Incorporating the Hormonal Intrauterine System into the Contraceptive Method Mix in the Public Health Sector in Zambia

Learning from Central, Eastern, Southern, and Luapula Provinces

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Background

Zambia is among the original Family Planning 2020 countries, committing to double its budgetary allocations for family planning (FP) in 2012 and, in 2017, setting a goal to increase the modern contraceptive prevalence rate to 58% by 2020. Despite an increase in the modern contraceptive prevalence rate from 33% in 2007 to 48% in 2018, unmet need for FP remains high, at 19.7%. Use of intrauterine devices (IUDs) in Zambia is quite low but increasing. Only 0.7% of married or sexually active women were using IUDs in 2018, an increase from 0.1% in 2007.[1,2]

First introduced over 30 years ago (see Figure 1), the hormonal intrauterine system (IUS) is among the most effective forms of contraception and has helped revitalize use of long-acting reversible contraceptives (LARCs) in Europe and the US. However, the high cost of commercially available hormonal IUS products has meant limited availability of the method in many low- and middle-income countries, including Zambia. A recent study also indicated that in settings where unmet need for FP is high, increased availability of more affordable hormonal IUS products could result in increased demand and uptake of the method among women.[3]

Box 1. What Is the Hormonal IUS?

- It is a small, T-shaped contraceptive device placed in the uterus.
- Contains 52 mg of the hormone levonorgestrel and releases 20 micrograms every 24 hours in the uterus, for up to 5 years of protection from pregnancy.
- Is highly effective: failure rate is ~0.2% at 1 year and cumulative failure rate is 0.7% at 5 years.
- Significantly reduces menstrual blood loss (approved treatment for women suffering of heavy menstrual bleeding).
- Is immediately effective.
- Offers rapid return to fertility after removal.
- Is more cost-effective than oral contraceptives, condoms, and injectable contraception over 5 years.

Multiple hormonal IUS products are registered in Zambia (Mirena and Avibela).

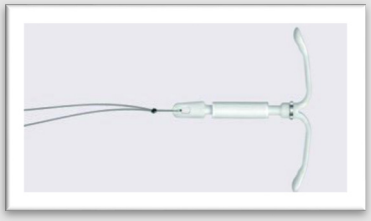
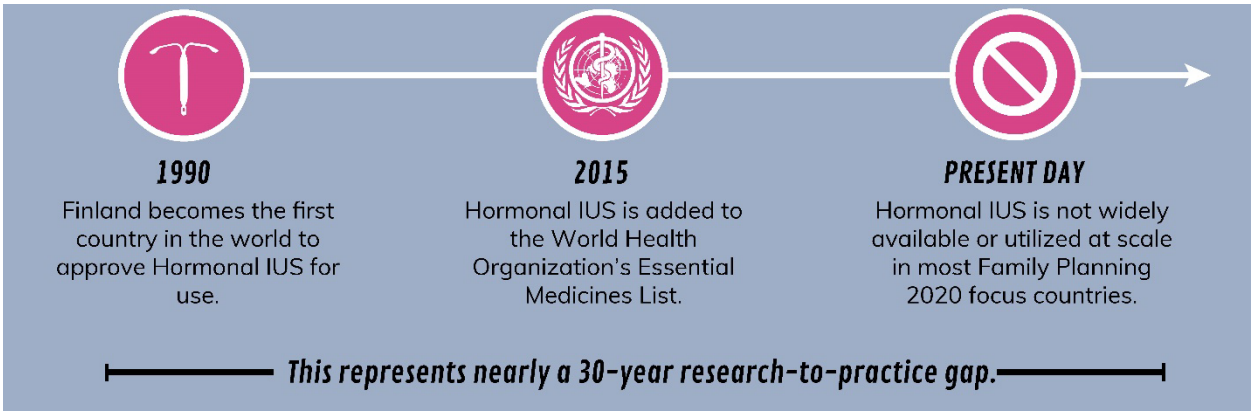


Image courtesy of ICA Foundation

[1] Zambia Central Statistical Office (CSO), Zambia Ministry of Health (MOH), Zambia Tropical Diseases Research Centre, University of Zambia, Macro International. 2009. *Zambia Demographic and Health Survey 2007*. Calverton, Maryland, USA: CSO and Macro International.
[2] Zambia CSO, Zambia MOH, ICF. 2019. *Zambia Demographic and Health Survey 2018: Key Indicators*. Rockville, Maryland, USA: CSO, MOH, and ICF.
[3] Ross J, Stover J. 2013. Use of modern contraception increases when more methods become available: analysis of evidence from 1982-2009. *Glob Health Sci Pract.* 1(2):203-12. doi: 10.9745/GHSP-D-13-00010.

In 2016, the hormonal IUS was available on a limited basis in Zambia at one tertiary care hospitals and in the private sector. However, private services are cost prohibitive to most users, and 82% of women seeking FP services in Zambia access them through public clinics, where they are free.

Figure 1. Hormonal intrauterine system introduction timeline



This brief describes Maternal and Child Survival Program (MCSP) interventions in four provinces in Zambia and the results of the implementation research conducted along with the interventions. The MCSP study aimed to establish the profile of women adopting the method, their experiences using it, and providers' perspectives on factors for successful introduction. Study results and lessons learned from implementation will be useful to inform best practices for phased scale-up. MCSP supported the introductory study and implementation of hormonal IUS services in Central, Eastern, Southern, and Luapula provinces, collaborating with the US Agency for International Development (USAID)-funded Safe Motherhood 360+ (SM360+) project.

Project Intervention

MCSP is a global, $560 million, 5-year cooperative agreement funded by USAID to introduce and support scale-up of high-impact health interventions among USAID's 25 maternal and child health priority countries, as well as other countries. From January 2017 to October 2019, with funding from USAID and in partnership with the Zambian Ministry of Health (MOH), MCSP supported the introduction of the hormonal IUS through incorporating it into existing public-sector voluntary FP programming in four provinces (Central, Eastern, Southern, and Luapula). MCSP leveraged existing programming through the SM360+ project to embed introduction of and learning about the potential of hormonal IUS within LARCs in public health facilities using commodities donated by the International Contraceptive Access (ICA) Foundation.[4]

Implementation of onsite mentorship in Eastern Province. Photo by Leah Elliott, MCSP.

The LARC capacity-building approach used in Zambia involved a modular, facility-based approach for training and mentorship, and aligned well with SM360+ approaches. Implementation took place via MOH mentors previously trained in maternal and newborn health and in mentorship skills. The mentors were then trained in LARCs, including the hormonal IUS, with an emphasis on comprehensive

[4] http://www.ica-foundation.org/index.html

counseling, voluntarism and informed choice, quality of care, the World Health Organization Medical Eligibility Criteria, infection prevention, and insertion and removal clinical skills. Once the LARC mentors were fully trained and certified competent in the hormonal IUS, in addition to the other LARCs, they provided step-down training to service providers through an on-the-job approach.

Global evidence shows that traditional training approaches that focus on extended, offsite, group-based workshops have had limited effectiveness in improving and maintaining provider performance after training.[5] New evidence identifies better ways to optimize sustained improvements in service delivery using interactive techniques that engage the learner, include simulated practice, provide constructive feedback, and offer learning opportunities that are planned and delivered at an appropriate dose and frequency. To support implementation of comprehensive FP programming in Zambia and other countries, MCSP pioneered a new, evidence-based, in-service training package, the LARC learning resource package.[6] This comprehensive tool consists of 10 modules that provide facilitators and learners with consolidated, essential information about the safe use of LARCs, specifically IUDs (hormonal and nonhormonal) and contraceptive implants (single- and two-rod), in the interval, postabortion, and postpartum periods. Programming approaches and strategies used for incorporating the hormonal IUS into the existing method mix can be found in Table 1.

From January 2017 to October 2019

41	68	134	395
PUBLIC HEALTH FACILITIES providing the hormonal IUS as part of the method mix contributed data for this brief (seven in Luapula, four in Central, 19 in Eastern, 11 in Southern).	**MOH PROVIDERS** were certified as hormonal IUS mentors (20 in Luapula, nine in Central, 20 in Eastern, 19 in Southern).	**SERVICE PROVIDERS** were trained in the hormonal IUS (51 in Luapula, 16 in Central, 37 in Eastern, 30 in Southern).	**CLIENTS** adopted the hormonal IUS (54 in Luapula, 65 in Central, 177 in Eastern, 99 in Southern).

Table 1. Program approaches and strategies for incorporating the hormonal intrauterine system (IUS) into the contraceptive method mix in four provinces in Zambia

Health Workforce	
	**Determined existing local capacity:** • Health care workers who conduct hormonal IUS insertions in Zambia include midwives, doctors, nurses, and clinical officers. • Ob-gyn specialists also provide services while overseeing provision by the other cadres. • Safe Motherhood Action Groups (SMAGs) at community level discuss family planning (FP) options. **Supported knowledge and skill transfer through mentoring:**[7] • Designated, engaged, and prepared existing Ministry of Health (MOH) mentors to serve as FP/long-acting reversible contraceptive (LARC) mentors; mentors were supporting safe motherhood activities before be trained on FP/LARCs. • Worked with in-country stakeholders to plan for mentor availability, support, and sustainability. **Identified human resources for health issues outside of the program's control, including:** • Staff transfers and personnel shortages • Distance to facility/transportation challenges

[5] Bluestone J, Johnson P, Fullerton J, Carr C, Alderman J, BonTempo J. 2013. Effective in-service training design and delivery: evidence from an integrative literature review. *Hum Resour Health*. 11:51. doi: 10.1186/1478-4491-11-51.
[6] MCSP. 2017. *Long-Acting Reversible Contraceptives Learning Package*. Washington, DC: MCSP.
[7] Based on recent evidence that suggests learning within the workplace—in short segments with frequent practice and a focus on doing, rather than knowing—is the most effective at impacting performance.

Service Delivery	
	**Together with key stakeholders, designed the strategy, approach, and scope:** • Layered the hormonal IUS into existing FP, maternal health, and HIV service delivery at MOH facilities using a modular, facility-based approach for training and mentorship. • Identified existing service delivery channels (FP services, maternity, etc.). • Identified existing communication channels for providing information to potential clients/communities (e.g., SMAGs and community-based distributors). **Identified and assessed facilities with needs for LARC capacity-building:** • Conducted facility readiness assessments using an MOH assessment tool (included a review of human resources, equipment and supplies, management systems, and existing data collection and review systems used at the facility). **Oriented program staff and key stakeholders:** • Shared the needs assessment results with key stakeholders, including the MOH and staff in charge of the facilities, highlighting any major gaps in provision of LARC services (e.g., staff shortage, FP supplies). • Oriented the facility managers and other key personnel to the training approach and planned the training schedule. **Developed/revised necessary tools and documents:** • The MOH added the hormonal IUS into the national counseling tools and is in the process of adapting MCSP's hormonal IUS module into Zambia's national FP training curriculum. **Provided necessary equipment and supplies:** • Provided levonorgestrel intrauterine system (LNG-IUS) commodities sourced via ICA Foundation, anatomic models, and essential medical instruments. **Conducted facility-based training:** • Coordinated, planned, and implemented facility-based training with MOH stakeholders and program staff. • Trained MOH mentors, who subsequently mentored health care workers at the facility level. **Followed up with and mentored trained service providers:** • Provided regular, on-the-job mentoring and supervisory visits to the facility to ensure confidence and competence of the newly trained LARC providers. • For sustainability, the supervisors from the district coordinated the mentorship activities and provided supportive supervision. **Supported and managed implementation:** • MCSP, through the Safe Motherhood 360+ (SM360+) project in-country, worked with in-country stakeholders to develop a clear transition strategy to have the government manage all elements of scaling up the method, including supply chain management, capacity-building, and demand generation (see below). **Facilitated ongoing learning and adaptation:** • The MOH, US Agency for International Development, and implementing partners all continue to work closely together through the national FP Technical Working Group to share/harmonize hormonal IUS learning and programmatic approaches. SM360+ participates in this group. • The MOH expressed interest in supporting a phased scale-up of the hormonal IUS. Based on findings from in-country implementation, the MOH will support changes to implementation and processes as appropriate. • MCSP and SM360+ are advising the MOH on capturing data on the hormonal IUS in the health management information system to allow for monitoring after support ends.

Health Information Systems	
	**Supported supplemental program monitoring:** • Supported providers to collect supplemental data at time of intrauterine device insertion or removal for the purpose of learning about interest in new method. • Tracked hormonal IUS commodity distribution and reported to ICA Foundation, since the hormonal IUS is not tracked in the existing logistic information system. **Strengthened existing data collection tools:** • Suggested adaptations to the FP register, including separate tallying and reporting by type of intrauterine devices, and specifying timing of insertion (interval, postpartum, or postabortion).

Medical Products	
	**Managed commodities:** • Sourced donations of generic LNG-IUSs from the ICA Foundation. • Managed the donations from ICA Foundation (requesting, receiving, distributing, monitoring, and reporting) and subsequently transitioned management to SM360+. **Supported continuity in commodity supply:** • Initiated discussions to transition commodity management to the national MOH. In the meantime, commodities will continue to be managed through SM360+.

Clients	
	**Raised awareness/created demand among clients:** • Supported the MOH to incorporate the hormonal IUS into SMAG FP training. • Incorporated hormonal IUS messaging into existing FP activities and messaging that take place via SMAGs and community-based distributors.

Health Governance	
	**Facilitated incorporation of the hormonal IUS into national guidelines and tools:** • Worked closely with MOH leadership from the national, province, and district levels (FP Technical Working Group, provincial and district health directors, nursing officers, health center in-charges, and mentors) for government support and leadership. As a result, the hormonal IUS was incorporated into the national FP guidelines and the national counseling tool. • SM360+ staff continue to support and follow-up the inclusion of hormonal IUS into the national FP training materials.

Health Delivery System	
	**Utilized Zambia's zonal approach to integrate the hormonal IUS into existing maternal and newborn health services:** • Equipped zonal facilities with LARC training models and insertion/removal kits to enable trained mentors to conduct structured, facility-based training. (A zonal health facility is a high-volume public entity [urban/rural] that oversees the health service delivery in its catchment area, including other satellite facilities. It comprises a multidisciplinary team to integrate services.)

Implementation Research

As part of MCSP's implementation activities, the project conducted a research study with the aims of assessing the profile of women who adopt the hormonal IUS for FP and investigating the experiences of postpartum women receiving the hormonal IUS in Zambia.

Study Objectives

1. Assess if women adopting the hormonal IUS include postpartum women, new lifetime FP users, women "switching" methods, or populations of special interest (e.g., adolescents or older, high-parity women).
2. Identify reasons women choose to adopt the hormonal IUS within a context where all LARC services have been strengthened.
3. Assess user satisfaction and experiences of women who receive the hormonal IUS during the first year postpartum.
4. Assess implementation challenges and opportunities for the hormonal IUS for all women and for postpartum women from the perspective of health care providers.

Methodology

MCSP conducted enhanced program monitoring and evaluation (M&E) from February 2017 to October 2019, with providers administering short interviews to interested women immediately after insertion of the hormonal IUS or copper IUD (CuT) to document demographic information, the contraceptive method used before IUD insertion (if any), reasons for choosing the method, and where and when women first heard about the hormonal IUS. Providers also administered short questionnaires to clients after any IUD removals. MCSP collected data from CuT adopters for comparison purposes. Consistent with other implementing partners working on hormonal IUS introduction, MCSP calls this data collection at time of insertion "enhanced M&E." Phone numbers were recorded for women interested in participating in a follow-up research study. Follow-up phone calls were conducted from April to July 2019 to assess early continuation rates as well as user experience and satisfaction. In total, enhanced M&E data were collected for 395 hormonal IUS and 359 CuT adopters, with 40 hormonal IUS and 42 CuT adopters participating in follow-up phone interviews.[8] In late 2018, MCSP conducted seven qualitative focus group discussions with providers exploring their feedback on learning to insert IUDs and implants, the mentorship they provided or received, their experience and beliefs, their perceptions of their clients' experience with the hormonal IUS and other long-acting reversible methods, and their facility's readiness to provide hormonal IUS services.

Results Snapshot

Characteristics of Hormonal IUS Adopters (N = 395)

- The average age was 31 years, range: 14–57 years (compared to 33 years for CuT).
- 82% were married (compared to 88% for CuT).
- 94% had at least one child.
- 77% of 143 interval/nulliparous adopters were either not using contraception or switching from a short-acting method.
- 58% were in the 1-year postpartum period.
- Women had different reasons for choosing the hormonal IUS. The top reasons were that it can be used for spacing (54.7%), it is long-lasting (35.7%), and it reduces bleeding (35.7%), followed by it can be used for limiting (25.6%). Note that possible reasons were unprompted, and responses were coded using a list of possible reasons.

Experience Post-Insertion (N = 40)

Adopter satisfaction:
95% would recommend it to other women.

Continuation:
77.5% were still using the hormonal IUS at the time of the follow-up interview. Four hormonal IUS adopters had expulsions, and four had the hormonal IUS removed (one woman who reported no longer using the hormonal IUS was missing data on whether it expelled or was removed). Note that these interviews ranged from 5 to 14 months after insertion and should be interpreted with caution.

[8] The facilities supported by MCSP/SM360+ were geographically dispersed and often remote. Cellphone ownership was low, and phones were often switched off, which explains the low follow-up rate. When phone numbers were given, interviewers called repeatedly at different times of day to increase the response rate.

Removal Data Reported from Facilities:
Because not all adopters could be reached by phone, this summarizes forms completed at time of removal:

- 16 hormonal IUS removals were recorded at participating facilities.
- Reasons given for removals included bleeding disturbances (8), husband did not approve (4), pain (4), desire to get pregnant (2), and weight loss (1).

Provider Feedback on Capacity-Building Approach

Qualitative interviews revealed mentorship to be a new concept that is not always immediately understood or accepted, and that support from supervisors and leadership is critical to encourage service delivery for LARCs, encourage participation in LARC mentorship, and facilitate mentorship to facilities other than where the mentor is currently working.

"Previously, I don't know if we just didn't understand what it means when one says mentorship. … Before I was mentored, I was so scared when I heard people say they are coming for mentorship, but after being mentored, I have appreciated the whole thing." –Mentee

"If a leader is in the forefront, things become easy. … This is what is happening at our facility because the current trained LARC provider is my in-charge, so she is in the forefront, so things are being done in a correct way because she is more than ready to mentor each and every one." –Mentee

"The fact that our supervisors don't do constant follow-ups to see is there any mentorship that is being provided and how many people are willing to mentored … there should be continuity in this program so that the services can be delivered, even when one who has trained is not available." –Mentor

Key Findings

A positive political and policy environment in Zambia that favors FP and increasing access to long-acting reversible methods contributed to the success of this intervention, as it allowed for critical MOH ownership and leadership of hormonal IUS work, which in turn created an enabling environment at national and provincial levels. The national MOH participated in site visits alongside SM360+ and shared its appreciation. While nearly 400 insertions were reported over an approximately 2.5-year period (though there may have been underreporting), there were challenges with turnover of trained providers/mentors at supported sites, and the close of the MCSP country program made it difficult to support onsite training and mentorship.

Preliminary results suggest that the hormonal IUS is an appealing method for some younger women (21% of adopters were under 25 years old), postpartum women (58% of adopters were under 1 year postpartum), and high-parity women (40% had five or more children)—all key target groups with high need for both pregnancy spacing and limiting. While the profile of women adopting CuT was not dramatically different, hormonal IUS adopters were younger, more likely to be unmarried, and less educated. Some women who use short-acting methods find the hormonal IUS appealing and are willing to switch to this long-acting method (68% of nonpostpartum hormonal IUS adopters were switching from a short-acting method). A substantial percentage of women adopting the hormonal IUS (30%) would have opted for a short-acting method if the hormonal IUS were not available, suggesting these are features of the method that distinguish it from other LARCs.

Few follow-up telephone interviews were successfully completed, but the high percentage (94%) of women who reported they would recommend the method to other women is encouraging. Bleeding disturbance was the most common reason given for hormonal IUS removals, perhaps because some women have fears about amenorrhea. Those who experienced amenorrhea were split between whether the change was positive or negative, but the numbers were small and need to be interpreted cautiously. Study results and lessons learned from implementation will be useful to inform best practices for phased scale-up. MCSP will also be publishing a mixed-methods article on this study and a similar one in Kenya.

Programming Opportunities and Recommendations

- While initial results indicate hormonal IUS inclusion in the contraceptive method mix at public facilities is feasible, key stakeholders at national and county levels need to continue to think about sustainable strategies for commodities. There is a need to incorporate the hormonal IUS into the national FP commodity supply chain management to ensure it becomes a sustainable part of the method choice in Zambia. The existing health management information tools and logistic information systems also need to be modified to separately track distribution, availability, and use of hormonal IUDs.
- As the MOH has expressed interest in supporting phased scale-up of the hormonal IUS to additional locations, it is critical that the discussions on sustainable paths to scale-up continue to take place with key stakeholders through the national FP Technical Working Group. This will help to identify existing systems and resources that can be used to support the interventions, ensuring the hormonal IUS is fully incorporated into existing FP programs and thus positioned for long-term sustainability. The coalition of hormonal IUS implementing partners, including SM360+, should continue creating opportunities in the national FP Technical Working Group for regular review of progress and discussion, adaptation, and improvement of approaches based on what is and is not working well.
- Implementers should continue to capitalize on any hormonal IUS funding opportunities to support introduction/expansion of the contraceptive method mix to strengthen existing FP services across the full range of methods (not just the hormonal IUS).
- When adding a new method to the existing contraceptive method mix, successful approaches must include program interventions that address both individual health provider and system-level gaps. Effective hormonal IUS/LARC programming should include a multipronged approach to address localized, needs-based gaps in the health system, and individual human capacity to create lasting improvements in health care outcomes.
- Health service providers should continue to receive additional training and support to improve their counseling skills and service delivery practices surrounding FP. When building provider capacity, it is important to support evidence-based, onsite capacity-building approaches that promote sustained increases in health provider performance. Capacity-building approaches that combine onsite clinical training with mentorship and supportive supervision are ideal for continuous improvement of clinical and managerial competencies, and for development of soft skills in leadership and client-centered care.[9] Continued advocacy with the MOH for further development and expansion of the national zonal mentorship program is needed. The national FP training curriculum also needs to be updated to include a module on the hormonal IUS (it is recommended that MCSP's hormonal IUS training module[10] be used in the meantime).
- It is also important to recognize champions and the good work of high-quality FP service providers. District and zonal health officials should monitor and offer supportive supervision to ensure oversight of all providers' skills and the quality of FP service delivery.
- Continue to strengthen the capacity of the national health system to engage communities, including strengthening the community health workforce's capacity in FP/LARCs, and supporting effective community outreach, engagement, and participation. Efforts to increase both the FP capacity and coverage of Safe Motherhood Action Groups, especially in hard-to-reach areas, are critical.
- Continue to assess interventions and strategies to help improve FP services, including supporting an MOH-requested rapid assessment of integration of the hormonal IUS into other sectors (e.g., maternal and child health and HIV services) in the current pilot sites.

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[9] Bluestone J, Johnson P, Fullerton J, Carr C, Alderman J, BonTempo J. 2013. Effective in-service training design and delivery: evidence from an integrative literature review. *Hum Resour Health*. 11:51. doi: 10.1186/1478-4491-11-51.
[10] MCSP. 2017. *Long-Acting Reversible Contraceptives Learning Package*. Washington, DC: MCSP.