	(7.9)	989	(2.7)	361	(1.0)	1587	(4.3)
Pakistan	269	(33.8)	41	(15.2)	10	(3.7)	2	(0.7)	29	(10.8)
Philippines	641	(32.8)	15	(2.3)	11	(1.7)	0	(0.0)	4	(0.6)
Total	40 499	(38.1)	3086	(7.6)	1057	(2.6)	390	(1.0)	1639	(4.0)

Abbreviations: PPIUD, postpartum intrauterine device.

^a Values are given as number (percentage).

stakeholders and better informs those who expect to see high expulsion rates or other adverse consequences. Keeping records of counseling from one contact to the next in the continuum of care has proven challenging, as has capturing the adoption of methods other than the PPIUD (e.g. LAM or condom use). Innovations are still needed to perfect those processes, perhaps with the use of electronic medical records, and more experience is needed to inform how HMIS can and should track PPIUD uptake. Nevertheless, ongoing monitoring of program data offers managers and policymakers essential information for decision-making.

There is a dearth of detail on PPIUD implementation in the published program literature. The findings and results presented here are all from introductory phases of programming, except in India, where the program is in an expansion phase and has now reached 20 states and hundreds of facilities. We strongly believe that the focus on PPIUD insertion technique with IUD placement high in the fundus is what has enabled these programs to demonstrate low expulsion rates that are equivalent to those from interval IUD insertion [26]. Furthermore, attention to quality and counseling, along with carefully planned and coordinated program implementation, has brought promising results in terms of acceptance of PPIUDs. The absence of reports of uterine perforation in these data is consistent with a global review by Kapp et al. [27]. While we did not report on client satisfaction, the India program has published results from a special study of clients [28].

There are limitations to our findings, as is expected with data collected in program settings rather than rigorously controlled research environments. We report only on continuation and complications seen at the six-week postnatal visit, but additional expulsions and removals likely will occur throughout the first year postpartum. We could not analyze client data through multiple contacts, so we do not know how many women who opted for a PPIUD during prenatal care did not actually obtain the method, either because they could not reach the facility for the birth, the service was not available in the immediate postpartum period, or they changed their mind after further discussion with family or peers. These data do not include any observation of the quality of counseling. Nevertheless, with vast numbers of women expressing unmet need for both birth limiting and birth spacing, particularly in the year following childbirth, the robust uptake among women counseled in six diverse low- and middle-income countries shows the viability of making PPIUDs more widely available to prevent unintended pregnancies in low-resource settings.

6. Conclusion and recommendations

Women around the world are at risk of unintended pregnancy in the postpartum period and need improved access to effective contraception methods before they resume sexual activity and their fertility returns. Equipping and motivating maternal health providers to offer PPIUD counseling in prenatal care and at the time of birth improves access to contraception. For integration of PPIUD services to be effective, the target of training and mentoring must be different than it is for traditional family planning programs: the focus must be on prenatal care and maternity staff, those assisting women at the time of birth. In

most low-resource contexts, midwives and obstetric nurses are the cadres with the most contact with women during birth. To succeed, PPIUD programs require effective counseling in the prenatal period, availability of trained and competent staff at the time of birth, and adequate follow-up of trained providers. IUDs, including PPIUDs, are among the safest and most effective methods of contraception. They offer the additional advantage of being “forgettable” contraception, in the sense that little or no follow-up is required, other than for removal of the device. But ensuring widespread access to this convenient and cost-effective method requires greater acceptance and uptake among maternal healthcare teams in clinical settings and the larger maternal health community. Data and evidence on acceptability, feasibility, and complication rates of PPIUDs can play a part in ongoing advocacy for expanding access to this underutilized PPIUD method.

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Conflict of interest

The authors have no conflicts of interest to declare.

References

- [1] Singh S, Darroch JE. Adding it up: costs and benefits of contraceptive services. Estimates for 2012. New York: Guttmacher Institute, United Nations Population Fund; 2012. <http://www.guttmacher.org/pubs/AIU-2012-estimates.pdf>. Accessed April 27, 2014.
- [2] Williamson N. Motherhood in childhood: facing the challenge of adolescent pregnancy. State of world population 2013. New York: United Nations Population Fund; 2013. <http://www.unfpa.org/webdav/site/global/shared/swp2013/EN-SWOP2013-final.pdf>. Accessed April 27, 2014.
- [3] Cleland J, Conde-Agudelo A, Peterson H, Ross J, Tsui A. Contraception and Health. *Lancet* 2012;380(9837):149–56.
- [4] Kozuki N, Lee A, Silveira MF, Victora CG, Adair L, Humphrey J, et al. The associations of birth intervals with small-for gestational-age, preterm, and neonatal and infant mortality: a meta-analysis. *BMC Public Health* 2013;13(Suppl. 3):S3.
- [5] Kozuki N, Walker N. Exploring the association between short/long preceding birth intervals and child mortality: using reference birth interval children of the same mother as comparison. *BMC Public Health* 2013;13(Suppl. 3):S6.
- [6] The Partnership for Maternal, Newborn and Child Health. Opportunities for Africa's newborns: practical data, policy and programmatic support for newborn care in Africa. <http://www.who.int/pmnch/media/publications/africannewborns/en>. Published 2006. Accessed April 27, 2014.
- [7] Singh A, Padmadas SS, Mishra US, Pallikadavath S, Johnson FA, Matthews Z. Socio-economic inequalities in the use of postnatal care in India. *PLoS One* 2012;7(5): e37037.
- [8] Regassa N. Antenatal and postnatal care service utilization in southern Ethiopia: a population-based study. *Afr Health Sci* 2011;13(3):390–7.
- [9] World Health Organization. Programming strategies for postpartum family planning. Geneva: WHO; 2013. <http://www.mchip.net/sites/default/files/Postpartum-family-planning.pdf>. Accessed April 24, 2014.

- [10] Pariani S, Heer DM, Van Arsdol Jr MD. Does choice make a difference to contraceptive use? Evidence from East Java. *Stud Fam Plann* 1991;22(6):384–90.
- [11] World Health Organization. Medical eligibility criteria for contraceptive use. 4th ed. Geneva: WHO; 2010. http://whqlibdoc.who.int/publications/2010/9789241563888_eng.pdf. Accessed April 27, 2014.
- [12] World Health Organization. Guidelines on maternal, newborn, child and adolescent health: recommendations on maternal and perinatal health. Geneva: WHO; 2013. http://www.who.int/maternal_child_adolescent/documents/guidelines-recommendations-maternal-health.pdf. Accessed April 27, 2014.
- [13] Peterson AE, Perez-Escamilla R, Labbok MH, Hight V, von Hertzen H, Van Look P. Multicenter study of the lactational amenorrhea method (LAM) III: effectiveness, duration, and satisfaction with reduced client–provider contact. *Contraception* 2000;62(5):221–30.
- [14] Chi IC, Farr G. Postpartum IUD contraception: a review of international experience. *Adv Contracept* 1989;5(3):127–46.
- [15] Celen S, Möröy P, Sucak A, Aktulay A, Danişman N. Clinical outcomes of early postplacental insertion of intrauterine contraceptive devices. *Contraception* 2004;69(4):279–82.
- [16] Eroglu K, Akkuzu G, Vural G, Dilbaz B, Akin A, Taskin L, et al. Comparison of efficacy and complications of IUD insertion in immediate postplacental/early postpartum period with interval period: 1 year follow-up. *Contraception* 2006;74(5):376–81.
- [17] Grimes DA, Lopez LM, Schulz KF, Van Vliet HA, Stanwood NL. Immediate postpartum insertion of intrauterine devices. *Cochrane Database Syst Rev* 2010;5:CD003036.
- [18] Long-term reversible contraception: Twelve years of experience with the TCu380A and TCu220C. *Contraception* 1997;56:341–52.
- [19] USAID. Measure DHS statcompiler. <http://dhsprogram.com/data/STATcompiler.cfm>. Accessed April 27, 2014.
- [20] Jhpiego. Postpartum intrauterine contraceptive device (PPIUD) services: a reference manual for providers. Baltimore, MD: Jhpiego Corporation; 2010. <http://reprolineplus.org/resources/postpartum-intrauterine-contraceptive-device-ppiud-services-learning-resource-package>. Accessed November 11, 2014.
- [21] Araujo VB, Ortiz L, Smith J. Postpartum IUD in Paraguay. A case series of 3000 cases. *Contraception* 2012;86(2):173–4.
- [22] Cordero CF, Barone MA, Calderon V. A postpartum IUD program in the Dominican Republic. *Int J Gynecol Obstet* 1996;55(2):181–2.
- [23] Ministry of Health and Family Welfare. NHM Health Management Information System (HMIS). <https://nrhm-mis.nic.in>. Accessed April 27, 2014.
- [24] Department of Health. Postpartum family planning: Supplement to the Philippines clinical standards manual on family planning. Manila, Philippines: Department of Health; 2013.
- [25] Charurat E, Ayuyo CM, Muthoni J, Kamunya R, Archer L, Koskei N, et al. An assessment of postpartum intrauterine contraceptive device services in Embu, Kenya. https://www.k4health.org/sites/default/files/Kenya%20PPIUCD%20Assessment%20Report%204Feb11_Final.pdf. Published 2011. Accessed May 2, 2014.
- [26] Whiteman MK, Tyler CP, Folger SG, Gaffield ME, Curtis KM. When can a woman have an intrauterine device inserted? A systematic review. *Contraception* 2013;87(5):666–73.
- [27] Kapp N, Curtis KM. Intrauterine device insertion during the postpartum period: a systematic review. *Contraception* 2009;80(4):237–36.
- [28] Kumar S, Sethi R, Balasubramaniam S, Charurat E, Lalchandani K, Semba R, et al. Women's experience with postpartum intrauterine contraceptive device use in India. *Reprod Health* 2014;11:32.