

# Assessing the Feasibility of Including Removal Indicators for Long-Acting Reversible Contraceptives in Mozambique's National Family Planning Registers

**The Evidence to Action (E2A) Project is USAID's global flagship for strengthening family planning and reproductive health service delivery. As a member of the Implant Removal Task Force and the lead of its data sub-group, E2A conducted a study in collaboration with the Integrated Family Planning Project (IFPP) to test the feasibility of including a set of six removal indicators for long-acting reversible contraceptives (LARCs) in Mozambique's national family planning register and health management information system (HMIS).**



PHOTO Estrella Alcalde

## BACKGROUND

Implant uptake in sub-Saharan Africa has rapidly increased since 2012,<sup>1</sup> reflecting client demand, donor investments, and manufacturer price reductions. Given the increase in implant insertions, concern has emerged over lack of service delivery capacity or reliable implant removal data to support the impending wave of needed implant removals. This unparalleled increase in implant insertions will result in an equal growth of removals in three to five years post-insertions (Implanon® and Jadelle® respectively), as all inserted implants must be removed by competently skilled providers. Skilled service providers, including those able to perform difficult removals, are often unavailable. Many providers who complete competency-based trainings encounter low client load at their designated facility, resulting in limited or no practical experience in retaining their removal skills level. This limited practical experience is further compounded for difficult removals. While most countries carefully monitor LARCs uptake, either in the District Health Information System 2 (DHIS2) or through other performance monitoring mechanisms, few routinely monitor removals. Even fewer track reasons for removal, discontinuation, and method switching.<sup>2</sup> This lack of monitoring information hinders the capacity of ministries, program managers, and health facility staff to address quality of care within a comprehensive family planning (FP) services that include implant provision.

In response to the impending high demand for implant removal services, coupled with concerns about reliable implant removal data,

the Implants Access Program's Operations Group partnered with Jhpiego to support two technical consultations on implant removals. In late 2015, the group initiated the Implant Removal Task Force to bring together implementing partners and donors to identify existing best practices and call attention to research and programming gaps for future action.<sup>3</sup> The task force proposed a data subgroup, led by E2A, to improve data use and harmonize data—routine data at the country level and survey data currently collected by various projects/initiatives to increase understanding of implant removals. Within the context of routine HMIS data collection, the data subgroup advocated for the collection, reporting, and analysis of six relevant implant removal markers to track LARCs removal issues within national FP HMIS systems.

Mozambique, a low-income country with more than two-thirds of its population living in rural areas,<sup>4</sup> has made significant advances in contraceptive uptake in the last 12 years. The modern contraceptive prevalence rate (mCPR) increased from 14% in 2003<sup>5</sup> to 25% in 2015.<sup>6</sup> Of the 25% mCPR, 2% reported using implants, 6% used oral pills, and 13% used injectables. The remaining 4% comprised condoms, lactational amenorrhea, IUD, and tubal ligation.<sup>7</sup> Implant

1 Jacobstein R, Liftoff. The Blossoming of Contraceptive Implant Use in Africa. *Global Health: Science and Practice*. 2018, 6(1):17-39.

2 Castle S, Askew I. Contraceptive discontinuation: reasons, challenges, and solutions. New York: Population Council; 2015.

3 Christofield M and Lacoste M. Accessible Contraceptive Implant Removal Services: An Essential Element of Quality Service Delivery and Scale-Up. *Global Health: Science and Practice*. 2016; 4(3): 366–372.

insertions only began in 2013 at static health facilities. Shortly thereafter, in 2014, the Ministry of Health (MOH) decided to include implant insertions and referrals for IUDs as part of its outreach activities during National Health Weeks.

By 2015, implants were the third most frequently used method among all women of reproductive ages 15 to 49. The annual number of LARC insertions increased steeply from around 32,000 in 2013 to 324,000 in 2018. Cumulatively, a total of 1.6 million insertions were performed by the end of 2018. Because of this rapidly growing number of implant users, implant removal services are a growing need, to which the MOH must respond. This response should include the addition of relevant implant removal indicators in Mozambique's national FP registers and HMIS, strengthened technical capacity of service providers to remove devices, and increased supplies and consumables for implant removals.

Integrated Family Planning Program (IFPP), a five-year USAID/Mozambique-funded cooperative agreement implemented by Pathfinder International, N'weti, Abt Associates, and Population Services International (PSI) aims to increase mCPR by generating new FP users and a more diverse and effective method mix in IFPP-supported provinces. E2A, in collaboration with IFPP, conducted a study to test and document the feasibility of introducing the recommended six removal indicators in the national FP register and HMIS of Mozambique.

**This technical brief describes the study conducted by E2A and IFPP in Mozambique on the feasibility of including six recommended implant removal indicators in the national FP register and HMIS, as well as the perceived benefits and challenges encountered.**

## METHODOLOGY

E2A and IFPP designed the study using a mixed method approach. Quantitative data were extracted from FP addendum registers documenting normal and difficult LARCs removals. Qualitative data were collected through interviews with service providers during monthly supportive supervision visits. E2A and IFPP conducted the study in Nampula and Sofala provinces, where IFPP maintains fully operational FP programs. These provinces were purposefully selected based on feasibility and practicality, enabling day-to-day project management. E2A then applied a multi-stage sampling strategy to select the district and HCs in each province.

In the first stage, the assessment team reviewed DHIS2 data and extracted the number of removal clients for HCs (Type 1 and 2), district hospitals, and the central hospital for a 15-month period (January 2017–March 2018) from the 402 health facilities. The team selected district hospitals reporting removals (5 in Sofala; 6 in Nampula) and aligned each district hospital with its respective HCs (61 in Sofala; 182 in Nampula) located within the district hospitals

catchment area. In the second stage of sampling, HCs that reported five or more removals in one or more months were selected, reducing the total number of HCs and its aligned districts per province. In the third and final stage of sampling, the assessment team selected two HCs per district that reported the highest number of removals in any month. The total study health facilities selected was 17 (9 in Sofala; 8 in Nampula). Provincial MoH stakeholders also recommended including provincial capital HCs, adding two more for a final total sample of 19 facilities (10 in Sofala; 9 in Nampula). However, one health center in Sofala province became inaccessible due to heavy rains that severely damaged the main roads leading to the health facility, which then reduced the final sample to 18 facilities. E2A obtained ethical approval from the appropriate ethics review boards in the United States and Mozambique.

The national FP registers specifically document the modern method accepted, disaggregated by method type, noting Implanon NXT® and Jadelle® for implants. All IUDs are Cu-T. It is important to note that IUDs were included in the assessment on the recommendation of the provincial MoH stakeholders, who reasoned that IUDs are an integral component of their LARCs programming, and thus a holistic assessment of removals should naturally include IUDs. The FP register addendum for normal removals included the LARCs removal indicator suite, as described in Box 1.

A second FP register addendum for difficult removals comprised the LARCs “difficult removal” indicator suite: reason for referral, date of removal, removal outcome, and FP user status post-visit. The FP register addendum (normal removals) was used in the 19 selected health facilities, while the FP register addendum (difficult removals) was used only at the district (n=6) and central (n=2) hospitals. Age, parity, and marital status at time of visit were included in both FP register addendums. The supportive supervision checklist included questions on perceived benefits and challenges encountered in completing the FP register addendums as well as amount of time spent recording the normal removal indicator suite.

Data collection took place over a six-month period, from November 21, 2018 to May 20, 2019. The field study team (one senior and three junior staff from IFPP's provincial offices in Nampula and Sofala, respectively) visited facilities each month immediately after the closure of the HMIS reporting period. During each visit, the study team reviewed the previous month's FP addendums for normal and difficult removals with the on-call service provider as appropriate, clarified any data quality issues, and scanned the respective FP register addendum pages. The field study team also administered the supportive supervision checklist with the on-call service provider, which took 5 to 10 minutes and was conducted in Portuguese. Data were then extracted from the registers, entered into Excel spreadsheets, and transferred to SPSS for analysis. Information from the supportive supervision checklist was reviewed and thematically analyzed to assess time spent recording the removal indicator suite as well as perceived benefits and challenges encountered during record keeping. In total, the field study team documented 795 (Nampula=336; Sofala=459) removal clients in the FP register addendum and conducted 64 supervisory visits (Nampula=33; Sofala=31).

4 Mozambique Census 2017. Preliminary Results. IV. Population and Housing Census.

5 Mozambique Demographic and Health Survey 2003.

6,7 Inquérito de Indicadores de Imunização, Malária e HIV/SIDA em Moçambique (IMASIDA) 2015.

## BOX 1: LARCS REMOVAL INDICATOR SUITE

The following six indicators, advocated by the data subgroup of the Implant Removal Task Force, were included in the national family planning register addendums for normal removals.

**Reason for client visit:** LARCs removal was an option for clients seeking family planning/reproductive health services.

**Reasons for seeking removal:** several categories—such as expired, method change, opted to get pregnant, vaginal bleeding, vaginal discharge, arm pain, headache, family opposition, infrequent sex, reduces sexual pleasure, interferes with body natural processes—were listed; specific multiple responses instructions were also included.

**Time since insertion:** date of insertion and date of successful removal were two separate columns.

**Removal outcome:** included several options such as not removed, not removed but referred and removed. The latter category included a series of removal options (no difficulty, incomplete, with difficulty, and with significant difficulty) to capture the range of potential outcomes during the removal process.

**Reasons for referral:** several categories were listed, such as trained provider unavailable, no equipment/consumables availability, implant unpalpable, IUD string not visible, incomplete removal, complicated removal, and client requested referral. Specific multiple responses instructions were also included.

**Client visit outcome:** reflected the outcome of the client's visit—Not Removed/Removed, including FP user status post removals:

- **Not Removed:** options included not removed or referred for difficult removals
- **Removed:** disaggregated by the client's FP user status post-removals:
  - *Removed–Non-FP User:* options included not counseled, counseled only, counseled and referred, and refused
  - *Removed–FP User:* options included LARCs, Short-Acting Methods and Tubal Ligation

## STUDY LIMITATIONS

During data collection, accessibility to one health facility in Sofala province was markedly curtailed due to heavy rains that severely damaged the main roads leading to the health facility. As a result, data were collected in 18 of the 19 study sites. In these sites, data collection went smoothly over the six-month period, though the downstream effect of Hurricane Idai adversely affected data collection in six Sofala study sites for approximately three weeks (March 15 to April 10, 2019).

Another limitation was the study's inability to track each of the four difficult removals to its referral district or central hospital as recorded in the FP register addendum (normal removals). This was caused by limitations in tracking the medical record number and/or referral form. Finally, there may have been either an over- or under-estimation of specific reasons for seeking removals.

For example, nearly 30% of clients reported “on-schedule/expired” as the reason for seeking removals, whereas duration of use documented 17.1% of clients (n=113) with on-schedule (n=68) and delayed (n=45) removals. The study team recommends probing to offset either provider or client bias in eliciting and documenting reasons for seeking removals.

**KEY FINDINGS** Key findings are highlighted below and organized by demographic characteristics, the LARCs removal indicator suite, and the feasibility assessment. Over the six-month data collection period, the field study team documented a total of 795 (Nampula=336; Sofala=459) LARCs removal clients in the FP register addendum and conducted 64 supervisory visits (Nampula=33; Sofala=31). The most common method removed was Jadelle (n=593). Significantly fewer IUDs or Implanon NXT were removed (See Table 1).

Table 1: Number of LARC removal client visits per month, Nampula and Sofala; December 2018–May 2019

LARCS REMOVAL CLIENTS	LARC Removal Client Visits						
	December	January	February	March	April	May	Total
<b>Health Facility Category</b>							
Central hospitals (n=2)	12	13	8	8	3	17	61
District hospitals (n=4)	20	28	30	12	27	32	149
Urban health centers (n=4)	91	74	118	61	47	83	474
Rural health centers (n=8)	23	15	23	14	16	20	111
TOTAL (n=18)	146	130	179	95	93	152	795
<b>LARCs Method*</b>							
Jadelle	111	101	133	62	65	121	593
Implanon NXT	2	3	5	4	5	2	21
Cu-T IUD	9	8	16	7	13	14	67
Not Removed	24	18	24	21	10	15	112
<b>TOTAL</b>	<b>146</b>	<b>130</b>	<b>178</b>	<b>94</b>	<b>93</b>	<b>152</b>	<b>793</b>

\* Missing information: 2

## DEMOGRAPHIC CHARACTERISTICS

Nearly 43% of removal clients were under the age of 25. Among the 792 removal clients with complete marital status information, nearly equal proportions were married (43.9%) or never married/co-habiting (43.8%). Parity differentials among the 794 removal clients depicted a notable pattern: slightly over half (51.3%) had one to two children, and a considerable number (11.2%) were nulliparous. Parity was associated with marital status among removal clients. Nulliparous women (75.8%) were more often never married—as compared to women with one or two children (44.6%) or multiparous women (32.4%).

## LARCS REMOVAL INDICATOR SUITE

The section below, describing the six LARCs removal indicator suite advocated by the Implant Access Task Force, provides an overview of the research results and assesses the potential benefits of adding these indicators for LARCs monitoring and evaluation (See Table 2).

**Reason for Client Visit:** Over the six-month data collection period, 795 clients sought FP services in the 18 study health facilities for LARCs removals. Of these, nearly three quarters sought services at health centers, most in urban health centers (n=474).

**Reasons for Seeking Removals:** E2A and IFPP trained service providers to ask and record reasons for client visits, recognizing that more than one reason was possible. The study team subsequently recoded the reasons into broader categories. Side effects included vaginal bleeding, vaginal discharge, headache, and interference with natural body processes; misconception included arm discomfort/pain and back pain; and social norms included husband/in-law opposition and mother opposition. The three most frequent perceived reasons for seeking removals:

- On-schedule/expired (29.5%)
- Side effects (25.8%)
- Desire to be pregnant (22.9%)

Close to 8% sought removals to switch methods. Misconceptions (5.6%) and social norms (3.2%) also influenced clients' decisions to seek removals.

Parity influenced the desire to seek removals. Nulliparous women most often sought removals for desire to get pregnant (26.5%) or side effects (31.3%), whereas multiparous women most frequently sought removals for on-schedule/expired (35.5%) or side-effects (25.3%).

Table 2: Percent distribution of clients seeking LARCs removals (n=795) and LARCs successfully removed (n=679), Nampula and Sofala; December 2018–May 2019

LARCS REMOVAL CLIENTS	TOTAL	
	n	%
<b>Reason for Client Visit</b>		
FP visit: new acceptors	10,550	-
FP visit: repeat acceptors	60,477	-
FP visit: LARCs removal	795	-
<b>Reasons for Removal</b>		
On-schedule/expired	228	29.5
Side effects	199	25.8
Desire to be pregnant	177	22.9
Switch method	61	7.9
Misconceptions	43	5.6
Social norms	23	3.2
Method failure	13	1.7
Others	26	3.4
<b>Time Since Insertion (n=661)*</b>		
Very early	109	16.5
Early	83	12.5
Early mid-schedule	191	28.9
Mid-schedule	165	25.0
On schedule	68	10.3
Delayed	45	6.8
<b>Removal Outcome (n=795)</b>		
Not removed	112	14.1
Removed: no difficulty	664	83.5
Removed: with difficulty	10	1.3
Removed: incomplete	5	0.6
Removed: significant difficulty	0	0.0
Not removed: referred**	4	0.5
<b>Reasons for Referral (n=4)</b>		
IUD string not visible	2	50.00
No equipment/consumables available	1	25.00
Removal too complicated***	1	25.00
<b>Client Visit Outcome (n=788)****</b>		
<b>Removed: Non-FP User (n=440)</b>		
Not counseled	188	23.9
Counseled only	52	6.6
Counseled and referred	3	0.4
Refused	197	25.00
<b>Removed: FP User (n=232)</b>		
User (LARCs)	39	4.9
User: short-acting methods	186	23.6
User: tubal ligation	7	0.9
<b>Not Removed: (n=116)</b>		
Retained LARCs	112	14.2
Referred (difficult removal)	4	0.5

\* Categorized independently per effective period for Jadelle, Implanon NXT, and IUD; and subsequently collated

\*\* Four clients referred— IUD=3; Implant=1

\*\*\*Additional expertise/equipment required: Implant not palpable

\*\*\*\*Missing information=7



**Time Since Insertion:** Time since insertion was calculated as the time interval (in months) between date of insertion and date of successful removal (n=661). After their initial review of data, the study team developed time-dependent categories based on the effectiveness periods for Jadelle (n=576), Implanon NXT (n=19), and IUD (n=66). Then, the study team collated the data into these categories and analyzed the results, which revealed that nearly 55% of the 679 clients with successful LARC removals sought removal services within two years—earlier than required. Significantly fewer (10.1%) removals were found to be on-schedule/expired.

Parity significantly influenced time since insertion. Nulliparous women (39.7%) most often sought removals very early or early, followed by women with one to two children (31.4%), and multiparous women (23.1%) (p-value  $\leq 0.002$ ).

**Removal Outcome:** Among the 795 women seeking LARC removals, 664 (83.5%) LARCs were successfully removed with no difficulty. After receiving targeted counseling per LARCs removal guidelines, 112 women (14.1%) opted against removal. The remainder (n=19) of removals were:

- Difficult, though successfully removed at the same facility (n=10),
- Incomplete (n=5), or
- Referred (n=4).

There were no recorded cases of significantly difficult removals in the FP register addendum (normal removals).

LARCs removed were most often implants [(Jadelle® (n=591) or Implanon NXT® (n=21)<sup>a</sup>]. Significantly fewer IUDs were removed

(n=67). This largely mirrors the LARCs uptake distribution. The FP register addendum of difficult removals employed at district and central hospitals to track referrals and eventual removals did not record any referrals from urban and rural health centers.

**Reasons for Referral:** In the normal removals FP register addendum, reasons for referrals (IUD=3; Implants=1) included IUD string not visible, equipment/consumables unavailable, and implant not palpable/removal too complicated. Unfortunately, tracking the medical record numbers and/or referral forms of these four clients to the referral facilities—district and/or central hospitals—was not possible despite the field team's efforts.

**Client Visit Outcome:** Family planning services (counseling and service provision) are offered to all clients seeking LARCs removals, per LARCs removal/FP service delivery guidelines. The “initial targeted counseling session” occurs before removal and is tailored to the specific reason(s) for removal. The “post-removal FP session” takes place after successful removal.

Among the 788 clients with complete clinic visit outcome information, 116 removal clients either opted to continue with LARCs (n=112) following initial targeted counseling session or were referred for difficult removal (n=4). The remainder (n=672) were recorded as successfully removed, with no or minor difficulty.

FP services were offered to these 672 clients per “post-removal FP session” guidelines. While a substantial number (n=232) were counseled and subsequently accepted a method—most often a short-acting method (n=186)—a considerable number (n=188) were not counseled. Of these, most (n=127) desired a pregnancy.

“It shows that if the health provider does a proper counseling at the insertion [and at] subsequent visits and [ensures] proper management of side effects, **method retention could be higher.**” —Service Provider

### SUPPORTIVE SUPERVISION: FEASIBILITY ASSESSMENT

Routine supervisory visits included facility-level data discussion and feedback geared toward drafting a plan of action for improving identified gaps. These were transmitted to the District Health Office for appropriate follow-up action. The study team conducted 64 supportive supervisory visits at study health facilities, where they reviewed and provided feedback on the past month’s addendum register, as well as identified and solved problems related to removals. In addition, on-call service providers shared their perceptions regarding feasibility of introducing the LARCs removal indicator suite.

Service providers overwhelmingly perceived that the additional LARCs removal columns in the national FP register were useful and effortless to record. Perceptions of usefulness pertained to documenting the number and timing of removals, recognizing reasons for removals, and insights to quality of services. One service provider remarked, “It shows that if the health provider does a proper counseling at the insertion [and at] subsequent visits and [ensures] proper management of side effects, method retention could be higher.” The most significant challenge reported was ascertaining the date of insertion.

Table 3: Feasibility parameters of time taken, ease in filling and perceived benefits for the LARCs removal indicator suite; Nampula and Sofala; December 2018—May 2019

VARIABLES	TOTAL Number
<b>Ease in filling</b>	
No problems	58
Difficulty	3
<b>Time Taken (minutes)</b>	
≤2	29
3-5	25
6-9	5
<b>Burden in Recording</b>	
No burden	63
Burden	1

“All fields [columns in the FP register addendum (normal removals)] **are easy [to enter required information]**” —Rural Health Center, Sofala

“In the beginning...[it] was difficult but **after the explanation it is easy.**”  
—District Hospital, Nampula

### CONCLUSIONS AND RECOMMENDATIONS

The results from this assessment suggest that inclusion of additional columns in the national FP register to ascertain LARCs removals is useful and does not add significantly to service providers’ workloads. We recommend including the six LARCs removal columns with clear and concise descriptions of the codes and recording instructions, noting that the current FP register includes a reason for client visit with the coding option of LARCs removal. The study team proposes these additional columns: reason for seeking removal, date of insertion, date of removal, method removed, removal outcome, and reasons for referral.

The study team deemed it particularly important to include "reason for removal" and "removal outcome" in the DHIS2 to enable the tracking of social barriers influencing LARCs uptake and assessment, including whether side effects are being efficiently addressed by the providers. Furthermore, inclusion of these indicators will strengthen facility-based monthly discussions and analysis, including calculating duration of use per LARCs method type and health provider performance. This will enable the development of strengthened plans of action in addressing identified gaps pertaining to LARCs removals.

However, the assessment team recommends excluding the tracking of difficult and/or incomplete removals to ascertain removal outcome for referred difficult removals, noting that the process is overly cumbersome and, currently, normal removals are not being adequately addressed.

To strengthen the execution of this recommendation, the study team proposes that a broad array of stakeholders from the public sector join implementing partners at various levels (national and provincial) to actively engage in technical discussions regarding the rationale, usefulness, and ease of including the additional columns to strengthen Mozambique’s ambitious LARCs/FP programs—particularly the programmatic implications of including the suite of removal indicators for forecasting removal load and monitoring quality of care.

Finally, the study team’s findings support strengthening FP counseling and services via focused refresher trainings on counseling techniques, balanced counseling, knowledge of side effects, and awareness of common misconceptions to minimize early removals and maximize LARC retention.



PHOTO: Sala Lewis



PHOTO: Marlen Vespija

The Evidence to Action (E2A) Project is USAID's global flagship for strengthening family planning and reproductive health service delivery. The project aims to address the reproductive healthcare needs of girls, women, and underserved communities around the world by increasing support, building evidence, and facilitating the scale-up of best practices that improve family planning services. The project is led by Pathfinder International, in partnership with ExpandNet, IntraHealth International, and PATH.

[e2aproject.org](http://e2aproject.org)

