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Original Research

Contraceptive Method Switching and Long-Acting Reversible Contraception Removal in U.S. Safety Net Clinics, 2016–2021

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OBJECTIVE: To describe patterns of contraceptive method switching and long-acting reversible contraception (LARC) removal in a large network of community health centers.

METHODS: We conducted a retrospective cohort study using individual-level electronic health record data from 489 clinics in 20 states from 2016 to 2021. We used logistic regression models, including individual-, clinic-, and state-level covariates, to calculate adjusted odds ratios and predicted probabilities of any observed contraceptive method switching and LARC removal among those with baseline incident LARC, both over 4-year time periods.

RESULTS: Among 151,786 patients with 513,753 contraceptive encounters, 22.1% switched to another method at least once over the 4-year observation period, and switching patterns were varied. In patients with baseline LARC, the adjusted predicted probability of switching was 19.0% (95% CI 18.0–20.0%) compared with patients with baseline moderately effective methods (16.2%, 95% CI 15.1–17.3%). The adjusted predicted probability of switching was highest among the youngest group (28.6%, 95% CI 25.8–31.6% in patients aged 12–14 years) and decreased in a dose–response relationship by age to 8.4% (95% CI 7.4–9.4%) among patients aged 45–49 years. Latina and Black race and ethnicity, public or no insurance, and baseline Title X clinic status were all associated with higher odds of switching at least once. Among baseline LARC users, 19.4% had a removal (to switch or discontinue) within 1 year and 30.1% within 4 years; 97.6% of clinics that provided LARC also had evidence of a removal.

CONCLUSION: Community health centers provide access to method switching and LARC removal. Contraceptive switching and LARC removal are common, and clinicians should normalize switching and LARC removal among patients.

(Obstet Gynecol 2023;142:669–78)

DOI: 10.1097/AOG.0000000000005277

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Presented at the Population Association of America's Annual Meeting, April 12–15, 2023, New Orleans, Louisiana.

This study was supported by a Merck/Organon investigator-initiated grant (IIS No. 60206), Dr. Darney, principal investigator. The funder had no role in the conception, analysis, or interpretation of data. Partial support from the Office of Population Affairs (1 FPRPA006071-01-00; Dr. Darney, principal investigator) and the Agency for Healthcare Research and Quality (AHRQ) (1R01HS025155-01; Dr. Cottrell, principal investigator).

This work was conducted with the ADVANCE (Accelerating Data Value Across a National Community Health Center Network) CRN (Clinical Research Network). ADVANCE is a CRN in PCORnet®, the National Patient Centered Outcomes Research Network. ADVANCE is led by OCHIN in partnership with Health Choice Network, Fenway Health, and Oregon Health & Science University. ADVANCE's participation in PCORnet® is funded through the Patient-Centered Outcomes Research Institute, contract RI-OCHIN-01-MC.

Each author has confirmed compliance with the journal's requirements for authorship.

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Financial Disclosure

Blair G. Darney's institution receives research support from Merck/Organon. Dr. Darney serves on the Board of Directors of the Society of Family Planning. Kate Coleman-Minahan was a consultant for The Lawyering Project. The other authors did not report any potential conflicts of interest.

ISSN: 0029-7844/23

Equitable access to contraception includes the ability to remove, discontinue, or switch methods without barriers.[1,2] People may discontinue or switch methods because of method dissatisfaction, a preference for another method or for no method, desired

pregnancy, or other reasons, including inconvenience of use, access, and availability.[3–6] Despite recent increases in long-acting reversible contraception (LARC) use, barriers persist to accessing LARC removal services (eg, inadequate insurance coverage, cost, clinic policy, or clinician bias), which usually require a clinic visit.[7–10] Research on contraceptive switching and *discontinuation* (usually defined as stopping a method without evidence of another method within 30 days) is generally limited to 6 or 12 months after initiation[4,11–14] or is conducted among samples with no-cost initiation and removal as part of a study protocol, as opposed to real-world settings.[4,13,14] We have limited evidence about method switching, specifically LARC removal, over longer periods and among large diverse settings.[7,9,15,16]

Community health centers, which include Federally Qualified Health Centers and Federally Qualified Health Center look-alikes,[17] are an important access point for contraceptive services for people with low incomes[18,19] regardless of insurance status or ability to pay.[18,20] Furthermore, some community health centers participate in the federal Title X program, which provides greater access to the most effective reversible methods than community health centers without Title X funding.[20] However, less is known about real-world patterns of method switching and access to LARC removal in the population served by community health centers; this study fills this gap with a large, diverse sample of patients seeking contraceptive services in community health centers. The purpose of this study is to describe patterns of method switching and LARC removal among patients in a large network of community health centers over 4-year periods. We further identify individual- and clinic-level factors associated with switching and LARC removal.

METHODS

We used individual-level electronic health record (EHR) data to conduct a historical cohort study using the ADVANCE (Accelerating Data Value Across a National Community Health Center Network) clinical research network. ADVANCE, a member of Patient-Centered Outcomes Research Network, is a multicenter collaborative lead by OCHIN that includes outpatient EHR data integrated and standardized into a common data model.[21] ADVANCE data include information from more than 8 million patients across 32 states and are demographically similar to the national profile of patients in community health centers.[22] Appendix 1, available online at http://links.lww.com/AOG/D252, provides details on ADVANCE data partners. ADVANCE EHRs have been validated in numerous studies.[23–25] This study was reviewed and approved by the Western IRB.

We included clinics that were continuously open between January 1, 2016, and December 31, 2021. We first identified female patients aged 12–49 years with any ambulatory health care use in the calendar years 2016, 2017, or 2018 (Fig. 1). We included individuals coded as female in their EHRs; we were unable to comprehensively assess gender identity, and we recognize that individuals who do not identify as female seek contraceptive care, including transgender men and nonbinary individuals. We excluded 29,334 patients with infecundity (female infertility, natural menopause, hysterectomy, or oophorectomy) and 19,629 with previous sterilization (Fig. 1). We created three cohorts of patients with one or more contraceptive encounters (long-acting method prescription or placement, short-acting method prescription) in 2016, 2017, or 2018. Each cohort was followed up for a 4-year study period (2016–2019, 2017–2020, or 2018–2021); having three baseline periods allowed us to include more patients in our study. Cohorts were mutually exclusive and pooled for all analyses. We next refined the analytic sample to patients who had seven or fewer contraceptive method switching events observed during their 4-year study period (372 excluded because of more than seven switching events). The final analytic sample included 151,786 patients with 513,753 contraceptive encounters from 489 clinics in 20 states (Appendix 1, http://links.lww.com/AOG/D252, includes a list of states).

Our outcomes were any observed contraceptive method switching and LARC removal among those with incident (newly placed at baseline) LARC. We defined *contraceptive switching* as any observed change in contraceptive method type (eg, pill to patch, intrauterine device [IUD] to pill) during the study time period. Any observed change in a patient's contraceptive method type was categorized as a switching event. A change within a method type (eg, change in formulation of oral contraceptive) was not counted as a switch event. We are not able to assess barrier methods or spermicide because they are not well captured in our data. We also categorized methods as most (LARC) or moderately (short-acting hormonal) effective.[26] We defined *LARC removal* as any observed LARC removal during the study time period for patients with incident LARC; removal thus includes switching to another method, having LARC replacements, and discontinuing. Removal of LARC was assessed with International Classification of Diseases,

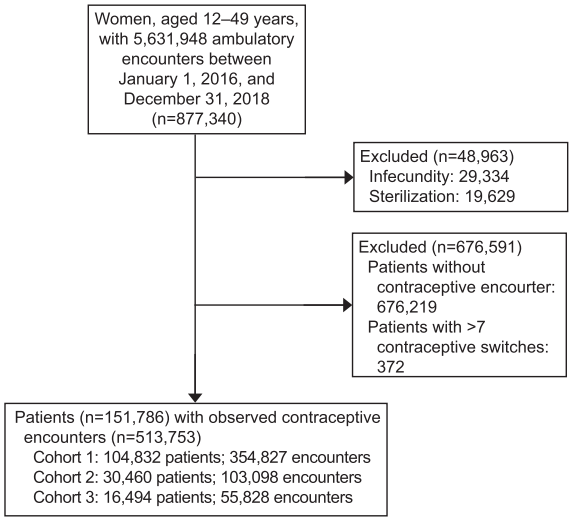

Fig. 1. Sample flow diagram. U.S. community health centers, 2016–2021.

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Tenth Revision code Z30.432 (encounter for removal of intrauterine contraceptive device) or Current Procedural Terminology code 11982 (removal, nonbiodegradable drug delivery implant) or 58301 (encounter for removal of intrauterine device). Removals of LARC were restricted to those that occurred temporally after the initial LARC method.

We assessed patient demographic characteristics at the first contraceptive visit, following our previous work.[18] We included age (12–14 years at first study visit, 15–17 years, 18–19 years, then 5-year age bands to 49 years) and race and ethnicity because people of color experience poorer access to and quality of contraceptive care than White people (Latina, non-Latina White, non-Latina Black, non-Latina other [including Asian, American Indian/Alaska Native], non-Latina missing race, additional details on race and ethnicity are given in Appendix 1, http://links.lww.com/AOG/D252). We included patient income as a proportion of the federal poverty level category (less than 100% of the federal poverty level, 101–150%, 151–200%, 200% or higher, missing income), payer or insurance (private, public, or uninsured; additional details on insurance in Appendix 1, http://links.lww.com/AOG/D252), and health care professional (women's health specialist or not). If missing data were encountered, we then used the next most recent contraceptive visit with known data. Data were not missing at random for missing patient race and ethnicity (4.7%) (Appendix 2, available online at http://links.lww.com/AOG/D252); we therefore chose to include missingness as its own level in categorical variables and did not perform multiple imputation.

We identified clinic Title X funding status, which is known to be associated with LARC provision.[20] We classified clinics as rural using 2010 Rural-Urban Commuting Area codes; small towns and lower were categorized as rural.[27] We also included state-level indicators: presence of a state family planning program (1115 or state plan amendment/family planning waiver) status,[28] and Medicaid expansion status (as of January 1, 2016).[29]

We first described our sample characteristics by whether a patient had switched methods during the time period, stratified by method type used at baseline (most or moderately effective). Next, we described the proportion of the sample with at least one method switch by baseline method (most or moderately effective). Then we described observed LARC removal at the clinic level and then at the patient level, by type of LARC (IUD or implant), over the 4-year observation period and within 1 year. Next, to capture the combinations of contraceptive use patterns among those with at least one switching event, we visually described detailed patterns of method switching (ie, initial method, next method switched to, and any subsequent method switching within the study period) and calculated time to switching. We restricted this analysis to the first three switches among the 22.1% of the sample who switched at least once. Finally, we developed two multilevel generalized estimating equation logistic regression models with an exchangeable working correlation structure for our dichotomous outcomes: any switching (among the full sample of baseline contraceptive users) and LARC removal (among those with baseline LARC). For the multilevel models, patients are nested within clinics; thus, we included a random intercept for the clinic in both models. We controlled for patient-, clinic-, and state-level factors as fixed effects as described above. We included a random effect for clinic in both models. For regressions, we collapsed the income levels attributable to sample size as follows: 150% of the federal poverty level or less, 151% or greater, and missing. We calculated predicted probabilities to improve the interpretability of our results.[30] We conducted a sensitivity analysis of our switching outcome stratified by baseline method type (most or moderately effective) to qualitatively evaluate any differences in covariate patterns. We conducted all analyses in SAS 8.3; we prepared figures in PowerPoint or R 4.1.0 using the ggsankey package.

RESULTS

Overall, 22.1% (33,502/151,786) of patients in our sample of contraceptive users had at least one contraceptive method switching event (Table 1). Compared with patients who had no observed switching, a larger proportion of patients who switched were aged 15–17 years (15.6% of those who switched vs 9.2% of those with no observed switching). Similarly, a larger proportion of patients were Latina (44.0% among those who switched vs 38.2% of those with no observed switching), had public insurance (66.0% vs 58.9% of those with no observed switching), visited a Title X clinic (35.2% vs 28.0% of those with no observed switching), or were in a Medicaid expansion state at their first contraceptive visit (78.4% vs 68.3% of those with no observed switching). A smaller proportion of patients with evidence of contraceptive switching had private insurance (14.3% vs 19.3% of those with no observed switching).

Among patients with a most effective method at baseline (LARC; IUD or implant), 21.6% were observed to switch at least once compared with

Table 1. Patient-Level Demographics of 151,786 Patients With Contraceptive Use at Baseline in U.S. Community Health Centers, 2016–2021

Characteristic	All Patients	No Observed Switching	Switching
Total	151,786 (–)	118,284 (77.9)	33,502 (22.1)
1st method			
LARC	32,675 (21.5)	25,631 (78.4)*	7,044 (21.6)*
Moderately effective	119,111 (78.5)	92,653 (77.8)*	26,458 (22.2)*
Age at 1st method (y)			
12–14	2,046 (1.3)	1,362 (1.2)	684 (2.0)
15–17	16,068 (10.6)	10,837 (9.2)	5,231 (15.6)
18–19	14,538 (9.6)	10,881 (9.2)	3,657 (10.9)
20–24	31,636 (20.8)	24,342 (20.6)	7,294 (21.8)
25–29	31,622 (20.8)	24,898 (21.0)	6,724 (20.1)
30–34	24,459 (16.1)	19,531 (16.5)	4,928 (14.7)
35–39	16,527 (10.9)	13,533 (11.4)	2,994 (8.9)
40–44	9,666 (6.4)	8,212 (6.9)	1,454 (4.3)
45–49	5,224 (3.4)	4,688 (4.0)	536 (1.6)
Race and ethnicity (most recent or known)			
Black, non-Latina	28,670 (18.9)	22,711 (19.2)	5,959 (17.8)
Latina	59,936 (39.5)	45,203 (38.2)	14,733 (44.0)
White, non-Latina	46,132 (30.4)	37,043 (31.3)	9,089 (27.1)
None of the above, non-Latina	9,893 (6.5)	7,797 (6.6)	2,096 (6.3)
Missing	7,155 (4.7)	5,530 (4.7)	1,625 (4.9)
Income as percentage of FPL (most recent known income)			
Less than 100	106,581 (70.2)	82,755 (70.0)	23,826 (71.1)
101–150	20,642 (13.6)	15,944 (13.5)	4,698 (14.0)
151–200	8,746 (5.8)	6,829 (5.8)	1,917 (5.7)
200 or higher	12,608 (8.3)	10,284 (8.7)	2,324 (6.9)
Missing	3,209 (2.1)	2,472 (2.1)	737 (2.2)
At 1st method			
Payer			
Private	27,660 (18.2)	22,868 (19.3)	4,792 (14.3)
Public	91,806 (60.5)	69,682 (58.9)	22,124 (66.0)
Uninsured	32,320 (21.3)	25,734 (21.8)	6,586 (19.7)
Women's health professional	47,436 (31.3)	37,210 (31.5)	10,226 (30.5)
Title X clinic	44,963 (29.6)	33,164 (28.0)	11,799 (35.2)
Rural clinic†	5,097 (3.4)	4,006 (3.4)	1,091 (3.3)
State family planning program‡	120,606 (79.5)	94,803 (80.1)	25,803 (77.0)
ACA§	107,116 (70.6)	80,836 (68.3)	26,280 (78.4)

LARC, long-acting reversible contraceptive; FPL, federal poverty level; ACA, Affordable Care Act.
Data are n (%)
* Percentage is of the total patients with noted baseline contraceptive method.
† All tests of comparison (no observed switching vs switching) were statistically significant ($P \leq .01$) except for the rural clinic covariate ($P = .24$).
‡ Includes both the state plan amendment and the 1115 waiver.
§ Statewide expansion of Medicaid under the ACA.

22.2% of patients with moderately effective contraception at baseline (Table 2). Fewer than one-fifth (16.6%) of baseline IUD users switched methods over the 4-year study period compared with more than one-quarter (27.1%) of patients with implants at baseline.

At the clinic level, of the 339 clinics with LARC placement, 97.6% (331) had evidence of providing LARC removal services during the full study time period (data not shown). At the individual level, 30.1% of those with LARC at baseline had evidence of removal (This is larger than the proportion with evidence of switching because it also includes discontinuation and replacement; Fig. 2). Over the study period, IUD removals as a proportion of all IUDs at baseline were more frequent than implant removals (35.8% IUD, 23.7% implant; 30.1% all LARC combined). The pattern was similar for removal within 1 year (26.3% IUD, 11.7% implant; 19.4% all LARC combined; Fig. 2).

We next visually described the pattern of contraceptive method switching among the 22.1% of patients (n=33,502) with at least one method switch during the 4-year follow-up period (Fig. 3). Nearly three-quarters of patients who switched had only one switch (71.8%, n=24,055); 21.1% (n=7,069) had two switches; and 7.1% (n=2,378) had three switches. We observed a dynamic pattern of contraceptive method switching. Of patients with LARC as their first contraceptive method and a contraceptive switching event (n=7,044), 2.7% (n=189) received sterilization, 12.7% (n=894) switched to a different LARC method, and 84.6% (n=5,961) chose a moderately effective method. Of patients who switched from another method to LARC in the first switching event (n=11,866), 33.8% (4,315 patients) switched from injectable, 51.4% (6,565 patients) from the pill, 4.6% (593 patients) from patch, and 3.2% (413 patients) from the ring. A minority of patients switched from a reversible method at baseline to sterilization. The median number of months to the first switch among those using LARC at baseline was 11 (interquartile range 4–23); median months to the first switch among those using moderately effective methods at baseline was 13 (interquartile range 4–20; data not shown).

In multivariable analyses of factors related to any method switching compared with not switching over the 4-year observation period, baseline LARC; younger age; Latina, Black, and other ethnicity; public or no insurance; and baseline Title X clinic status (Table 3) were associated with switching. Among patients with baseline LARC, the adjusted predicted probability of switching was 19.0% (95% CI 18.0–20.0%); for patients without baseline LARC, the adjusted predicted probability of switching was 16.2% (95% CI 15.1–17.3%). The adjusted predicted probability of switching was highest among the youngest group: 28.6% (95% CI 25.8–31.6%) in patients aged 12–14 years. The adjusted probability of switching was lower with increasing age, with the lowest probability (8.4%, 95% CI 7.4–9.4%) among patients aged 45–49 years. Latina patients had the greatest adjusted predicted probability of switching at 21.8% (95% CI 20.7–23.0%), and White non-Latina patients had the lowest (15.3%, 95% CI 14.4–16.3%). Patients with incomes 150% of the federal poverty level or less had a greater adjusted probability of switching at 18.5% (95% CI 17.5–19.5%) compared with patients with incomes greater than 151% of the federal poverty level. In sensitivity analyses stratified by moderately or most effective baseline method (instead of including baseline method as a covariate), we observed qualitatively similar covariate patterns (Appendix 3, available online at http://links.lww.com/AOG/D252).

In the subset of patients with baseline LARC (21.5% of sample, n=32,675), there was a dose-response relationship between age and LARC removal, with the youngest patients having the lowest adjusted probability (12–14 years 17.6%, 95% CI 12.7–23.9%) and the oldest patients having the highest adjusted probability (37.4%, 95% CI 34.0–41.0%) of

Table 2. Contraceptive Method Switching Over a 4-Year Period by Baseline Method Type (Long-Acting Reversible Contraception or Moderately Effective), U.S. Community Health Centers, 2016-2021

	All Patients	No Observed Switching	Switching
Total	151,786 (100)	118,284 (77.9)	33,502 (22.1)
1st method			
Moderately effective	119,111 (78.5)	92,653 (77.8)	26,458 (22.2)
LARC	32,675 (21.5)	25,631 (78.4)	7,044 (21.6)
Those with LARC as 1st method			
IUD as 1st method	17,177 (11.3)	14,330 (82.4)	2,847 (16.6)
Implant as 1st method	15,498 (10.2)	11,301 (72.9)	4,197 (27.1)

LARC, long-acting reversible contraceptive; IUD, intrauterine device.

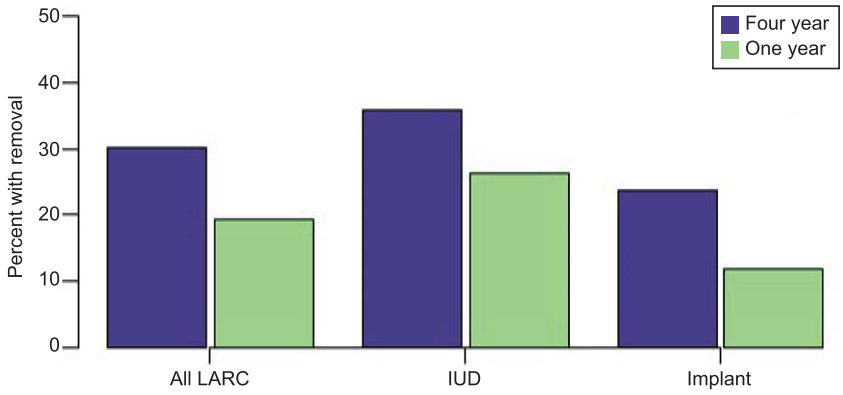

Fig. 2. Long-acting reversible contraception (LARC) removal overall and by LARC method in a 4-year observation period and within 1 year; U.S. community health centers, 2016–2021. IUD, intrauterine device.

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LARC removal (Table 3). Latina and Black race and ethnicity were also associated with greater adjusted predicted probability of removal (29.0%, 95% CI 27.2–30.9%; 28.7%, 95% CI 26.3–31.3%, respectively). Receiving care at a clinic in a Medicaid expansion state under the Affordable Care Act was associated with an increased predicted probability of removal (30.6%, 95% CI 28.9–32.4%) compared with receiving care in no-expansion states.

DISCUSSION

We show, in a large and diverse sample receiving contraceptive services at community health centers across the United States, that 22% switched to another method at some point over a 4-year observation period. Implant users were more likely to switch than IUD users or users of moderately effective methods, and switching patterns were varied. In patients with baseline LARC, the adjusted probability of switching was 19.0% compared with 16.2% among patients with baseline moderately effective methods. The adjusted probability of switching was highest among the youngest group and decreased with age. We also found that 19.4% of baseline LARC users removed their IUD or implant within 1 year and 30.1% did so within 4 years. Among clinics that provided LARC services, 97.6% had evidence of offering removal services, that is, providing at least one removal.

Our large, diverse, real-world sample of patients served by community health centers builds on prior studies. Similar findings were seen in a sample that received no-cost contraception and reported that 12.4% switched methods at 6 months.[4] In a Texas postpartum sample, the discontinuation rate among patients who used short-acting hormonal contraception during the postpartum period ranged from 30% at 3 months to 80% at 18 months.[31] Another study showed that 12-month discontinuation rates were 19% among patients aged 14–19 years using no-cost LARC methods.[13] Consistent with some prior research,[14] our

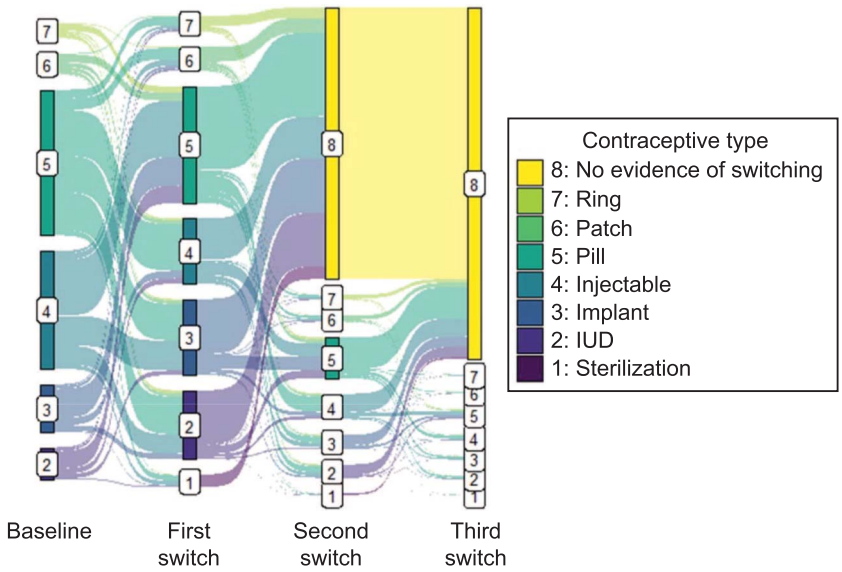

Fig. 3. Contraceptive switching patterns among patients with at least one observed contraceptive method switch at U.S. community health centers, 2016–2021 (n=33,502). IUD, intrauterine device.

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Table 3. Multivariable Models* Examining Any Method Switching or Long-Acting Reversible Contraception Removal in Patients With Baseline Long-Acting Reversible Contraception Over a 4-Year Period, U.S. Community Health Centers, 2016–2021

	Any Switching (n=151,786)		LARC Removal in Patients With Baseline LARC (n=32,675)	
	aOR (95% CI)	Predicted Probability	aOR (95% CI)	Predicted Probability
1st method				
Moderately effective	Ref	16.2 (15.1–17.3)	–	–
LARC	1.22 (1.14–1.31)	19.0 (18.0–20.0)	–	–
Age (y)				
12–14	1.77 (1.52–2.07)	28.6 (25.8–31.6)	0.55 (0.37–0.80)	17.6 (12.7–23.9)
15–17	1.68 (1.55–1.82)	27.5 (26.0–29.1)	0.67 (0.59–0.78)	20.8 (18.5–23.4)
18–19	1.19 (1.10–1.30)	21.2 (20.0–22.6)	0.72 (0.63–0.82)	21.9 (19.4–24.5)
20–24	1.10 (1.05–1.15)	19.9 (18.8–21.0)	0.90 (0.82–0.98)	25.9 (23.9–28.1)
25–29	Ref	18.4 (17.3–19.6)	Ref	28.1 (26.0–30.2)
30–34	0.91 (0.87–0.96)	17.1 (16.1–18.2)	1.07 (0.97–1.18)	29.5 (27.5–31.5)
35–39	0.78 (0.74–0.84)	15.0 (14.0–16.2)	1.14 (1.03–1.27)	30.9 (28.9–32.9)
40–44	0.62 (0.57–0.67)	12.3 (11.3–13.3)	1.29 (1.13–1.48)	33.5 (30.8–36.2)
45–49	0.40 (0.36–0.46)	8.4 (7.4–9.4)	1.53 (1.31–1.80)	37.4 (34.0–41.0)
Race and ethnicity				
Latina	1.55 (1.47–1.63)	21.8 (20.7–23.0)	1.18 (1.06–1.30)	29.0 (27.2–30.9)
White, non-Latina	Ref	15.3 (14.4–16.3)	Ref	25.8 (23.9–27.8)
Black, non-Latina	1.18 (1.11–1.26)	17.6 (16.5–18.7)	1.16 (1.02–1.32)	28.7 (26.3–31.3)
Other, non-Latina	1.09 (1.02–1.16)	16.4 (15.2–17.7)	1.00 (0.89–1.12)	25.8 (23.4–28.3)
Missing	1.28 (1.19–1.37)	18.7 (17.4–20.1)	0.92 (0.81–1.06)	24.3 (21.9–26.9)
Income (% of FPL)				
150 or lower	1.06 (1.01–1.11)	18.5 (17.5–19.5)	0.90 (0.84–0.98)	27.3 (25.7–28.9)
Greater than 151	Ref	17.7 (16.7–18.7)	Ref	29.3 (27.2–31.5)
Missing	1.06 (0.96–1.17)	18.5 (16.9–20.2)	1.02 (0.86–1.20)	29.6 (26.1–33.5)
Payer				
Private	Ref	15.6 (14.6–16.7)	Ref	27.8 (25.9–29.9)
Public	1.31 (1.24–1.37)	19.5 (18.5–20.5)	0.98 (0.90–1.06)	27.4 (25.7–29.1)
Uninsured	1.17 (1.08–1.27)	17.8 (16.7–19.0)	1.02 (0.92–1.13)	28.2 (26.0–30.6)
Health care professional				
Other	Ref	18.0 (17.0–19.0)	Ref	26.9 (25.0–28.9)
Women's health	1.09 (1.02–1.15)	19.2 (18.1–20.4)	1.08 (0.96–1.21)	28.4 (26.5–30.4)
Clinic Title X status				
Non–Title X	Ref	16.3 (15.4–17.2)	Ref	26.8 (25.1–28.6)
Title X	1.65 (1.43–1.90)	24.2 (21.9–26.7)	1.13 (0.95–1.34)	29.3 (26.2–32.6)
Clinic location				
Rural	Ref	18.3 (17.4–19.3)	Ref	27.6 (26.0–29.2)
Urban	1.09 (0.90–1.32)	19.7 (16.9–22.8)	1.14 (0.82–1.58)	30.2 (24.0–37.3)
State family planning program status†				
None	Ref	21.5 (18.3–25.1)	Ref	27.3 (23.9–31.0)
Participant	0.78 (0.62–0.98)	17.6 (16.6–18.7)	1.02 (0.84–1.25)	27.7 (26.0–29.5)
ACA participation‡				
Nonexpansion	Ref	12.3 (10.2–14.7)	Ref	19.6 (16.5–23.2)
Expansion	1.97 (1.54–2.52)	21.5 (20.4–22.8)	1.80 (1.44–2.27)	30.6 (28.9–32.4)

LARC, long-acting reversible contraceptive; aOR, adjusted odds ratio; Ref, referent; ACA, Affordable Care Act.
* Multivariable logistic regression model includes all variables displayed in the table.
† Includes both the state plan amendment and the 1115 waiver.
‡ Statewide expansion of Medicaid under the ACA.

study showed that implant users were more likely to switch than IUD users (27.1% vs 16.6%, respectively). Implant users are known to be, on average, younger than IUD users,[18] and this likely helps explain the higher adjusted probability of switching among LARC users, specifically implant users, compared with users of moderately effective methods in our sample.

Unlike prior research that found no difference in contraceptive switching by age,[4] we found that age

was inversely associated with switching (adjusted probability of switching was higher among younger ages) but positively associated with LARC removal (adjusted probability of removal was higher among older ages). It is possible that because side effects are one of the most common reasons for method switching,[4,31] younger people have had less time to find a method that they are satisfied with, whereas older patients may be discontinuing LARC and not starting a new method because they are more likely to desire pregnancy[32] or sterilization[33] than younger patients. Data suggest that contraceptive switching is expected among young people, and clinicians should normalize and support switching among their young patients in particular.

Differences in switching and discontinuation by race and ethnicity are important to identify because of the role of structural and interpersonal racism. People of color are more likely to feel pressure from clinicians to use specific methods,[16,34] and pressure is associated with greater contraceptive discontinuation.[35] In the current study, Latina and Black patients were more likely to switch methods and discontinue LARC than White patients. Previous work suggests that people of Latina and other ethnicities are more likely to discontinue but not switch a method than are White people,[4] whereas another population-based study found similar rates of satisfaction and continuation of LARC by race or ethnicity but lower rates of satisfaction and continuation of short-acting hormonal methods among Black and Latina patients than White patients.[36] Our data do not allow us to assess reasons for switching or removal, and most studies that assess reasons for removal or switching do not assess differences by race or ethnicity. Given that individuals of color, including immigrants, have reported poor-quality care, including non–patient-centered contraceptive counseling, clinician bias, and dismissiveness,[35,37,38] and more access barriers,[38–40] future research should identify reasons for contraceptive switching and discontinuation and the role of barriers, including racism and clinician bias, to quality care.

Strengths of our study include a large and diverse sample of community health center patients, objective real-world clinical data, ability to include people who are uninsured and missing from research relying on claims data, and ability to observe switching and removal over a 4-year period. We focus on switching patterns and LARC removal to center access to both changing methods when desired and removing IUDs and implants, which involve interaction with the health care system (There is emerging literature on IUD self-removal,[41,42] but LARC methods still largely require clinician involvement to both initiate and remove). Our results are not without limitations. Most important, reasons for switching or LARC removal are outside the scope of this study, and we do not know whether there are patients in the sample who were unable to switch methods or remove their LARC when desired. Second, we may have missed some removals if patients had their LARCs removed outside of the community health centers included in this study (eg, had it inserted at a study clinic but removed at a clinic not included in our study). Third, we have assessed removal, not discontinuation; thus, our results are not always easy to compare with literature that focuses on discontinuation. We felt that access to removal was an important outcome and wanted to avoid framing discontinuation as a negative outcome. Fourth, our study period includes the COVID-19 pandemic, which disrupted primary care services, including contraception, and may have affected access to switching or LARC removal. Fifth, we were unable to assess use of barrier methods and other methods that do not require interaction with a primary care physician; condom use, for example, may be an important part of switching dynamics and is not captured in our data. Finally, generalizability is limited outside community health centers in the sample, but this is a large sample, and community health centers have the advantage of high continuity of care.

This study adds to a body of evidence about the important role that community health centers play in providing access to contraceptive services,[18–20] including switching methods and LARC removal, in the United States. Contraceptive switching and LARC removal are common, and clinicians should normalize switching and LARC removal among patients.

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PEER REVIEW HISTORY

Received March 9, 2023. Received in revised form April 28, 2023. Accepted May 11, 2023. Peer reviews and author correspondence are available at http://links.lww.com/AOG/D253.