Client and Provider Experiences with Removal of Long-Acting Reversible Contraceptives in Senegal

DATA DOCUMENTATION

1. INTRODUCTION

Many countries in sub-Saharan Africa are committed to accelerating family planning progress and increasing modern contraceptive prevalence. Provision of a range of contraceptive methods, including long-acting reversible contraceptives (LARCs), is important to meet the diverse needs of women and achieve these goals. LARCs, including implants and IUDs, are highly effective methods that offer protection from pregnancy for several years, after which they need to be removed by a qualified provider. While continuation rates are typically higher than those for other methods, women can also choose to have their LARC removed early, before the expiration date. A pooled analysis from Demographic and Health Survey (DHS) data from 21 low- and middle-income countries indicates that on average, within the first year of use, 9% of women discontinue implants and 15% discontinue IUDs.[1] By year 2, discontinuation rates slightly exceed 15% for implants and 30% for IUDs.[1]

Use of implants in sub-Saharan Africa has sharply increased in the past 20-years.[2, 3] Data from service delivery partners and postpartum initiatives also show good success with IUDs in some contexts.[4, 5] While increasing numbers of LARCs are being inserted, whether and to what extent providers and health systems are prepared to handle the inevitable increase in demand for removals is less clear. Ensuring access to quality LARC removal services early or at expiration date is key for the long-term success of family planning programs and compliance with informed choice in contraceptive adoption and use. Anecdotal information from a variety of contexts points to potential challenges including inadequate medical equipment, limited availability of trained providers, excessive fees, or provider resistance. In addition, difficult removals (especially for implants when they are inserted too deeply and cannot be palpated, or when they are bent or broken) can add another layer of challenges. However, to date, there is a dearth of information on the types and prevalence of barriers to removals.

An FP2020 commitment-maker and a member of the Ouagadougou Partnership, Senegal set a goal of 45% modern contraceptive prevalence by 2020. Between 2010-2011 and 2017, the proportion of women in union using a modern method rose from 12% to 26%.[6, 7] Implant use increased from 8 to 30% of the method mix, while the share of IUD use remained the same at 8%. The vast majority of implants (95.8%) and IUDs (92.5%) are sourced from the public sector, primarily at static facilities.[7] As increasing numbers of women adopt LARCs in Senegal, enhanced understanding of the state of removal services and potential areas for improvement is timely and important.

This study aimed to gain a more complete picture of the state of LARC removal services in Senegal, with a view to identify potential areas for improvement as more and more women are expected to need removal services.

2. STUDY OBJECTIVES

The goal of this research is to generate evidence on removal services for LARCs, including both implants and IUDs, by gathering information on both client and provider experiences with removal services. Specific objectives are to:

1. Document LARC removal desires, including whether LARC acceptors ever attempted to get a removal, timing of removal attempts relative to insertion, and reasons for attempting to get a removal;
2. Describe LARC removal outcomes, including number of attempts, whether a removal was obtained, reasons for obtaining/not obtaining a removal, and satisfaction with keeping or removing LARC after the attempt;
3. Explore barriers to removals, including client, provider, and health system factors contributing to removal outcomes;
4. Model referral networks and access to services for difficult implant removals within a geographic information system (GIS) and model different scenarios for strengthening current services.

3. STUDY DESIGN

This study was conducted in three regions of Senegal – Dakar Centre, Kolda, and Saint Louis – in both public and private sector service delivery settings. The study was a descriptive, observational study with a convergent design combining the following data collection components:

- Cognitive interviews to refine the questionnaires for a survey with LARC acceptors and a survey with LARC providers;
- Phone survey with LARC acceptors;
- Follow-up in-person survey to obtain more details about the experiences of the subset of LARC acceptors participating in the phone survey who have ever tried to obtain a removal;
- Follow-up in-person in-depth interviews (IDIs) with a different subset of LARC acceptors to provide a more in-depth understanding of different types of removal experiences;
- A health facility questionnaire;
- Survey with providers offering LARC removal services;
- IDIs with a different group of LARC providers.

This document includes only information related to the quantitative data and does not include any information about the cognitive interviews either.

Study design changes due to COVID

Data collection was were completed in Dakar Centre and Saint Louis when COVID shutdowns started. We pivoted to phone-only data collection in Kolda as a result. In Kolda we did not complete facility or provider surveys, but completed the remainder of the data collection components. For ease of explanation, we will continue to refer to the in-person survey component as “in-person” in Kolda despite the change to phone data collection.

Study Populations

LARC acceptor population (phone survey)

Eligible women were adults or emancipated minors who had an implant or IUD inserted at a public health facility between July 2016 and June 2018 and had phone information available in their clinic records.

LARC acceptor population (in-person survey)

Eligible women participated in the phone survey and indicated as part of their responses that they had ever tried to obtain a LARC removal.

Health facility population (conducted with facility in-charge)

Eligible facilities were public health facilities offering LARCs in two districts of Senegal (Dakar Centre and Saint-Louis).

Provider who offer LARC removal population

Eligible providers came from public sector facilities in Dakar Centre and Kolda and were trained to insert implants and had been at their current facility at least on year.

Sampling & Recruitment

LARC acceptor population (phone survey & in-person survey)

Providers identified eligible women from clinic registers, called them to inform them of the study, and provided the research team with the information of those agreeing to be contacted.

Data collection involved a two-step process, including a phone-based population survey of all women willing to be contacted, followed by an in-person survey or in-depth interview (IDI) with the subset of women who indicated during the phone survey that they had ever asked a provider to remove their method. We used responses to the phone survey to purposively select IDI participants representing a range of removal outcomes and invited all other eligible women to participate in the follow-up survey. We selected implant users only for IDIs because this method is more widely used than the copper IUD in Senegal.

Health facility population (conducted with facility in-charge)

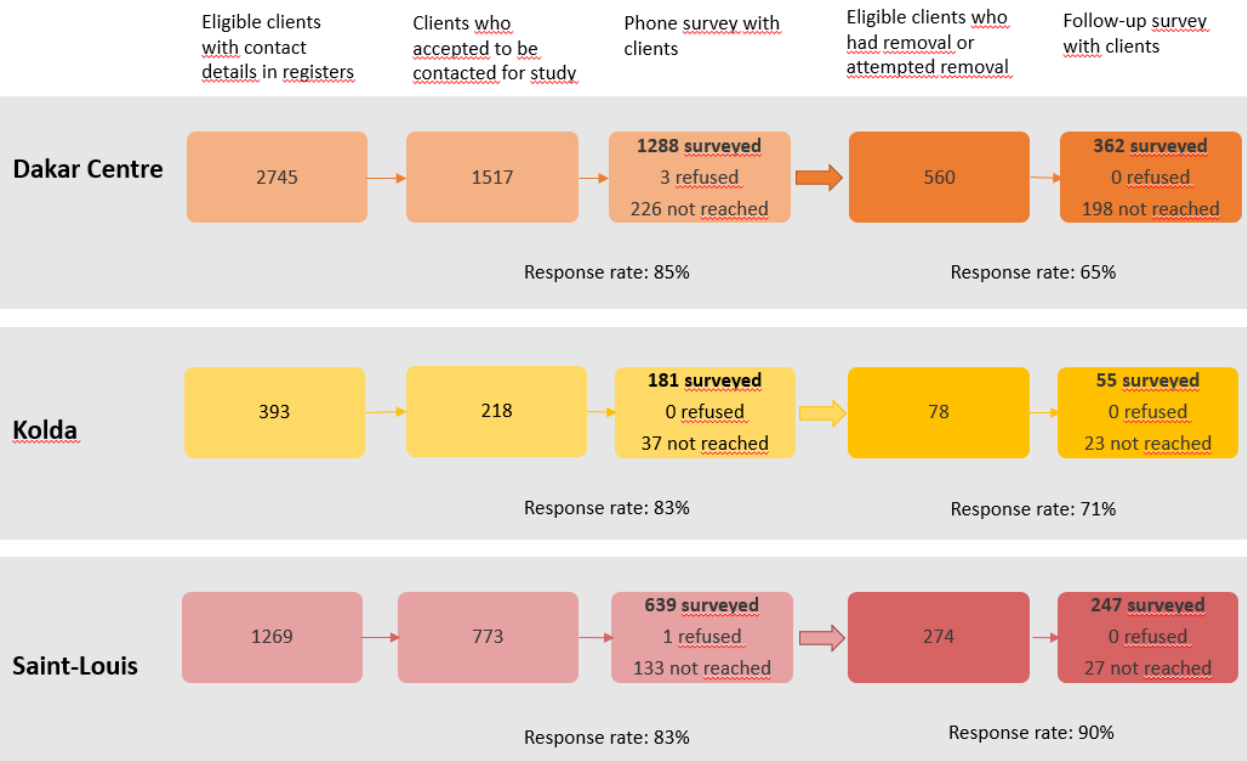
Primary respondents to the health facility questionnaire were the in-charge of the facility; after they provided written consent for the health facility, these respondents could solicit input from other staff based on expertise relevant to specific questions.

Provider who offer LARC removal population

We established a listing of all public facilities offering LARCs within the two districts and identified eligible providers within them. We purposively selected four facilities per district that had at least two eligible providers and represented different levels of the health system (health centers and health posts). We surveyed between one and two providers from all facilities offering LARCs depending on the number of providers that were eligible and available.

Sample Size

LARC acceptor population (phone survey & in-person survey)



Health facility population (conducted with facility in-charge)

The health facility assessment was conducted in 39 facilities (13 in Dakar Centre and 26 in Kolda).

Provider who offer LARC removal population

Provider interviews were conducted with 55 providers (19 in Dakar Centre and 36 in Kolda).

4. DATA COLLECTION

Data were collected from:

- LARC acceptors (phone) – December 3, 2019-April 1, 2020
- LARC acceptors (in-person) – January 24-May 29, 2020
- Health facilities – January 24-March 18, 2020
- Providers - January 24-March 18, 2020

Data were collected by trained research assistants during telephone and in-person interviews. Data were entered at the time of the interview onto tablets in Open Data Kit (ODK).

5. DATA MANAGEMENT

Research assistants collected and entered data in the field using tablets. Data were transferred to a secure server when a wireless connection was available.

Data were cleaned in Stata 16 (LARC acceptors phone and in-person) and Stata 15 (health facilities and providers). Study data are contained in four datasets:

- LARC acceptors (phone) – Senegal_AIIRS_ClientPhone.csv
- LARC acceptors (in-person) - Senegal_AIIRS_ClientInPerson.csv
- Health facilities – Senegal_AIIRS_Facility.csv
- Providers - Senegal_AIIRS_Provider.csv

Variable Naming Conventions

Variables had consistent names across the four datasets. Variables were named for the question number (ex. Question 101 is variable q101).

Merging and Transforming Datasets for Analysis

LARC acceptor (phone) and LARC acceptor (in-person) datasets may be merged on the variable *uid.* Note that many variables have the same name in each dataset so one needs to rename all the variables in one dataset before the merge.

LARC acceptor (in-person) may be analyzed by attempt at removal by reshaping the dataset from wide to long. In order to reshape the data, one will need to create a variable for attempt number (4 maximum attempts) and reshape on attempt number. The explanation of how to create the attempt number variable is below.

6. DEFINITION OF VARIABLES & VARIABLE CREATION

UNIQUE IDENTIFERS

uid (continuous) uid is the participant identification number.

WEALTH INDEX CREATION

(*Dataset: Senegal_AIIRS_ClientPhone.csv)*

Wealth questions in the survey are based on the equity tool for Senegal. The website for this tool contains instructions for analysis, including STATA commands and SPSS syntax that will implement the analysis automatically, as well as information to conduct the analysis using other software. Upon consultation with partners, we used the urban scores to generate quintile results. The steps involved in this analysis are:

- Each respondent gets a national and urban wealth index score for each question, depending on their response
- The scores for all the questions are added together for each respondent, giving each respondent a total national and urban score
- The respondent is then assigned a national and urban wealth quintile based on their score. Their total score must be greater than or equal to the lower limit of a quintile, and less than the lower limit of the next quintile up.

METHOD INFORMATION INDEX CREATION

The method information index is based on the standard indicator outlined here and indicates if a respondent was given the appropriate information to make an informed choice. The respondent is assigned a 1 (yes) if they responded yes to q306, q308/q309 (yes to either or both), and q310. The respondent is assigned a 0 (no) if they responded no to any or all of the questions above. (*Dataset: Senegal_AIIRS_ClientPhone.csv)*

OUTCOME AND KEY VARIABLES

This section explains how we created the main outcome variables for this study. The datasets available on Dataverse includes these variables.

p_inperson Dataset: Senegal_AIIRS_ClientPhone.csv

Description: groups all participant into 9 categories which will be used to determine eligibility for the in-person interview

CODE	DEFINITION	HOW CREATED
1	Method removed by provider, never tried obtaining a removal elsewhere	q401 == 1 & (q405 == 1 |q405 == 3 | q406a == 0)
2	Method removed by provider, tried obtaining a removal elsewhere	q401 == 1 & q406a == 1
3	Method removed but not by a provider, never asked provider for a removal	inlist(q401,3,4,5,6,7) & q402 == 0
4	Method removed but not by a provider, asked a provider for a removal	inlist(q401,3,4,5,6,7) & q402 == 1
5	Still has method, never asked provider for a removal, never wanted to remove	q408 == 0 & q409 == 0 & q410 == 1
6	Still has method, never asked provider for a removal, wanted to remove, tried obtaining a removal elsewhere	q408 == 0 & q409 == 1 & q411 == 1 & q414 == 1
7	Still has method, never asked provider for a removal, wanted to remove, never tried obtaining a removal elsewhere	q408 == 0 & q409 == 1 & q411 == 1 & q414 == 0
8	Still has method, asked provider for a removal, tried	q408 == 1 & q418 == 1

	obtaining a removal elsewhere	
9	Still has method, asked provider for a removal, never tried obtaining a removal elsewhere	q408 == 1 & q418 == 0

elig_inperson

Dataset: Senegal_AIIRS_ClientPhone.csv

Description: Groups all participants into eligible for in-person or not

CODE	DEFINITION	HOW CREATED
0	no, not eligible	inlist(p_inperson,3,5,6,7)
1	yes, eligible	inlist(p_inperson,1, 2, 4, 8, 9)

NON-OUTCOME VARIABLES OF INTEREST

This section explains how we created other variables used in our analysis. These variables are not in the dataset available on Harvard Dataverse.

attnum

Dataset: Senegal_AIIRS_ClientInPerson.csv

This variable represents the number of attempts a respondent made to get a LARC removal. Respondents who said they never discussed a removal with a provider were eliminated from this calculation (q401=3). All other respondents who participated in the in-person interview were counted as making at least one attempt. Additional attempts are calculated by a response provided to q501, q501_2, and q503_3. If a response is provided to these questions, then an attempt was made. If the questions have missing values, then no attempt was made.

implant_type

Dataset: Senegal_AIIRS_ClientPhone.csv

This variable is created to categorize the type of implant a woman had based on the agreement between how they reported the number of rods (q312) and the duration of protection as noted by the provider (years314)

1= Implanon, 3 years
2= Jadelle, 5 years
3= Incorrect combination
4= don't know

first_att_outcome

Dataset: Senegal_AIIRS_ClientPhone.csv & Senegal_AIIRS_ClientInPerson.csv

This variable is created to categorize participants who attempted removal by if they felt the decision to remove was right or wrong at their first attempt.

note on variable names: p_x variables are from the phone dataset

CODE	DEFINITION	HOW CREATED
1	method removed, reported right decision	(p_q404a==1 | p_q404b==1 | p_q407==1) & q429!=1 & q101==2 & q401!=3
2	method removed, reported wrong decision	(p_q404a==0 | p_q404b==0 | p_q407==0) & q429!=1 & q101==2 & q401!=3
3	still has method, reported right decision	q413==1
4	still has method, reported wrong decision	q413==0
5	Partial/failed removal	q415==2 | q415==3 | q416==0

num_interact

Dataset: Senegal_AIIRS_ClientInPerson.csv

This variable is created to provide a count of the cumulative number of interactions a woman had with a provider about a removal. An interaction is defined as discussing a removal with a provider regardless of outcome (removal or not). The variable is created by summing if a woman responded to questions q401, q501, q501_2, q501_3 or not. A response is recorded as an interaction. The maximum number of interactions is 4.

fin_outcome

Dataset: Senegal_AIIRS_ClientPhone.csv & Senegal_AIIRS_ClientInPerson.csv
note on variable names: p_x variables are from the phone dataset

This variable is created to show the distribution of women based on the outcome of their final removal attempt. It is presented as a categorical variable including 1) method removed, reported removing was right decision, 2) method removed, reported removing was wrong decision, 3) Still has method, reported keeping was right decision, 4) still has method, reported keeping was wrong decision, 5) partial or failed removal.

Respondents are asked about their happiness with removal in the phone survey if they reported their method was removed or they spoke to a provider about a removal (p_q404a, p_q404b, p_q407). Note, respondents that had a removal between the phone and in-person surveys were not asked about their happiness with removal as this question was only asked in the phone survey.

Several intermediate variables are created (described below) in order to create the variable *fin_outcome.*

VAR	DEFINITION	HOW CREATED
rem_happy	method removed, respondent happy with removal = 1, unhappy with removal = 0, don't know = 88, no response = 99, removed between surveys = 77	gen rem_happy = . replace rem_happy = 1 if p_q404a==1 | p_q404b==1 | p_q407==1 replace rem_happy = 0 if p_q404a==0 | p_q404b==0 | p_q407==0 replace rem_happy = 88 if p_q404a==88 | p_q404b==88 | p_q407==88 replace rem_happy = 99 if p_q404a==99 | p_q404b==99 | p_q407==99 replace rem_happy = 77 if p_q106==1 & q101==2
keep_happy	method kept, respondent happy with keeping = 1, unhappy with keeping = 0, don't know = 88, no response = 99	gen keep_happy = . *someone who had only one visit and still has replace keep_happy = 1 if q101==1 & (q413==1 & q429==0) replace keep_happy = 0 if q101==1 & (q413==0 & q429==0) replace keep_happy = 88 if q101==1 & (q413==88 & q429==0) replace keep_happy = 99 if q101==1 & (q413==99 & q429==0) *second visit: removal attempt was not made, did not see another time replace keep_happy = 1 if q101==1 & (q506==1 & q523==0) replace keep_happy = 0 if q101==1 & (q506==0 & q523==0) replace keep_happy = 88 if q101==1 & (q506==88 & q523==0) replace keep_happy = 99 if q101==1 & (q506==99 & q523==0) *third visit: removal attempt was not made, did not see another time replace keep_happy = 1 if q101==1 & (q506_2==1 & q523_2==0) replace keep_happy = 0 if q101==1 & (q506_2==0 & q523_2==0) replace keep_happy = 88 if q101==1 & (q506_2==88 & q523_2==0) replace keep_happy = 99 if q101==1 & (q506_2==99 & q523_2==0) *fourth visit: removal attempt was not made, did not see another time replace keep_happy = 1 if q101==1 & (q506_3==1 & q523_3==0) replace keep_happy = 0 if q101==1 & (q506_3==0 & q523_3==0) replace keep_happy = 88 if q101==1 & (q506_3==88 & q523_3==0) replace keep_happy = 99 if q101==1 & (q506_3==99 & q523_3==0)

fail_rem	partial or failed removal is final outcome, 1= failed/partial, 0 = successful	*1 is failed attempt gen fail_rem = . replace fail_rem = 1 if q415==2 | q415==3 | q416==0 replace fail_rem = 0 if q415==1 | q416==1 replace fail_rem = 88 if q415==88 | q416==88 replace fail_rem = 99 if q415==99 | q416==99 *another attempt replace fail_rem = 1 if q508==2 | q508==3 | q509==0 replace fail_rem = 0 if q508==1 | q509==1 replace fail_rem = 88 if q508==88 | q509==88 replace fail_rem = 99 if q509==99 | q509==99 *again replace fail_rem = 1 if q508_2==2 | q508_2==3 | q509_2==0 replace fail_rem = 0 if q508_2==1 | q509_2==1 replace fail_rem = 88 if q508_2==88 | q509_2==88 replace fail_rem = 99 if q509_2==99 | q509_2==99 *again final time replace fail_rem = 1 if q508_3==2 | q508_3==3 | q509_3==0 replace fail_rem = 0 if q508_3==1 | q509_3==1 replace fail_rem = 88 if q508_3==88 | q509_3==88 replace fail_rem = 99 if q509_3==99 | q509_3==99
fin_outcome	final outcome 1 "Removed, right decision" 2 "Removed, NOT right decision" 3 "Not removed, right decision" 4 "Not removed, NOT right decision" 5 "Partial/failed removal" 6 "DK/NR/Not asked" 7 “removed between surveys, don’t know happiness”	gen fin_outcome = . replace fin_outcome = 1 if rem_happy==1 replace fin_outcome = 2 if rem_happy==0 replace fin_outcome = 3 if keep_happy==1 replace fin_outcome = 4 if keep_happy==0 replace fin_outcome = 5 if fail_rem==1 replace fin_outcome = 6 if rem_happy==88 |rem_happy==99 | keep_happy==88 | keep_happy==99 | fail_rem==88| fail_rem==99 replace fin_outcome = 7 if rem_happy==77

visit

Dataset: Senegal_AIIRS_ClientInPerson.csv

This variable is created to provide a count of the cumulative number of visits (with or without a clinical removal attempt) a woman had until complete removal.

CODE	DEFINITION	HOW CREATED
1	1 visit	q415 = 1 or q416 = 1
2	2 visits	q508 = 1 or q509 = 1
3	3 visits	q508_2 = 1 or q509_2 = 1
4	4 visits	q508_3 = 1 or q509_3 = 1

attempt Dataset: Senegal_AIIRS_ClientInPerson.csv

This variable is created to provide a count of the cumulative number of removal attempts (with a clinical removal attempt) a woman had until complete removal.

CODE	DEFINITION	HOW CREATED
1	1 attempt	q411=1
2	2 attempts	q504=1
3	3 attempts	q504_2=1
4	4 attempts	q504_3=1

unmet_need Dataset: Senegal_AIIRS_ClientInPerson.csv

Unmet need is created by determining the percentage of women who do not uptake a method of contraception at removal (q431, q527, q527_2, q527_3) and do not want to get pregnant (q433a, q527_a, q527_2_a, q527_3_a) but who are not infecund (q433g, q527_g, q527_2_g, q527_3_g) or not sexually active (q433f, q527_f, q527_2_f, q527_3_f).

7. LIMITATIONS

First, the phone survey brings particular challenges that may affect non-response rates, such as phones being turned off, running out of battery, poor reception, numbers changing frequently, or people not answering calls if they do not recognize the number. Initial calls by providers and repeated attempts to reach women at varying days/times are intended to mitigate these challenges. Moreover, as a result of the purposive selection of study districts and of the need for phone information, the population of eligible women may not be representative of the general LARC acceptor population. The eligibility criterion that women have phone information available in their record carries some risk of selection bias and may, in particular, exclude the poorest women. Women such as those hiding contraceptive use from their partner may also be more likely to decline being contacted for the study. As a result, the experiences of some women who may be likely to experience particular challenges accessing removal services may be missed or under-represented.

The selection of providers for this study is mainly purposive and not intended to support statistical generalizability. A possibility of recall bias also exists whereby women and providers may report inaccurately based on their memory of past events. Despite these limitations, we believe that the data will provide valuable insights to improve removal services.