

# Long-Acting Reversible Contraceptive Early Discontinuation Rates and Risk Factors: A Retrospective Study at RUHS Community Health Centers

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## Introduction

Long-acting reversible contraceptives (LARCs) are quickly becoming more highly utilized in the county system as more programs are put in place to cover the cost of their placement. While cost was previously one of the biggest barriers to LARC use, with programs from the California Department of Healthcare Services such as Family PACT, they are more accessible than ever. As more primary care physicians are trained in LARC administration and maintenance, their use has seen a dramatic rise in the United States particularly over the last two decades, with approximately 8.5% of women between the ages of 15 and 45 using LARCs as their preferred form of contraception. However, there remains a high rate of discontinuation of LARCs prior to their FDA-approved termination date. Various studies have been done in different healthcare systems on early LARC discontinuation rates, such as the one by Szadler et al. looking at the incidence of early discontinuation in adolescents in an urban setting. They found a 21.9% discontinuation rate within the first year, with prior STD diagnosis shown to be one of the biggest risk factors for discontinuation. The factors contributing to early discontinuation in our particular system are varied, with limited studies looking at risk factors for discontinuation in our patient demographic. We are seeking to analyze discontinuation rates and identify associated risk factors for early discontinuation, with a particular focus on age. By doing this, we hope to identify patients who are at high risk of early discontinuation and provide appropriate counseling to both reduce this risk and offer safe and effective alternatives using an individualized approach. A secondary goal would be to mitigate the costs of placement and early discontinuation to the healthcare system.

## Methods

The setting for this study is Riverside county, particularly the ten federally qualified health centers of the Riverside University Health System (RUHS) that provide care to a primarily underserved patient population. A retrospective cohort study was done at the ten RUHS community health centers through the review of data obtained from electronic medical records. The study looked at LARC insertions and removals occurring in a one-year period between January 2018 to December 2018. The LARC methods include the progestin intrauterine device such as Mirena or Skyla, the copper intrauterine device such as ParaGard and the subdermal implant such as Nexplanon. The inclusion criteria was women aged 15 to 45 who have had either of the above-mentioned procedures. Indication for insertion was contraception. Exclusion criteria included pregnancy, clotting disorders, and history of gynecological disease or surgery. Charts were identified by inquiring billing and procedural codes. Data was first categorized by age - patients 30 years or older, and patients under 30. This data was then further categorized into those who retained the placed LARC and those who had an early removal prior to the FDA-approved termination date. The latter were analyzed to determine the contributory factors to early discontinuation.

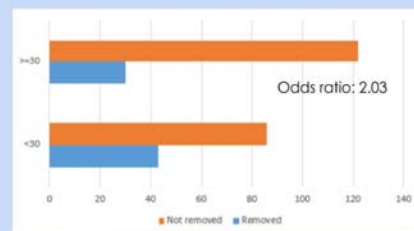
## Results

287 patient charts were reviewed of which 6 were discounted due to exclusion criteria. Of the 281 eligible patients who had LARCs placed in the time period studied, 73 patients (25.98%) returned within the first year to have them removed, with 208 (74.02%) keeping the LARC. Of these 73 patients, 43 (58.9%) were under the age of 30. The two most common indications for early discontinuation in the under 30 age group were irregular bleeding (37.25%) and desire to conceive (23.53%). Other factors contributing to early discontinuation in this age group included pelvic pain, mood swings, acne, weight gain and dyspareunia. Among the age group of 30 and above, the two most common indications for early discontinuation were irregular bleeding (22.86%) and pelvic pain (14.29%), with other contributing factors including desire to conceive, cessation of sexual activity, and weight gain. Statistical analysis revealed an odds ratio of 2.03 with women who had early discontinuation twice as likely to be under 30 years old.

**Table 1: Reasons for early LARC discontinuation among age groups**

Reasons	<30		≥30	
Irregular bleeding	19	37.25%	8	22.86%
Desire to conceive	12	23.53%	4	11.43%
Pelvic Pain	8	15.69%	5	14.29%
Vaginal Discharge	4	7.84%	0	0%
Acne	3	5.88%	1	2.86%
Unspecified	1	1.96%	3	8.57%
Mood Swings	1	1.96%	0	0%
No longer sexually active	1	1.96%	3	8.57%
Weight Gain	1	1.96%	1	2.86%
Anxiety	1	1.96%	0	0%
Vasectomy	0	0%	2	5.71%
Arm Pain	0	0%	2	5.71%
Unsuccessful	0	0%	3	8.57%
Dyspareunia	0	0%	1	2.86%
Headaches	0	0%	1	2.86%
Hair Loss	0	0%	1	2.86%
Total	51	100%	35	100%

**Figure 1: LARC discontinuation rate within 1 year**



## Conclusion

The results supported our initial hypothesis that age is an important determining factor in early discontinuation of LARCs, with over half of early removals seen in patients under 30 years old. Contributing factors to early discontinuation were varied, with irregular bleeding being the most common factor among both age groups. While there were limitations to this study, such as small sample size and possibility that LARCs were removed at outside facilities, as well as variations in detail of provider documentation allowing us to understand reasons for discontinuation, the results provide us with valuable information with which to counsel patients seeking long term contraception. An individualized approach to counseling can help to avoid unnecessary and potentially costly medical procedures, as well as mitigate undesirable side effects of certain interventions. These findings also open the way for further investigation with regards to preferability of particular LARC methods among age groups.

## References

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