

# An Evaluation of Contraceptive Methods After Implementation of a Novel LARC Program in a Residency Primary Care Clinic

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## ABSTRACT

**BACKGROUND AND OBJECTIVE:** Internal medicine (IM) residency programs have inadequate education and training around contraception, creating and perpetuating a potential barrier for patients. Contraceptive access is a critical part of primary care, yet few IM residency programs offer long-acting reversible contraception (LARC) in their clinic. To address the LARC needs of our patients and education needs of our residents, one attending (MS) created a procedure clinic and provided LARC in our residency clinic in 2015. In this initial study, we sought to determine the use of contraceptive methods among reproductive age women at our residency clinic two years after offering LARC. This data will shape future care provision and resident education.

**STUDY DESIGN AND METHODS:** Data were extracted from 1,182 female patients ages 20–39 years attributed to the Rhode Island Hospital Center for Primary Care (CPC) between February 2017 to August 2018. Of the total, 260 patients were excluded because they had not been seen in the clinic within the preceding 12 months or had left the practice. Descriptive and bivariate methods were used to calculate the proportion of women using any contraception and long-acting reversible contraception (LARC) and to test for associations with demographic characteristics.

**PRIMARY RESULTS:** Fifty-five percent used any contraception and 19% used LARC. LARC use was higher among women ages 20–29 when compared to women 30–39. Demographic characteristics other than age were not associated with contraceptive use.

**PRINCIPAL CONCLUSIONS:** In this clinic, LARC usage exceeds the national average (19.0% v 10.3%). Residency training is ideal for learning skills around this aspect of medical care, providing the ability to ensure appropriate oversight and supervision. This initial study suggests almost one fifth (18%) of patients who utilize LARC find access at an IM residency primary care clinic acceptable. Internal medicine primary care clinics can address the nonsurgical contraceptive needs of their patients by providing access to LARC. To achieve this goal, internal medicine residents should receive training in and exposure to LARC provision.

**KEYWORDS:** internal medicine residency clinic, medical education, contraception, long-acting reversible contraception (LARC), women's health

## INTRODUCTION

Contraceptive counseling and provision is uncommon in the internal medicine primary care setting, even when prescribing teratogenic medications.<sup>1,2</sup> Contraceptive access is a critical part of primary care yet many internal medicine residency programs have inadequate education and training opportunities around contraception in general and LARC in particular.<sup>3</sup> Literature is scarce regarding internal medicine training on and the provision of LARC by practicing internists. Most internal medicine program directors believe there is inadequate training around contraception.<sup>3</sup> This study shows the early impact of one faculty (MS) member's creation of a procedure clinic which includes LARC (IUD and implant). In this study, we sought to determine the use of contraceptive methods among reproductive age women at our clinic after 2 years of LARC implementation.

## METHODS

### Study design and setting

The Center for Primary Care (CPC) is the largest academic primary care practice affiliated with the Brown University Internal Medicine Residency Program in Providence, RI. Our patient population is socioeconomically, racially, ethnically and linguistically diverse. The CPC is the primary care practice for 7 faculty, 3 nurse practitioners, and 88 residents, supervised by a total of 28 attendings, many of whom have expertise in women's health. During the study period, two IM faculty supervised LARC procedures. Gynecologists do not practice on site. Our procedure clinic began with one faculty member doing one half day of procedure clinic a week. During the study period, our procedure clinic occurred one half day per week. Since September 2018, it has expanded to twice weekly sessions (four hour half-day blocks) plus an additional women's health clinical session weekly where LARC procedures can also be scheduled. Each session has an average of two residents seeing patients under attending supervision. Typically, five to six patients

per session are seen and there is a mix of gynecologic and musculoskeletal procedures done. In each session, the number of gynecological procedures ranges from zero to three. Additional resident education on contraception occurs for all residents in a 20-minute pre-clinic conference. Primary care track residents have an additional three hours of didactics dedicated to reproductive health (contraception, options counseling and medication abortion).

### Patient selection

Data were abstracted from all female patients (n=1182), aged 20-39 years, attributed to the CPC between February 2017 to August 2018. Of the total, 260 patients were excluded because they had not been seen in the clinic within the preceding 12 months or left the practice, leaving 922 patients to be analyzed.

### Defining prescription contraception

Prescription contraception is birth control that requires an interface with a healthcare provider and includes LARC, oral contraceptives pills, hormonal ring and patch.

### Data collection, study procedures, and statistical analysis

A REDCap (Research Electronic Data Capture) database was created to identify the 922 eligible women, 20–39 years of age. Manual chart review was performed. Contraceptive method, location of contraceptive care and pregnancy desire were extracted.

The analysis was conducted in SAS<sup>®</sup> software, version 9.4 (SAS Institute Inc.). Chi-square and Fisher exact were performed for descriptive and bivariate analysis to report contraceptive use and any associations with demographic characteristics.

### Ethical approval

This study was reviewed and approved by the institutional review board (IRB) at Rhode Island Hospital, Providence, Rhode Island.

## RESULTS

**Table 1** shows baseline characteristics and contraceptive use of our study sample. Overall, 54% of our sample used prescription contraceptive method, and of those using contraception 35% used LARC (n=175). Among those using LARC, 61.7% had an IUD, and the remaining had a contraceptive implant. Eighteen percent of LARC users obtained LARC in our clinic (n=33). Of the total, 20 received an IUD and 13 received a contraceptive implant. Among prescription contraception users, LARC was used by 65% of our sample ages 20 to 29 and 35% of our sample ages 30–39 (p-value <0.0001). Among LARC users, usage of IUD was higher (44, 72.1%) among women 30–39 years old using LARC compared to those aged 20-29 years old using LARC (64, 56.1%),

**Table 1.** Baseline Characteristics of Analytical Study Sample

	Full sample size (n=922)
Age, mean (SD)	29.6 (5.6)
Age, no. (%)	
20–29 years old	459 (49.8)
30–39 years old	463 (50.2)
Preferred language, no. (%)	
English	621 (67.4)
Spanish	185 (20.1)
Other	116 (12.6)
Race	
Black or African American	233 (26.1)
White or Caucasian	284 (31.8)
Other/American Indian or Alaska Native/Asian/ Native Hawaiian or Other Pacific Islander	377 (42.2)
Hispanic	398 (44.5)
Using any contraceptive methods <sup>b</sup>	
Yes	500 (54.2)
No	218 (23.6)
Unknown	121 (13.1)
Seeking pregnancy/pregnant	83 (9.0)
Contraceptive method	
LARC	175 (19.0)
Non-LARC	325 (35.2)
Unknown/seeking pregnancy/pregnant	422 (45.8)
Location of contraceptive care, no. (%)	
Receiving prescription contraception through our clinic	118 (12.8)
Receiving prescription contraception through another site	184 (20.0)
Not receiving prescription contraception <sup>a</sup>	392 (42.5)
Unknown	228 (24.7)

Notes: a - contraception requiring an interface with healthcare provider;

b – excluding, Pregnant or Seeking pregnancy/Pregnant.

Abbreviations: LARC – long-acting reversible contraception; SD – standard deviation

p-value=0.0381. Demographic characteristics other than age were not associated with contraceptive use. LARC use was not associated with preferred language (English/Spanish) or race/ethnicity.

## DISCUSSION

Comprehensive contraceptive access allows women agency over their reproductive health and can decrease rates of unintended pregnancy. In 2018, nearly 35% of pregnancies in Rhode Island amongst women aged 20–39 were unintended.<sup>4</sup> Our rates of LARC usage, 19%, exceed the national average in those aged 20 to 29 (13.7%) and those aged 30 to

39 (12.7%).<sup>5</sup> Given that 1 in 5 women who accessed LARC did so at our clinic, we believe that internal medicine residency clinics can be successful in making LARC available and onsite for a racially and ethnically diverse group of women. Offering LARC in IM residency clinics will allow patients increased access to insertion when contraception is needed and removal when pregnancy may be desired or contraception is now longer needed or desired. Internal medicine residents are capable of achieving competence in LARC procedures. Other IM training programs should be able to implement LARC with an initial single provider who is capable of performing and educating around these procedures.

### LIMITATIONS

Because 13% of patients' contraceptive choice is not reported in our medical record, we identified an opportunity for improvement, such as ensuring follow-up visits and enhancing use of problem-list documentation for contraceptive choice. Our study population is a subset of our clinic population who are often relatively healthy and young and thus seen less often than other patients in an IM primary care clinic, making it more important to ask about contraception at every visit.

The data is from 2017–18 and we have not collected more recent data. We have since expanded access to LARC considerably at the clinic, therefore would expect these numbers to have increased. We will examine this in a future study.

Our single site study may not be generalizable. Chart review may overestimate prescription contraceptive use because documentation of any prescription during the study period was counted as use. Finally, we limited our study population to ages 20–39 years; the more traditional age limit of 18–45 includes women ages 40–45 who may be less likely to use a contraceptive method, thus overestimating contraceptive use as compared to the national data.

### CONCLUSION

In an internal medicine residency clinic that increased education and training around contraception including LARC, a majority of female patients ages 20–39 used contraception, and 35% of those who used contraception used LARC. Our study demonstrates that internal medicine primary care clinics are well positioned to address the nonsurgical contraceptive needs of their patients, increasing access to these important services.

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