Helping postpartum women in Mali achieve their fertility intentions: Perspectives from the dedicated PPIUD inserter pilot program
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EXECUTIVE SUMMARY

The West African country of Mali has one of the world’s highest fertility rates and one of the lowest rates of modern contraceptive prevalence (mCPR). In Mali, more than 1 in 4 women have an unmet need for family planning (FP). This gap between method demand and access is particularly acute for postpartum women, with nearly 70% reporting an unmet need. In 2016, PSI-Mali piloted a new healthcare device to help address this gap. **The dedicated postpartum (PP) intrauterine device (IUD) inserter replaces the technique of using Kelly forceps for voluntary IUD insertion for women in the post-placental and immediate postpartum period, i.e. within 48 hours post-delivery.** The dedicated PPIUD inserter is designed to facilitate easier insertion, with the aim of improving the PPIUD experience for clients and providers.

This case study documents PSI-Mali’s programmatic approach to introducing the dedicated PPIUD inserter and shares insights on the perspectives of providers using the inserter and on trends in voluntary PPIUD uptake during the program pilot. Primary and secondary data were collected during visits in July 2017 to 5 health facilities (3 public, 2 private) in Bamako that were participating in the PPIUD inserter pilot, including interviews with 10 trained providers.

Service uptake trends reveal an overall increase in the voluntary uptake of PPIUD services coinciding with the introduction of the dedicated inserter as compared to before the pilot began when forceps were used for immediate postpartum insertion. Trends in inserter-assisted service uptake vary across facilities and between sectors. Despite a lower number of total deliveries, a higher proportion of postpartum clients of private sector facilities where the inserter was in use chose a voluntary PPIUD before discharge as compared to the rate at public sector facilities participating in the pilot.

Qualitative findings show strong acceptability and preference among providers for the dedicated PPIUD inserter versus the forceps insertion technique. Providers cited ease, speed, and reduced associated risks as benefits of the dedicated inserter. Analysis of client data from 2016 and 2017 shows that clients choosing a voluntary PPIUD service at pilot-participating facilities had lower levels of education than the general population of Malian women, suggesting that the pilot program is effectively reaching clients with lower education levels, and, by association, lower socio-economic status. While clients choosing PPIUD from private sector facilities using the dedicated inserter included a broad age range, 45% of public sector PPIUD clients were 30 to 39 years of age, suggesting the need for further examination of whether postpartum family planning (PPFP) counseling is more proactively offered to older or multiparous women.

Further research is needed to fully understand the reasons that clients choose a PPIUD and the causal factors behind the differences in patterns of uptake between public and private facilities. Recommendations stemming from this case study include the need to ensure consistent availability of PPIUD in the postpartum method mix and the need to increase community sensitization, with a focus on male involvement, and sensitization during antenatal counseling to PPIUD as a postpartum FP option. If demand increases and providers have the capacity and motivation to meet that demand, voluntary PPIUD services present an excellent opportunity to respond to the high unmet need for postpartum family planning in Mali.
1. BACKGROUND

The West African country of Mali has among the highest maternal and infant mortality rates in the world: 587 per 100,000 live births\(^1\) and 75 per 1,000 live births\(^2\) respectively. The fertility rate is high at 6.1 children per woman, and the mCPR is among the world’s lowest at 10%.\(^3\) More than 1 in 4 women have an unmet need for FP – 19% for spacing and 7% for limiting births.\(^4\) A survey of DHS data from 2016 revealed that nearly 70% of postpartum women in Mali have an unmet need for FP.\(^5\) Postpartum abstinence is practiced for a relatively short period of time (median 2.2 months), and half of women are at risk of becoming pregnant again 11.7 months after giving birth.\(^6\) Nearly a quarter of the annual 750,000 births in Mali are within short birth intervals (<24 months),\(^7\) representing a missed opportunity to significantly reduce maternal and child mortality by lengthening birth intervals.\(^8\) Antenatal visits are attended at least once by 48% of pregnant women and at least 4 times by 38% of pregnant women.\(^9\) Nearly 60% of births are attended by a skilled birth attendant,\(^10\) but only 40% of women and neonates receive postnatal care in the 2 days following delivery.\(^11\) These patterns of contact between women and their maternity care providers suggest strong potential for the increased role of voluntary PPIUD in helping women meet their fertility intentions within the context of access to a range of methods that are medically appropriate for immediate postpartum women.

Established in Mali in 2001 to improve reproductive health and child survival as well as other critical health areas, PSI-Mali works to expand access to postpartum family planning (PPFP). In 2011, PSI-Mali launched voluntary PPIUD services using conventional IUDs (the copper T380A) packaged for interval insertions. Between 2011 and 2015, 141 health providers and stakeholders (21 from the private sector and 121 from the public sector) from Bamako, Kayes and Sikasso participated in PSI-Mali’s PPIUD training program. Over 2,300 women were provided with voluntary PPIUD through the initial phase of the program, but conventional IUDs for immediate postpartum women came with certain challenges. Providers needed to use Kelly forceps not usually found in the maternity ward for insertion and needed to sterilize extra equipment. Further, due to the shape of the postpartum uterus, the strings were too short to be visible once the PPIUD is inserted, inhibiting the provider’s ability to know whether the PPIUD was correctly in place. One PSI-Mali program staff member summarized the challenges she witnessed:

“I admit that with the old insertion technique, the echoes we heard [from providers] were not very favorable…it was difficult to use, much more complicated, it needed to be sterilized…it was difficult for the providers.” (PSI-Mali staff member)

Responding to the global need for a product specifically designed for PPIUD insertions, PSI developed a new dedicated PPIUD inserter with the Stanford Program for International Reproductive Education and Services (SPIRES) and Pregna International Ltd. The new product eliminates the need for forceps by elongating the insertion tube, which is firm but bends to accommodate the shape of the postpartum uterus and has a longer string that is visible after PPIUD insertion.\(^8\) The IUD product itself remains the same (the copper T380A) with only the insertion packaging differing. Trials in India found that the dedicated PPIUD inserter was effective, safe and had high acceptability among women and providers.\(^9\)

2. PROGRAM APPROACH

As the first country in sub-Saharan Africa to introduce the dedicated PPIUD inserter, the aim of PSI-Mali’s pilot program was to improve delivery of voluntary PPIUD services. The pilot aimed to generate lessons learned to inform strategy for increasing availability of voluntary PPIUD in Mali and provide a valuable roadmap for introduction and scale-up of voluntary PPIUD in the West Africa region and beyond.

Starting with a foundation of 5 years of experience supporting introduction of voluntary PPIUD (using a forceps insertion technique) into the package of maternal health services, PSI-Mali introduced the dedicated PPIUD inserter in March 2016. A select group of 18 providers from 10 public health facilities were trained.

For the pilot phase, PSI-Mali selected providers and facilities that met key criteria:

- A sufficiently high volume of deliveries to increase the likelihood of higher volume of voluntary PPIUD services, enabling providers to build and maintain their skills
- Experience of PPIUD insertions with forceps (or interval IUD insertions as a minimum)
- Demonstrated commitment from providers to counsel and provide voluntary PPIUD

After the initial training, PSI-Mali provided a range of ongoing support to trained providers and sites during the pilot phase, including:

- Community sensitization
- Supportive supervision
- Supplies
- Record keeping and data collections support

Over the first 3 three months, a review by PSI-Mali of services delivered using the dedicated inserter found 10 expulsions out of 343 insertions (2.9%), lower than the proportion found in previous studies\(^10\), and two providers subsequently received further coaching. Initial training sessions also allowed PSI-Mali
to identify experienced and motivated providers to be trained as trainers, growing the pool of trainers for the successive roll out and supervision of the dedicated PPIUD inserter program.

Building on the initial first 3 months, PSI-Mali launched the dedicated inserter pilot program that encompassed provider training, supportive supervision, and service delivery by trained public and private providers. Between March 2016 and May 2017, PSI-Mali trained 90 providers on the dedicated PPIUD inserter.

| BETWEEN MARCH 2016 AND MAY 2017, PSI-MALI TRAINED 90 PROVIDERS ON THE DEDICATED PPIUD INserter |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------|
| # OF PUBLIC PROVIDERS | # OF PRIVATE PROVIDERS |
| BAMAKO | 34 | 36 |
| KAYES | 6 | 14 |
| TOTAL | 40 | 50 |

As part of the training plan, all providers trained in the dedicated PPIUD inserter receive post-training supervision and ongoing supportive supervision from PSI-Mali supervisors and/or the pool of trained providers. During the pilot, the PPIUD was provided for free in both the public and private facilities.

3. METHODS OF DATA COLLECTION AND ANALYSIS

Data that informs this case study were collected in Mali in July 2017. Service data was collected from PSI-Mali’s internal management information system (MIS) and from client registers for PPIUD services performed in PSI-trained facilities. Data were analyzed for trends in voluntary PPIUD uptake before and after the introduction of the new inserter.

Key informant interviews were conducted with:

- 4 PSI-Mali operational and clinical staff
- 10 providers (6 midwives, 2 gynecologists, and 2 doctors) trained in the dedicated PPIUD inserter.

The providers interviewed worked in 5 health facilities in Bamako:

- 3 public sector referral health centers, known as Centres de Santé de Reference (CSREF)
- 2 private sector PROFAM clinics (from PSI’s social franchise network)

The names of facilities and providers have been omitted to respect confidentiality and anonymity of the interview informants, and facilities replaced with code names (Public A, B and C for the 3 public health facilities and Private A and B for the two PROFAM clinics).

4. RESULTS OF THE DEDICATED PPIUD INserter PILOT

PSI-Mali expected that a successful introduction of the dedicated PPIUD inserter would result in provider acceptability and preference for the insertion method, which may in turn impact uptake of voluntary PPIUD through improved provider confidence, less fear of pain on the part of clients, and an increased level of supportive supervision and commodity security built in to the pilot program. These results were largely realized, but with interesting variations between public and private sector and differences in trends over the years.

Provider Perception Results

Providers prefer the dedicated PPIUD inserter to forceps insertion

All providers interviewed liked the dedicated PPIUD inserter and preferred this method to inserting PPIUD with forceps for the following reasons:

- Easier and faster to insert
- More convenient
- Fewer materials required (and no need for sterilization of forceps)
- Less risk of infection or perforation
- Confident that the PPIUD is correctly in place due to visibility of strings
- Perceived as less painful for women

While no provider interviewed relayed any major difficulties with inserting the PPIUD using forceps, providers expressed a much more favorable opinion of the dedicated inserter. Interviews commonly cited ease of use and reduced associated risks with the new product, which gave respondents more confidence to provide the voluntary PPIUD service:

“[Providers] accept this method because of its ease of use. We know this influences service delivery. First people must accept it...when staff are sceptical of a method, it is very hard to make it work. They have much more confidence with the new inserter” (Gynecologist, public sector facility, Bamako)

Several providers explained that, in their experience, if women see or hear the forceps, they often get nervous. Providers relayed instances of women changing their mind about wanting the PPIUD
once they saw the forceps and about women nervously moving while the forceps insertion was taking place, raising provider fears of perforation:

“[The new inserter] is easier. It is less stressful for the woman, and for you ... if the woman sees the forceps, she is scared. She doesn't stay still...we are scared to perforate her when she doesn't sit still” (Midwife, public sector facility, Bamako)

Service Delivery Results

Uptake of voluntary PPIUD services

Voluntary provision of PPIUD services in the public and private sector has increased since PSI-Mali launched the first PPIUD program in Mali in late 2011. Uptake of PPIUD services peaked in 2016 when PSI-Mali introduced the dedicated inserter, with trained providers delivering 1,673 voluntary PPIUD services. Figure 1 illustrates the trends in voluntary PPIUD uptake from the start of the voluntary PPIUD program launch in 2011 through the dedicated inserter pilot’s conclusion at the end of 2017 (projections for the second half of 2017 are based on year-to-date monthly PPIUD service results thus in 2017).

Figure 1 Voluntary PPIUD services provided since 2011 program-wide (Source: PSI MIS)

As Figure 1 illustrates, service numbers increased markedly in 2016, coinciding with the introduction of the dedicated PPIUD inserter (see dotted vertical line).

Since inception of the voluntary PPIUD program in 2011 thorough the first half of 2017, providers in the private sector have experienced a steady increase in uptake of voluntary PPIUDs. While services provided in the public sector have increased over time, uptake trends have been more capricious, dropping and rising throughout 2015, 2016, and 2017. Results year-to-date in 2017 in the public sector are falling short of the 2016 results. However, 2017 uptake will still significantly surpass the uptake recorded in 2015, the year before the dedicated inserter was introduced. In the private sector, PPIUD uptake thus far in 2017 is significantly higher than in 2015, the year before the new PPIUD method was introduced. If uptake in the private sector continues at the same rate as the first half of 2017, it will exceed the number provided in 2016. This can in part be attributed to the increased number of private sector social franchise facilities that have been trained in the dedicated PPIUD inserter as compared to the number of franchised facilities that were trained in the forceps insertion technique.

The data from the 5 facilities visited for the case study was analyzed and results among public sector facilities showed a peak in voluntary PPIUD service uptake in 2016 compared to 2015 and 2017. In the 2 private facilities, there was no data available for 2015. However, since services began in late 2016, the private facilities have showed promising trends in voluntary uptake. To provide a comparative view of voluntary PPIUD uptake among the 5 case study facilities, the average number of PPIUD insertions per month per facility was calculated, as illustrated in Figure 2.

Figure 2 Average number of voluntary PPIUD insertions per month per facility among 5 case study facilities

On average, facilities delivered 3.6 voluntary PPIUD per month in 2017, compared to an average of 7.4 per month in 2016. Public facilities B and C provided the highest number of voluntary PPIUD services per month, especially in 2016. This was largely due to the practical training sessions taking place in their facilities, where
visiting providers had to do 3 insertions to qualify as a trained provider. The average number of PPIUD insertions per month in Private A is unchanged in 2017 compared to 2016. Private facility B was trained in late 2016 so only 2017 service data was available.

**Uptake of voluntary PPIUD services as a proportion of total deliveries**

The 5 facilities included in the case study were asked to estimate their total number of deliveries per month. The public facilities estimated significantly more deliveries per month (600-900 deliveries) than did the private sector facilities (20-30 deliveries). Service data from the 5 health facilities found an overall average voluntary PPIUD uptake of 4.8% for all deliveries. This however masks variations between sectors. **Voluntary PPIUD uptake as a proportion of total deliveries was considerably higher in the 2 private sector facilities than at 3 public sector facilities.**

**Figure 3** Voluntary PPIUD uptake vs total number of deliveries among 5 case study facilities (Source: Facility MIS)

**Figure 4** Number of Monthly voluntary PPIUDs and active providers (Source: PSI MIS)

**Figure 5** Average Monthly voluntary PPIUDs per active provider (Source: PSI MIS)
Mali DHS shows births peak in April and June, and are lowest and January. While January 2016 and 2017 are some of the lowest months of total insertions, overall patterns of insertions and births are not correlated, suggesting this might be a contributing factor but not a strong driver of the monthly insertion numbers.

Taking the average number of active providers across 2016 and 2017 and comparing this to the total number of providers trained in the dedicated PPIUD inserter, a trend emerges that (an estimated) 37% of trained public providers and 16% of trained private providers are “actively” providing PPIUD on a monthly basis. This reveals that, in a given month, only a small proportion of those who have been trained are actively providing voluntary PPIUDs, and the same providers fluctuate between being “active” and “inactive.” This highlights that trained providers are not operating at their full potential each month, likely due to limited demand for PPIUD services.

Client profile: equity, age, and source of referral
Most women adopting a PPIUD in 2016 and 2017 had no education (65%) or primary education only (21%). There was little difference in education status between public and private sector PPIUD clients. This suggests that service delivery over the course of the dedicated PPIUD inserter pilot program has successfully reached women of lower socio-economic status, using education status as a proxy measure.

Figure 3 reveals that although private facilities have significantly fewer deliveries, they have a much higher rate of uptake of voluntary PPIUD, i.e. number of services as a percentage of total women delivering at their facility.

Further research is required to fully understand the differences between voluntary PPIUD uptake in public and private facilities. PSI-Mali staff posit that, in the private sector, repeat interactions with the same provider for ANC visits and for delivery contribute to increased opportunity and/or increased trust between clients and providers that positively impacts discussion of PPFP. In the public sector, a woman may see several different providers from across different teams in the maternity unit throughout her pregnancy, delivery, and postpartum period.

Volume of services provided by number of ‘active’ providers
To understand whether the introduction of the dedicated PPIUD inserter had an impact on the number of voluntary PPIUD services provided, it is also necessary to understand whether the number of providers offering the service was the same or different over time, and thus whether increases in service uptake is a result of more providers offering the service or of higher PPIUD service volumes per provider.

However, in order to gain a snapshot of the pilot program as a whole, data on the total number of “active” providers – defined for the purposes of this case study as providers delivering at least 1 voluntary PPIUD service in a given month – was compared to the total number of voluntary PPIUD services provided, both shown in Figure 4. This provided an estimate of the average number of PPIUD insertions per active provider by month for 2016 and 2017, as depicted in Figure 5.

Figure 5 shows monthly fluctuations in the average number of voluntary PPIUD services provided per active provider. Most months with high uptake of PPIUD services coincide with a greater number of active providers delivering the services. There are, however, some months in which a lower number of active providers provide a higher number of voluntary PPIUD services, indicating higher PPIUD client volumes per provider. The data, therefore, do not provide a clear link between an increased number of providers trained in PPIUD and an increased number of voluntary PPIUD services provided.

There was a slightly higher average number of PPIUD services delivered per active provider in the private sector (6) as compared to the public sector (5.6), and a much wider range, from 4 to 8 in the public sector to between 1 and 12 for the private sector.

Figures 4 and 5 also show that although the number of providers trained by PSI-Mali has increased over time, the number of providers “actively” providing voluntary PPIUDs each month fluctuates. In some months, trained providers are providing no PPIUD services at all, despite no reported stock-outs during the pilot period. This finding was also observed during site visits. The most recent analysis of birth seasonality for Mali, with data from the 2006

In 2017, the highest proportion of women adopting a voluntary PPIUD were aged 30-39 years, but over half of all women choosing a PPIUD were under the age of 30. Among the 5 facilities visited, the age of clients varied by sector. Most (45%) of clients in the public sector were aged 30-39 compared to the private.
Discontinuation, complications and/or adverse events related to the PPIUD

All providers interviewed were asked if they had experienced any cases of PPIUD expulsions, infections, or discontinuation of the method following insertions. Overall, there was one case reported of a client self-removal and no infections related to the PPIUD insertion. A small number of cases of discontinuation were reported because husbands wanted the IUD removed. An isolated case of reported heavy bleeding and one case of a woman wanting to conceive again following the death of her child were encountered during the interviews with providers.

Counseling on postpartum contraception and timing of PPIUD insertions

All providers reported that most insertions took place in the post-placental period while women were still in the delivery room. In addition, providers reported some cases of immediate postpartum and intra-cesarean insertions. Providers believe that the timing of insertion is associated with when a woman is counselled on postpartum contraception. For women who had been counselled during antenatal clinic sessions, voluntary PPIUD insertions were more likely to take place post-placenta.

Commodity security

Throughout the pilot program, there were no reported stock outs of the dedicated PPIUD inserter or consumables, with all trained providers receiving a regular supply from PSI-Mali. For the private facilities, all of which are members of PSI-Mali’s social franchise network, the dedicated inserter was incorporated into the commodity support already provided by PSI-Mali, meaning no new systems were created.

5. CONCLUSION

Since the introduction of the dedicated PPIUD inserter in Mali – the first country in sub-Saharan Africa to introduce it – the insertion technique has proved to be popular among service providers who consider it easier, faster, more convenient and less risky than the conventional IUD inserted with Kelly forceps.

While public facilities have a much greater number of deliveries, private facilities are providing voluntary PPIUDs to a higher proportion of postpartum women, and more evenly across age groups. The cause of these trends requires further exploration. However, findings highlight the potential of scaling up the dedicated PPIUD inserter in the private sector, where cost recovery of the product could be secured through sales to private providers while ensuring service costs remain affordable to private sector clients (a similar approach to other commodities used by social franchise network facilities).

The dedicated PPIUD inserter may contribute to reducing some of the supply-side barriers that inhibit access to voluntary PPIUD services due to its acceptability among providers. However, this sector, where there was a much more even distribution across the age groups 20-24, 25-29, and 30-39 years.

The reasons for the differences in client age requires further exploration but could be explained by multiparous women being more often identified as possible candidates for counseling for voluntary PPIUD in the public sector, while the private sector demonstrates that all women of reproductive age may be interested in the PPIUD. Information regarding client parity is available at a health facility level in their detailed registers but was not available through internal MIS data.

The most commonly cited source of referral for PPIUD was through the health facilities themselves, including referrals through antenatal clinics at community-based health centers.

Clinical and Program Quality Results

Supportive supervision conducted

All providers interviewed reported receiving post-training supervision visits and reported greatly appreciating these visits. If during supervision visits there were no PPIUD insertions to observe, providers demonstrated their skills on a Mama-U postpartum uterus simulator. As part of the pilot program, supervisors, employed by PSI-Mali, visited each public and private facility on a monthly basis to provide supportive supervision of clinical and counseling skills and to collect monthly service data.

Figure 7 Age of women choosing a PPIUD by sector, 2017 (Source: PSI MIS)
alone cannot increase uptake of postpartum contraception or of voluntary PPIUD in the method mix. Integration of a new service into an already over-stretched health system does not come without its challenges. Mali continues to face important demand-side barriers not only for PPIUD, but for the voluntary IUD and FP in general, especially among men. Further efforts are required to provide comprehensive information on birth spacing and FP options at a community level. Efforts to scale access to voluntary PPIUD should be integrated with these broader goals in order to enable women in Mali to achieve their fertility intentions and support their health and the health of their families.

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