

## ORIGINAL RESEARCH



# Implementation of postpartum intrauterine device (PPIUD) services across 10 districts in Malawi

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## Abstract

### Background

Malawi has a high maternal mortality and unmet need for family planning, which could be reduced by improving access to postpartum intrauterine device (PPIUD) insertion. Our objective is to describe the implementation of PPIUD services by 4 local organizations at 14 government health services across 10 districts in Malawi.

### Methods

This program was a collaborative effort between the Malawi Ministry of Health's Reproductive Health Directorate and 4 supporting organizations. Training, educational, and monitoring and evaluation materials for PPIUD insertion were developed between December 2013 and April 2014. Each organization was then responsible for PPIUD community sensitization, provider training, and tracking of PPIUD insertions (via PPIUD register books) at their targeted health facilities. Community sensitization activities included Open Day campaigns, which were organized by local leaders to sensitize their communities, and Population Weekends, which were organized by religious leaders to target their congregations.

### Results

Community sensitization activities, provider trainings, and mentoring occurred from January 2014 to June 2015, and monitoring and evaluation continued until December 2016 at some sites. One national Radio Discussion Panel with religious leaders was broadcast, 20 Open Day campaigns and 2 Population Weekends were held, 429 providers were trained during 27 trainings, and 249 PPIUD insertions occurred.

### Conclusions

PPIUD can be safely offered in Malawi. However, the biggest challenge with program implementation was with encouraging providers to take the extra time and effort to insert an IUD within 48 hours of delivery. In addition, frequent rotation of trained labour ward staff to other clinical areas hindered the program's sustainability since new trainings had to be held whenever staff members were rotated. Further research should be done to determine the best strategies to motivate busy providers to insert PPIUD, and PPIUD should be integrated into both medical and nursing curriculums to reduce the number of postgraduate trainings required to sustain PPIUD services.

**Key words:** postpartum, intrauterine device, Malawi, family planning, Africa

## Introduction

Malawi has a high maternal mortality ratio and unmet need for family planning (FP) among married women aged 15-49 years.<sup>1</sup> Both could be reduced by improving access to modern FP methods, such as the intrauterine device (IUD), particularly in the immediate postpartum period (<48 hours after delivery). Immediate postpartum intrauterine device (PPIUD) insertion is safe<sup>2,3</sup> and has been implemented in multiple sub-Saharan African countries.<sup>4,7</sup>

A pilot randomized controlled trial of PPIUD versus interval insertion of the copper IUD was completed in 2010-2011 at Bwaila Hospital in Lilongwe, Malawi.<sup>8</sup> A total of 12 women received PPIUD, whereas 18 received interval IUD. At 12 weeks post-delivery, 28 (93%) of 30 women were still using the IUD, with no significant difference between the two groups. All women reported that they liked using the IUD and would recommend it to a friend. The authors concluded

that PPIUD was acceptable to women who received it, but that enhanced community education, particularly with men, would be needed for more widespread acceptance, which was confirmed in a follow-up qualitative study.<sup>9</sup>

After the pilot study ended, PPIUD also ended at Bwaila, despite having trained a staff of 60 in its provision. Therefore, the Malawi Ministry of Health's (MoH) Reproductive Health Directorate (RHD) began partnering with local organizations to re-implement PPIUD with the copper IUD at Bwaila and other health facilities. The MoH sent two Master FP Trainers to a PPIUD workshop in Zambia in April 2013 to learn how to implement PPIUD services.<sup>10</sup> A report on the workshop was made to the MoH's FP Sub-Committee in June 2013.

Shortly thereafter, the RHD partnered with 4 local organizations who had received grant funding to implement PPIUD at 14 health facilities around the country: UNC Project-Malawi (UNC), Banja La Mtsogolo (BLM, Malawi's

Marie Stopes Affiliate), Support for Service Delivery Integration-Services (SSDI, a collaboration between JHPIEGO and Save the Children), and United Nations Population Fund (UNFPA). Our objective is to describe the implementation of PPIUD services by these 4 local organizations at 14 government health services across 10 districts in Malawi.

Methods

UNC implemented PPIUD at two facilities, whereas BLM, SSDI, and UNFPA each implemented it at 4 facilities (Figure 1). These 14 facilities were chosen by the RHD because of their high volume of deliveries and interest in expanding their FP services, and they were located in 10 different districts across Malawi (Figure 1). Each organization was responsible for implementing the PPIUD community sensitization, training, and monitoring and evaluation activities at their targeted facilities as no standardized guidelines for implementation existed. However, the organizations first worked together to produce the PPIUD training presentation, manual, checklist, counseling cases, provider information sheet, pre/post-test, course evaluation, and register. These materials were presented to the FP Sub-Committee for approval in January 2014, piloted during two trainings in February 2014, and finalized in April 2014 (Figure 2).

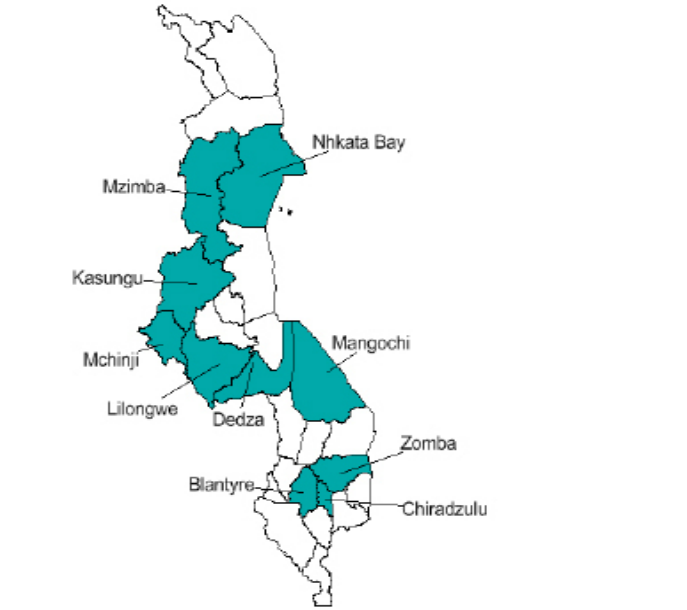


Figure 1: Map of 10 PPIUD Implementation districts in Malawi

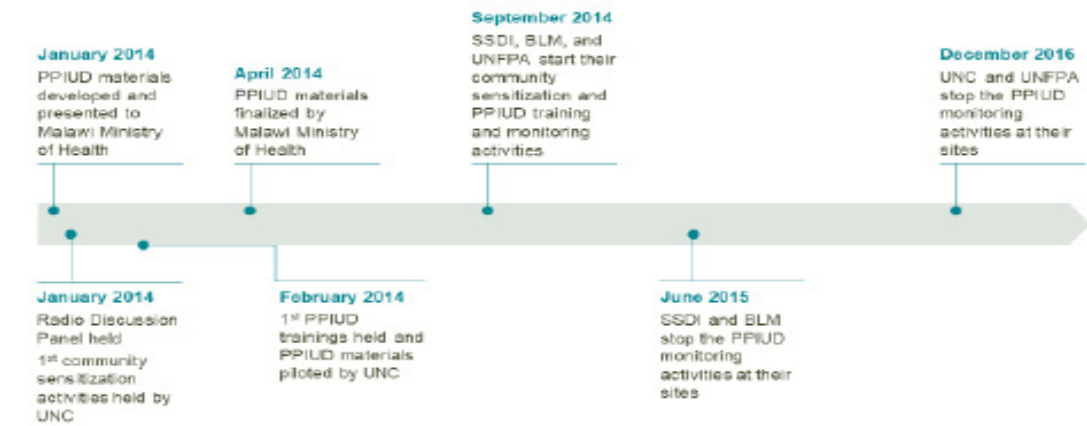


Figure 2: Timeline of PPIUD Implementation activities Figure Abbreviations: PPIUD = postpartum intrauterine device; UNC = University of North Carolina Project-Malawi; SSDI = Support for Service-and Delivery Integration-Services; BLM = Banja La Mtsogolo; UNFPA = United Nations Population Fund

The partners also worked with the Malawi Health Education Unit (HEU) to develop a PPIUD brochure and three posters in *Chichewa*, the most commonly-spoken language in Malawi. These materials were pilot-tested by the HEU in three districts across the country in March 2014 and finalized by the HEU the next month.

Community sensitization and demand generation activities

The remaining activities were left to each partner to implement in their own manner. Community sensitization was generally done by first sensitizing the targeted communities’ traditional chiefs to the importance of postpartum FP and PPIUD since they play an important role in influencing their communities’ beliefs and practices. The partners then worked with the chiefs to establish FP Community Task Forces, comprised of key members of the targeted communities who could help to organize an Open Day for their community. Open Days were large community gatherings where multiple activities were utilized to promote FP, including songs, dramas, quiz games, and mobile vans that offered FP services on-site. They also included the use of FP Champions (former or current FP users, particularly IUD users), men who were supportive of FP, and local community health workers, to explain the benefits of FP and dispel its myths. To sensitize men to FP and PPIUD, SSDI organized soccer and *bawo* (a local board game) tournaments at their Open Days.

UNC partnered with Family Planning Association of Malawi (FPAM, Malawi’s International Planned Parenthood affiliate) to organize its Open Days. Through a grant that only UNC received, it was also able to work with Health Policy Project (HPP, a 5-year USAID-funded project in Malawi) to sensitize religious leaders and their congregations to the benefits of FP. HPP had already been collaborating with the Malawi Ministry of Economic Planning and Development (MEPD) to train and sensitize the religious leaders of the main religious denominations in Malawi about the benefits of FP and the needs to increase its access. Multiple workshops with these religious leaders were held, during which each religious denomination developed strategies and brochures to promote family planning within their religion’s teachings.

One strategy agreed upon by the various religious leaders was to organize a live radio discussion panel to promote the use of FP. The radio discussion panel was held on January 16, 2014 and was recorded live on Zodiak Radio Station, one of Malawi’s radio stations. The four panelists represented the Malawi Council of Churches and Evangelical Association of Malawi, the Episcopal Conference of Malawi, the Seventh Day Adventist Church in Malawi, and the Quadria Muslim Association of Malawi. This distribution of panelists was chosen because 69% of

Malawians are Christian and 26% are Muslim, with 6% subscribing to another

or no religion.<sup>11</sup> The Panelists focused on highlighting the structures each denomination had in support of FP, clearing misconceptions on religion’s stance on FP, and focusing on FP as a key strategy to improve the health of women and children and slow down rapid population growth.

The panel also served as an advertisement for Population Weekends, which were held in UNC’s two targeted districts. The Population Weekends were held in Kasungu District from 17 to 19 January, 2014, and in Area 25 from 31 January to 2 February, 2014. During the Population Weekends, the participating churches and mosques focused their weekend sermons, songs, bible studies, and youth group meetings on FP and gave out FP brochures designed by each of the three major religious denominations in Malawi (Protestant, Catholic, and Muslim). Each brochure focused on the benefits of FP and healthy birth spacing and quoted supporting verses from the Bible or Quran. Brochures were also produced on adolescent sexuality for use by youth groups. Immediately after the Population Weekends, FPAM held their Open Day campaigns in the same areas targeted by the Population Weekend.

Training, mentoring, monitoring and evaluation activities

Provider training and mentoring in PPIUD insertion began in February, 2014, and included training in both post-placental IUD insertion (0-10 minutes after placental delivery) and immediate postpartum IUD insertion (10 minutes to 48 hours after placental delivery), as well as IUD removal and management of missing IUD strings. Trained providers included community midwives, nurse midwife technicians, registered nurse midwives, medical assistants, and clinical officers. Only clinical officers were trained in intracesearean IUD insertion since they were the only trained cadre allowed to perform cesarean sections. They were all trained in the classroom over two days using the Mama-U Postpartum Uterus Trainer (Laerdal Global Health, Stavanger, Norway). The trainers were then placed at the targeted health facility for the remaining three days whenever it was possible to send a trainer to the facility, so that the trainees could practice on actual patients with supervision. Each facility was given PPIUD instrument kits, including long placental Kelly forceps and a Mama-U Trainer.

The initial trainers were 5 American gynecologists and one of the Malawian Master FP Trainers trained in Zambia. These 6 trainers then trained Malawian providers to become trainers. After each training, each trained provider was paired with a Malawian FP mentor. For mentoring, the mentors would meet with their mentees on a monthly basis to monitor any problems or successes they had with PPIUD, for up to 6 months after the training. Monitoring and evaluation was done through monthly visits to the facilities, during which the number of PPIUD insertions was collected through review of the facility’s PPIUD register book, in which all PPIUD insertions were recorded. Due to the end of one of the grant sources for this project, BLM and SSDI only monitored their sites until June, 2015, whereas UNC and UNFPA monitored their sites with other grant funding until December, 2016.

Results

We found that the traditional chiefs for all of our targeted communities accepted our plan to promote postpartum FP and introduce PPIUD among their constituents. With the

help of the traditional chiefs, 13 FP Task Forces were created, 5 of which were created by UNC/FPAM (Table 1). Each initial UNC/FPAM Task Force Meeting was attended by 60 members of the community, including traditional chiefs, Development and Health Committee members, government employees, and women and youth representatives. The Task Forces helped FPAM to organize participatory action meetings with a multimedia presentation called “Malawi: Investing in our future now”.<sup>12</sup> SSDI created a Task Force in each of the two districts it was working in. During its Task Force Meetings, 77 community leaders and 243 community health workers and other health staff were oriented to PPIUD. BLM established 6 Task Forces around its 4 health facilities, comprised of representatives from the MoH, BLM officers, and community leaders. We subsequently held 20 Open Day campaigns with the help of 57 trained FP Champions. UNC/FPAM held 5 Open Days, SSDI held 12, and BLM held 3. FPAM estimated that a total of about 39,000 people attended their 5 Open Day campaigns.

Table 1: Results from the postpartum intrauterine device roll-out program at 10 health facilities across 6 districts in Malawi (January 2014-June 2015)

ACTIVITY	OUTPUT
Community mobilization/demand creation	
Creation of family planning task forces	13 task forces created among 6 Districts
Establishment of family planning champions	57 family planning champions established
Open Day Campaigns	20 Open Day campaigns held in 6 Districts
Radio Discussion Panel with religious leaders	1 Panel held with >400 listeners texting in
Population Weekends with religious leaders	2 Population Weekends held in 2 Districts
Provider training, mentoring, and insertion	
PPIUD training held	27 trainings held
Providers trained and mentored in PPIUD	429 providers trained and mentored
PPIUD insertions	249 PPIUDs inserted

Abbreviations: PPIUD=postpartum intrauterine device

The radio discussion panel was attended by over 100 people, and over 400 listeners texted in questions and comments. According to Zodiak, listenership for the program was approximately 78% of the country’s population (10 million).<sup>13</sup> During the Population Weekends, 45,000 brochures were distributed. HPP sampled 10 churches and 2 mosques in Kasungu and 6 churches and 2 mosques in Lilongwe and found that almost all churches and mosques in the target TAs participated, with an estimated reach of 350,000 Christians and 5,600 Muslims.

A total of 429 government providers were trained and mentored in PPIUD during the 27 trainings (Table 2). UNC Project held 11 training sessions and trained 101 providers between February 2014 and June 2015. SSDI held 10 training sessions and trained 249 providers between September 2014 and February 2015, whereas BLM held 5 training sessions and trained 67 providers between September and October 2014. Finally, UNFPA held 1 training and trained 16 providers in



September 2014.

A total of 249 PPIUD insertions were recorded between February 2014 and December 2016. A total of 18 intracesearean IUD insertions were documented collectively at Zomba, Mzuzu, Kasungu, and Bwaila Hospitals. Individual provider data was not routinely collected by all implementers, so we do not know how many PPIUDs each of the trained providers inserted. However, given that we trained 429 providers and only 249 PPIUD insertions were recorded, we know that not all trainees placed a PPIUD on a patient. In addition, during our monitoring visits, we learned that many of the health facilities had only a few interested providers placing most of the PPIUDs and that the number of PPIUD insertions would decrease when these interested providers were moved to other health facilities or non-obstetric clinics or wards. This reliance on a few trained and motivated providers affected the sustainability of our program given that providers in Malawi are commonly moved from one ward to another after just a few months.

**Table 2: Number of trainings, providers trained, and postpartum intrauterine devices inserted at each targeted health facility**

HEALTH FACILITY	# providers trained	# PPIUD inserted
A. NORTHERN REGION		
1. Mzimba District		
Mapale Health Center (BLM)	18	10
Mzuzu Central Hospital (BLM)	15	29
2. Nkhata Bay District		
Nkhata Bay District Hospital (UNFPA)	4	3
B. CENTRAL REGION		
Dedza District		
Dedza District Hospital (UNFPA)	3	0
Kasungu District		
Kasungu District Hospital (UNC)	64	32
Lilongwe District		
Area 25 Health Center (UNC)	37	28
Bwaila Hospital (SSDI)	127	12
Mchinji District		
Mchinji District Hospital (BLM)	13	52
C. SOUTHERN REGION		
Blantyre District		
Limbe Health Center (BLM)	20	8
Chiradzulu District		
Chiradzulu District Hospital (UNFPA)	3	0
Mangochi District		
Mangochi District Hospital (UNFPA)	3	3
Zomba District		
Matawale Health Center (SSDI)	20	39
Domasi Health Center (SSDI)	18	29
Zomba Central Hospital (SSDI)	84	4
TOTAL	429	249

**Abbreviations: PPIUD=postpartum intrauterine devices; BLM=Banja La Mtsogolo; UNFPA=United Nations Population Fund; UNC=UNC Project-Malawi; SSDI=Support for Service Delivery Integration-Services**

We were unable to monitor individual-level follow-up data for women given that most did not return for their 6-week postpartum visit. During our monitoring visits, we were only informed of 4 PPIUD expulsions, three of which occurred about 24 hours postpartum. The fourth expulsion occurred about 6 months after delivery, when the IUD strings were found missing on speculum exam. A pelvic x-ray was performed, and no intracorporeal IUD was noted, leading the providers to believe that the IUD had been expelled. No reports of uterine infection or perforation were noted.

**Discussion**

PPIUD is safe and acceptable in Malawi. We had only 4 known expulsions (1.8%) out of 249 insertions, which is consistent with other studies performed in Africa, which ranged from 0.8%-17%<sup>2-8</sup>. IUD misconceptions, even among providers, have been found in sub-Saharan Africa, including in Malawi<sup>4,9,14-18</sup>. Since many Malawian women seek permission from their husband before accepting an FP method, men must be educated about PPIUD for PPIUD programs to be successful<sup>9,14,16,19</sup>. Organizing Open Days and soccer and *bano* tournaments were successful strategies to reach and sensitize many men at once. We also found that it was important to disseminate information about PPIUD to women during antenatal visits so that they have time to discuss it with their partners.Traditional chiefs and religious leaders were generally receptive to learning about the benefits of FP and to disseminate this information to their communities and congregations. Our success with religious leaders is likely secondary to the support we received from the Malawi MEPD and the work that HPP had done with sensitizing religious leaders at the highest organizational levels within each of the denominations. The need to involve religious leaders in programs and interventions to increase FP has become increasingly recognized and supported by the literature<sup>20,21</sup>.

Many providers trained in PPIUD never placed one on a patient during their trainings due to low numbers of interested patients, despite our efforts to time the community and antenatal PPIUD sensitizations before the trainings. It was difficult to time the delivery of interested patients with the trainings, and the low numbers of PPIUD inserted led to less provider confidence in placing them after the trainings. In addition, there was often provider rotation out of the labour and postnatal wards every 3-6 months, which led to the need to constantly train new providers. In Kenya, one program at a Provincial Hospital found a PPIUD provider retention rate of only 28% after 2-3 years of PPIUD implementation.<sup>4</sup> The issue of high staff turnover and transfer among facilities made it difficult to ensure that there were always trained providers available for interested patients<sup>4,6-7</sup>.Our biggest challenge with program implementation has been with encouraging providers to take the extra time and effort to insert PPIUD. UNC placed an on-site mentor at Area 25 Health Center after the trainings there, but she found that the providers often said that they were too busy to insert PPIUD when the opportunity arose. However, Area 25 had the highest number of PPIUDs placed at, which is likely due to the fact that it was monitored for the longest time and

because of the presence of our full-time PPIUD mentor there throughout our monitoring period. Placing dedicated IUD providers at high volume public sector facilities was found to be a successful strategy in a program in Zambia<sup>22</sup>. Further research should be done to determine the best strategies to motivate busy providers to insert PPIUD.

Some of the larger hospitals had fewer PPIUD insertions than the smaller facilities. This finding may have resulted from the fact that the larger hospitals were busier and had more rotating staff members. In addition, patients were often referred to them from other health centers and already in active labour. In contrast, some of the smaller health facilities had problems with sterilizing their PPIUD kits because they did not have sterilizers and had to send their kits to the larger hospitals for sterilization, which led to some missed opportunities for PPIUD insertion. Lower PPIUD insertion rates at Kasungu may be due to the implementation of both immediate postpartum implant and PPIUD insertion there as part of another study, which will compare their 2-year continuation rates. During the 7-month study enrollment period, 13 PPIUDs and 176 immediate postpartum implants were placed, which suggests a preference for implants over IUDs when both are available. Now that the World Health Organization has upgraded implant insertion <48 hours after delivery from Category 3 to Category 2 for breastfeeding women, Malawi has also allowed implants to be placed immediately postpartum<sup>23</sup>.

A final challenge that we met was with sustainability. Most FP trainings in Malawi are sponsored by donors. Therefore, once funding for the trainings ended, the trainings also ended. We recommend that this challenge be addressed by integrating PPIUD into existing FP curriculums at the nursing and medical schools, so that these expensive postgraduate trainings become unnecessary. We also recommend that PPIUD training should be integrated into the long-term FP trainings currently held, so that providers do not attend separate trainings for interval and PPIUD insertion. Finally, the labour ward is often the busiest ward; so many providers do not want to work there. Since providers are paid the same whether they work in a busy labour ward or a less busy clinic, facilities often feel obligated to rotate the providers out of the labour ward after 3-6 months, which affects program sustainability. One possible solution is to compensate labour ward providers at higher levels. Challenges with sustainability of PPIUD has been noted in other countries<sup>4,5</sup>. Strengths of our project included collaboration between multiple partners with the RHD and other ministries to implement PPIUD services across the country. Weaknesses included our limited ability to monitor PPIUD outcomes individually and longitudinally, as well as challenges in finding interested PPIUD clients during the trainings and motivating the busy providers. We were also unable to track the number of deliveries that occurred at each of the 14 health centers; so we cannot present an overall proportion of postpartum women who opted for PPIUD. A final limitation is our inability to present the total cost for all of our activities to inform future scalability since funding for these PPIUD activities came from multiple sources, including in-kind administrative and financial support from each partner, and funds for these activities were sometimes mixed with other programmatic activities. However, we hope that the lessons learned from this project will help to improve future PPIUD

programs both in Malawi and other settings.

**Conclusions**

PPIUD services can be safely offered in Malawi. Further research should be done to determine the best strategies to motivate busy providers to insert PPIUD, and PPIUD training should be integrated into both medical and nursing curriculums to reduce the number of postgraduate trainings required to sustain PPIUD services.

**Disclosure**

The authors declare no potential conflicts of interest.

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