Effect of Staff Training and Cost Support on Provision of Long-Acting Reversible Contraception in Community Health Centers

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Abstract

Objective: To compare the proportion of women receiving same-day long-acting reversible contraception (LARC) between two different models of contraceptive provision adapted from the Contraceptive CHOICE Project.

Study Design: We used a controlled time-trend study design to compare 502 women receiving structured contraceptive counseling in addition to usual care ("Enhanced Care") to 506 women receiving counseling plus healthcare provider education and cost support for LARC ("Complete CHOICE") at three federally qualified health centers. We provided funds to health centers to ensure an "on-the-shelf" supply and no-cost LARC for uninsured women. We recorded the contraceptive method chosen after contraceptive counseling and the healthcare provider appointment as well as the contraceptive method received that day. Among women choosing LARC, we calculated proportions and performed Poisson regression with robust error variance to estimate relative risks for same-day insertion.

Results: Participant demographics reflected the health center populations; 69% were black, 66% had a high school diploma or less, 57% were publicly insured, and 75% reported household income less than 101% federal poverty line. There were 153 (30.5%) women in "Enhanced Care" and 273 (54.0%) in "Complete CHOICE" who chose LARC ($p<0.01$). Among women who chose LARC (n=426), those in "Complete CHOICE" were more likely to receive a same-day insertion, 53.8% vs. 13.7% (RR_{adj} 4.73; 95%CI 3.20-6.98) compared to "Enhanced Care."

Conclusions: A contraceptive care model that included healthcare provider education and cost support for LARC in addition to structured contraceptive counseling resulted in higher rates of same-day LARC insertion compared to contraceptive counseling and usual care alone.

Implications

Contraceptive care provision which includes contraceptive counseling, healthcare provider education, and "on-the-shelf", long-acting reversible contraception facilitate same-day initiation of these methods. Interventions that focus solely on contraceptive counseling do not address other structural barriers to same-day contraceptive provision of all methods including cost and provider practice.

Keywords: Contraceptive counseling; long-acting reversible contraception; intrauterine device; contraceptive implant; same-day insertion

Introduction

More than 40% of unintended pregnancies are the result of inconsistent contraceptive use.(1) Oral contraceptive pills (OCPs) and condoms require high levels of adherence from users, leading to typical-use failure rates of 7 and 13%, respectively.(2) In contrast, long-acting reversible contraception (LARC), which includes intrauterine devices (IUDs) and implants require little user adherence and have typical-use failure rates of 1%.(2) Despite their known effectiveness, LARC is used less frequently than OCPs and condoms. While not all women will prefer LARC, barriers such as out-of-pocket cost, healthcare provider misconceptions, and requirements for multiple visits to initiate LARC may limit access for women who desire these methods. One study found that women with an out-of-pocket cost less than $50 were more than 11-times more likely to obtain an IUD than women required to pay $50 or more.(3) Several studies have shown that misconceptions among healthcare providers may incorrectly prevent some women, including adolescents, nulliparous women, and women with a history of sexually transmitted infections (STIs), from using IUDs.(4-6) Additional studies have identified requirements for patients to return for a second visit for placement of an IUD or implant as a barrier to these methods.(7, 8)

Findings from the Contraceptive CHOICE Project demonstrated that removal of contraceptive barriers increased uptake of LARC and reduced unintended pregnancy.(9, 10) While the CHOICE Project was successful in a research setting, we had not tested the model of care in a community setting. We conducted a subsequent longitudinal study implementing two models of care adapted from the CHOICE Project in federally qualified health centers (FQHC); "Enhanced Care" which provided the CHOICE Project structured contraceptive counseling in addition to usual contraceptive care and "Complete CHOICE*"* which provided contraceptive counseling plus healthcare provider education, in-clinic stocking of LARC, and no-cost LARC

for uninsured patients. Our primary objective was to compare 12-month unintended pregnancy rates between the two groups. The objective of this analysis was to compare the proportion of women receiving same-day insertion at enrollment among those desiring LARC between "Enhanced Care" and "Complete CHOICE."

Material & Methods

We conducted this study in collaboration with three Midwest federally-qualified health centers (FQHC) which serve a predominantly low-income, minority urban population. The health centers were located in two states without Medicaid expansion through the Affordable Care Act. We used a controlled time-trend design to compare two different models of contraceptive provision. Controlled time-trend analysis is a nonrandomized study design where outcomes are compared before and after a change occurs in the healthcare setting.(11) We selected this study design rather than a randomized controlled trial in discussion with participating health centers as none were willing to be randomized to structured contraceptive counseling plus usual care ("Enhanced Care"). We used the National Institutes of Health Director's Council of Public Representatives Community Engagement Plan as a framework to guide our partnership with the health centers.(12)

Participating sites included two health centers belonging to the same organization and one health center affiliated with a separate organization. The three sites saw approximately 4,000 unique reproductive-age women annually. Across the three health centers, there were 38 healthcare providers; 13 family medicine, 10 nurse practitioners, 6 obstetrician-gynecologists, five pediatricians, and four internists. Of these, 16 were trained to place IUDs and implants and three were trained to place implants only. All sites also provided obstetric care. Prior to study

initiation, all health centers provided refillable methods of contraception such as OCPs and depo-medroxyprogesterone acetate (DMPA). For uninsured patients, cost was determined using an income-based sliding fee scale. All health centers provided IUDs and implants, but few performed same-day insertion due to limited in-clinic inventory and health center practices such as requiring women to be on their menses or having results of testing for STIs prior to insertion. None of the three health care centers had a standardized approach to contraceptive counseling. The health centers did not keep detailed data about LARC use among their patient population. Therefore, we performed a cross-sectional survey of 241 randomly selected reproductive-aged female patients from the three sites, which found that 17.4% of respondents were currently using LARC.

In the first group, "Enhanced Care," women received the structured, patient-centered contraceptive counseling developed in the CHOICE Project (13) delivered by a trained health center staff member, in addition to usual contraceptive care. For the second group, "Complete CHOICE," we added health care provider training and cost support for LARC to the counseling. Cost support included upfront funds for health centers to purchase an "on-the-shelf" supply of LARC to ensure methods were available for same day placement. Funds were also available to provide no-cost LARC for uninsured patients. These additional components represented the change in the system for the controlled time-trend design.

We educated healthcare providers regarding evidence-based recommendations for contraception and potential barriers to same-day IUD and implant insertion. The principal investigator conducted five, 60-minute educational group sessions and two one-on-one sessions to reach 32 healthcare providers across the three health centers. All participating health centers had existing providers trained in IUD and implant provision. Educational sessions emphasized

the importance of patient autonomy and removing LARC on patient request. Health centers provided LARC removals using the health center's existing sliding scale.

Each health center identified an existing staff member to be the primary site contraceptive counselor and research assistant who was trained in the CHOICE Project contraceptive counseling and clinical research protocols by the Washington University research team. Additional staff members could be trained as desired by the health center. The CHOICE Project counseling model has previously been described in detail.(13) Briefly, this counseling uses an effectiveness-based framework for presenting the most common reversible contraceptive methods. Counselors provided participants with a brief description of contraceptive method duration, instruction for use, and common side effects. Counseling sessions used the GATHER framework (14) and were personalized for each patient, accounting for individual preferences.

The site counselor reviewed the health center schedules to identify potentially eligible patients. Recruitment focused primarily on women with reproductive health appointments, although we also approached family medicine and pediatric patients. Women were eligible to participate if they had a healthcare appointment at a participating health center, were between 14-45 years of age, spoke English or Spanish, were not currently pregnant, were currently sexually active with a male partner or planned to become sexually active in the next 3 months, did not desire pregnancy in the next 12 months, and were at risk for unintended pregnancy (i.e. had not undergone sterilization or hysterectomy). Women who reported having one sexual partner who had undergone vasectomy were ineligible. Current LARC users were eligible to participate if they were seeking removal of their method, either because the method had expired or to switch to a different contraceptive method. Women did not have to choose a method of

contraception to be eligible to participate. Eligible participants provided written informed consent prior to participating in research activities.

For both "Enhanced Care" and "Complete CHOICE," the site counselor provided structured contraceptive counseling after obtaining informed consent. The site counselor then administered a baseline questionnaire, which collected demographic characteristics, reproductive history, current contraceptive method, and desired contraceptive method. After the participant's visit with the healthcare provider, the site counselor completed a post-appointment survey with the participant, which asked about contraceptive method chosen and whether the method was received during that visit. Participants received a gift card for participation. We obtained approval from the Human Research Protection Office at the Washington University in St. Louis School of Medicine prior to participant recruitment. Parental consent was not required for participants under 18 years of age, as it is not required for adolescents to access confidential reproductive health services. We registered the study with ClinicalTrials.gov (NCT02364037).

We performed data collection and management using REDCap electronic data capture tools.(15) Data analysis was performed using Stata 14 (StataCorp, College Station, TX). We described demographic and reproductive characteristics using frequencies and compared "Enhanced Care" and "Complete CHOICE" using X^2 and Fisher's exact test as appropriate to assess for differences. Because characteristics differed between the two groups, we performed univariate Poisson regression with robust error variance to identify associations between baseline characteristics and our primary outcome of interest, same-day insertion of LARC. Poisson regression with robust error variance allows for a conservative estimation of the relative risk when the outcome of interest occurs more than 10% of the time.(16) We used multivariable Poisson regression to adjust for covariates associated with study group and the outcome of

interest in univariate models. We planned to include site in the regression model to control for any variability between sites. We defined confounding as any covariate significant at the 0.05 level in the univariate models. We calculated the sample size based on the parent study's primary outcome of unintended pregnancy at 12 months. Using an alpha of 0.05, the sample of 1,008 women provided more than 99% power to determine an increase in same-day insertion from 10% to 20%.

Results

We approached 1,561 women between June 2014 and September 2015 for participation; 81% had a scheduled obstetrics-gynecology appointment and 19% had a scheduled family medicine or pediatric appointment. We enrolled women into "Enhanced Care" between June 2014 and February 2015 and "Complete CHOICE" between February and September 2015. There was no recruitment gap between the two groups. "Complete CHOICE" recruitment began immediately following the healthcare provider training session at each site and was initiated at the three sites within a two-week period. Figure 1 shows the study flow diagram. There were 1,008 unique women enrolled, 502 women in "Enhanced Care" and 506 in "Complete CHOICE." Eleven women who initially enrolled in "Enhanced Care" and subsequently crossed over to "Complete CHOICE" were included only in "Enhanced Care" for the analysis.

Table 1 shows participant demographic and reproductive characteristics by group and health center. Overall, the majority of participants were black (68.8%), had a high school diploma or less (65.7%), had never been married (72.9%), were publicly insured (58.0%), and reported household income at or below the federal poverty level (76.0%). Women in "Complete

CHOICE" were older, more likely to be Hispanic and uninsured, and less likely to be black, single, or report a history of unintended pregnancy.

Table 2 shows the contraceptive method used prior to enrollment, chosen at enrollment visit, and that the participant left with post-enrollment. Women in "Complete CHOICE" were more likely to choose LARC (54.9% vs. 30.5%, $p<0.01$) compared to "Enhanced Care." Among women who chose LARC (n=426), 13.7% of "Enhanced Care" received the method at the enrollment visit compared to 53.8% of "Complete CHOICE" ($p<0.01$). Table 3 shows the univariate and multivariable Poisson regressions for the association between group, enrollment site, demographic characteristics, and same-day LARC receipt. Adjusting for site, educational level, interest in a new contraceptive method, and prior contraceptive use, women in "Complete CHOICE" were almost 5 times more likely to receive a same-day IUD or implant (RR_{adj} 4.73; 95%CI 3.20-6.98)

Table 4 shows the reason for non-receipt of LARC at enrollment. Among women in "Enhanced Care," the most common reasons were ordering the method from a third-party pharmacy (38.4%), returning with menses for insertion (19.2%), and scheduling a return appointment (18.4%). In "Complete CHOICE", the most common reasons were not enough time for the insertion (participant 21.0%, provider 14.5%) and provider requiring additional medical services prior to insertion (12.1%).

Discussion

Our study found that health care provider education and cost support for LARC in addition to structured, contraceptive counseling resulted in higher same-day insertion compared to structured counseling in addition to usual care. The low rates of same-day LARC receipt

observed in "Enhanced Care" suggest that barriers, including cost, significantly impact patients' access to their preferred contraceptive method. We also observed that use of a third-party pharmacy was a barrier for more than a third of patients in "Enhanced Care" as the method was not available on the appointment day. Furthermore, non-evidence based practices such as requiring a patient to have their menses or a negative STI testing result at the time of LARC insertion created additional barriers. Even in "Complete CHOICE," only 54% of women choosing LARC received it the same day. The most common reason that women did not receive their method was because the patient or provider did not have time. This indicates that, in addition to maintaining clinic LARC inventory, health centers may also need to address clinic flow to facilitate same-day insertion when desired.

Uptake of LARC in this study was lower than the 75% observed in the CHOICE Project.(10) However, unlike the CHOICE Project, participants were not required to switch or even choose a method of contraception to participate. The 54% uptake of LARC among "Complete CHOICE" is slightly higher to that observed in other community-based interventions conducted in Utah (43%),(17) Colorado (31%),(18) and Planned Parenthood health centers (28%).(19) In addition, the community-based study conducted in Salt Lake City, UT found that participants were 2.5 times as likely to obtain LARC at their initial health center visit.(17) A pilot study in Georgia found that after implementation of evidence-based criteria for LARC insertion in public health clinics, more than half of women requesting LARC received it the same day.(20)

Concerns around LARC uptake as a primary study outcome have been raised by members of the family planning community as this focus on LARC may increase the risk of coercive practices .(21) We chose LARC uptake as a secondary outcome as these models of

contraceptive care were based on the CHOICE Project, which emphasized reducing barriers to LARC. However, in this analysis, we specifically examined the proportion of women who desired LARC and were able to receive it the same day. Prior studies have demonstrated that requirements for multiple visits to obtain LARC create barriers for women and these barriers are likely to have greater impact for low-income women with fewer resources. A recent study of community health center staff and clinicians found that more than half of respondents reported their health center required at least two visits for an IUD insertion and felt that contraception often takes a "back seat" in community health centers.(6) While it is critical to prioritize patients' reproductive autonomy, it is also necessary to reduce structural barriers so that women can access their desired contraceptive method in a timely manner.

Strengths of this study include broad inclusion criteria which allowed us to enroll a diverse cohort of women who reflect the population of women at greatest risk of unintended pregnancy.(22) In addition, we implemented the interventions in community health centers to make the findings as generalizable as possible. Limitations of our study include the lack of a randomized controlled trial design. There were significant differences between "Enhanced Care" and "Complete CHOICE" at baseline, and while we performed multivariable analyses to control for differences between the groups, there may have been unmeasured confounding.

In summary, we successfully implemented two models of contraceptive care adapted from the CHOICE Project in the FQHC setting. We found that the model including provider education and cost support for LARC resulted in higher rates of same-day LARC insertion. While contraceptive counseling is a key component of clinical family planning encounters, interventions must also address other barriers to contraceptive access including provider training, on-the-shelf LARC, and cost to truly increase access for patients. All methods of contraception,

regardless of the upfront cost, should be readily available to all women to allow them to obtain their preferred method.

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Conflicts of Interest

Dr. Madden serves on a data safety monitoring board for phase 4 safety studies of Bayer contraceptive products. Dr. Peipert receives research funding from Bayer Healthcare Pharmaceuticals, CooperSurgical/TEVA, and Merck & Co, Inc. and serves on an advisory board for CooperSurgical Pharmaceuticals. The other authors do not have any potential conflicts of interest to report.

References

1. Sonfield A, Hasstedt K, Kavanaugh ML, Anderson R. The social and economic benefits of women's ability to determine whether and when to have children. New York, NY: Guttmacher Institute; 2013 March 2013.
2. Sundaram A, Vaughan B, Kost K, Bankole A, Finer L, Singh S, et al. Contraceptive failure in the United States: estimates from the 2006–2010 National Survey of Family Growth. Perspectives on sexual and reproductive health. 2017;49(1):7-16.
3. Gariepy AM, Simon EJ, Patel DA, Creinin MD, Schwarz EB. The impact of out-of-pocket expense on IUD utilization among women with private insurance. Contraception. 2011;84(6):e39-e42.
4. Madden T, Allsworth JE, Hladky KJ, Secura GM, Peipert JF. Intrauterine contraception in Saint Louis: a survey of obstetrician and gynecologists' knowledge and attitudes. Contraception. 2010;81(2):112-6.
5. Tyler CP, Whiteman MK, Zapata LB, Curtis KM, Hillis SD, Marchbanks PA. Health care provider attitudes and practices related to intrauterine devices for nulliparous women. Obstetrics & Gynecology. 2012;119(4):762-71.
6. Biggs MA, Kaller S, Harper CC, Freedman L, Mays AR. "Birth Control can Easily Take a Back Seat": Challenges Providing IUDs in Community Health Care Settings. Journal of health care for the poor and underserved. 2018;29(1):228-44.
7. Stanek AM, Bednarek PH, Nichols MD, Jensen JT, Edelman AB. Barriers associated with the failure to return for intrauterine device insertion following first-trimester abortion. Contraception. 2009;79(3):216-20.
8. Bergin A, Tristan S, Terplan M, Gilliam ML, Whitaker AK. A missed opportunity for care: two-visit IUD insertion protocols inhibit placement. Contraception. 2012;86(6):694-7.
9. Secura GM, Allsworth JE, Madden T, Mullersman JL, Peipert JF. The Contraceptive CHOICE Project: reducing barriers to long-acting reversible contraception. American Journal of Obstetrics and Gynecology. 2010;203(2):115. e1-7.
10. Peipert JF, Madden T, Allsworth JE, Secura GM. Preventing unintended pregnancies by providing no-cost contraception. Obstetrics and Gynecology. 2012;120(6):1291-7.
11. Draft Methodology Report: "Our Questions, Our Decisions: Standards for Patient-Centered Outcomes Research". Patient-Centered Outcomes Research Institute; 2012 July 23, 2012.
12. Ahmed SM, Palermo A-GS. Community engagement in research: frameworks for education and peer review. American journal of public health. 2010;100(8):1380-7.
13. Madden T, Mullersman JL, Omvig KJ, Secura GM, Peipert JF. Structured contraceptive counseling provided by the Contraceptive CHOICE Project. Contraception. 2013;88(2):243-9.
14. Rinehart W, Rudy S, Drennan M. GATHER guide to counseling. Population Reports Series J: Family Planning Programs. 1998(48):1-31.
15. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. Journal of biomedical informatics. 2009;42(2):377-81.
16. Zou G. A modified poisson regression approach to prospective studies with binary data. American journal of epidemiology. 2004;159(7):702-6.
17. Sanders JN, Myers K, Gawron LM, Simmons RG, Turok DK. Contraceptive method use during the community-wide HER salt lake contraceptive initiative. American journal of public health. 2018;108(4):550-6.

18. Taking the Unintended Out of Pregnancy: Colorado's Success with Long-Acting Reversible Contraception. Denver, CO: Colorado Department of Public Health and Environment; 2017 January 2017.
19. Harper CC, Rocca CH, Thompson KM, Morfesis J, Goodman S, Darney PD, et al. Reductions in pregnancy rates in the USA with long-acting reversible contraception: a cluster randomised trial. The Lancet. 2015;386(9993):562-8.
20. DeBoer TH, Hensley JG. Increasing Accessibility to Long-Acting Reversible Contraception in a Public Health Setting. Nursing for women's health. 2018;22(4):302-9.
21. Gubrium AC, Mann ES, Borrero S, Dehlendorf C, Fields J, Geronimus AT, et al. Realizing reproductive health equity needs more than long-acting reversible contraception (LARC). American journal of public health. 2016;106(1):18-9.
22. Finer LB, Zolna MR. Declines in unintended pregnancy in the United States, 2008–2011. New England Journal of Medicine. 2016;374(9):843-52.

Figure 1: Study flow and reasons for non-participation.

Table 1: Baseline demographic and reproductive characteristics of participants in *Enhanced Care* and *Complete CHOICE* groups stratified by health center

Characteristic	Health Center A			Health Center B			Health Center C		
	Enhanced Care (n=203) N(%)	**Complete CHOICE (n=162) N(%)**	***P* Value***	**Enhanced Care (n=129) N(%)**	**Complete CHOICE (n=159) N(%)**	***P* Value***	**Enhanced Care (n=170) N(%)**	**Complete CHOICE (n=185) N(%)**	***P* Value***
Age			0.33			0.61			0.02
14-19 years	33 (16.3)	33 (20.4)		25 (19.4)	25 (15.7)		30 (17.7)	34 (18.4)	
20-29 years	132 (65.0)	93 (57.4)		59 (45.7)	71 (44.7)		96 (56.5)	80 (43.2)	
30-45 years	38 (18.7)	36 (22.2)		45 (34.9)	63 (39.6)		44 (25.9)	71 (38.4)	
Race			0.82			0.10			<0.01
Black	201 (99.0)	160 (98.8)		36 (27.9)	48 (30.2)		137 (80.6)	112 (60.5)	
White	2 (1.0)	2 (1.2)		74 (57.4)	100 (62.9)		20 (11.8)	57 (30.8)	
Other	0 (0.0)	0 (0.0)		19 (14.7)	11 (6.9)		13 (7.7)	16 (8.7)	
Hispanic			0.58			0.48			0.01
Yes	6 (3.0)	8 (4.9)		22 (17.1)	31 (19.5)		11 (6.5)	27 (14.6)	
Missing	2 (1.0)	1 (0.6)		1 (0.8)	0 (0.0)		0 (0.0)	0 (0.0)	
Education			0.96			0.37			<0.01
≤ High school	158 (77.8)	128 (79.0)		82 (63.6)	106 (66.7)		77 (45.3)	111 (60.0)	
Some college	40 (19.7)	30 (18.5)		35 (27.1)	45 (28.3)		78 (45.9)	48 (26.0)	
4+ years college	5 (2.5)	4 (2.5)		12 (9.3)	8 (5.0)		15 (8.8)	26 (14.1)	
Marital status			0.32			0.01			0.04
Never married	185 (91.1)	153 (94.4)		92 (71.3)	84 (52.8)		117 (68.8)	104 (56.2)	
Married/living with partner	15 (7.4)	6 (3.7)		32 (24.8)	64 (40.3)		38 (22.4)	62 (33.5)	
Separated/divorced/ widowed	3 (1.5)	3 (1.9)		5 (3.9)	11 (6.9)		15 (8.8)	19 (10.3)	
Insurance status			0.27			0.02			0.23
None	36 (17.7)	19 (11.7)		35 (27.1)	68 (42.8)		49 (28.8)	62 (33.5)	
Public	150 (73.9)	130 (80.3)		72 (55.8)	67 (42.1)		89 (52.4)	77 (41.6)	

Commercial	17 (8.4)	13 (8.0)		22 (17.1)	24 (15.1)		31 (18.2)	45 (24.3)	
Missing	0 (0.0)	0 (0.0)		0 (0.0)	0 (0.0)		1 (0.6)	1 (0.5)	
Federal poverty level			0.68			0.90			0.22
≤ 100%	164 (80.8)	134 (82.7)		94 (72.9)	113 (71.2)		124 (72.9)	137 (74.1)	
101%-200%	34 (16.8)	26 (16.1)		30 (23.4)	38 (23.9)		38 (22.4)	31 (16.8)	
≥ 201%	5 (2.5)	2 (1.2)		3 (2.3)	6 (3.8)		8 (4.7)	16 (8.7)	
Missing	0 (0.0)	0 (0.0)		2 (1.6)	2 (1.3)		0 (0.0)	1 (0.5)	
Parity			0.95			0.23			0.15
0	53 (26.1)	41 (25.3)		45 (34.9)	51 (32.1)		63 (37.1)	73 (39.5)	
1-2	99 (48.8)	78 (48.2)		63 (48.8)	69 (43.4)		83 (48.8)	74 (40.0)	
3+	51 (25.1)	43 (26.5)		21 (16.3)	39 (24.5)		24 (14.1)	38 (20.5)	
History of a prior unintended pregnancy			0.15			0.54			0.09
Yes	92 (45.3)	57 (35.2)		76 (58.9)	88 (55.4)		89 (52.4)	77 (41.6)	
Missing	1 (0.5)	1 (0.6)		0 (0.0)	0 (0.0)		0 (0.0)	1 (0.5)	
Plan for future children			0.01			<0.01			0.02
In the next 1-3 years	30 (14.8)	25 (15.4)		19 (14.7)	24 (15.1)		37 (21.8)	27 (14.6)	
In the next 4-5 years	32 (15.8)	22 (13.6)		16 (12.4)	31 (19.5)		38 (22.4)	27 (14.6)	
In more than 5 years	51 (25.1)	19 (11.7)		57 (44.2)	31 (19.5)		36 (21.2)	40 (21.6)	
Not planning to have (more) children	88 (43.4)	96 (59.3)		37 (28.7)	73 (45.9)		59 (34.7)	91 (49.2)	
Missing	2 (1.0)	0 (0.0)		0 (0.0)	0 (0.0)		0 (0.0)	0 (0.0)	
Feeling if got pregnant in the next 12 months			0.09			0.32			<0.01
Upset	129 (63.6)	97 (59.9)		82 (63.6)	90 (56.6)		111 (65.3)	106 (57.3)	
Neutral	45 (22.2)	26 (16.1)		23 (17.8)	35 (22.0)		34 (20.0)	40 (21.6)	
Pleased	14 (6.9)	20 (12.4)		11 (8.5)	22 (13.8)		24 (14.1)	18 (9.7)	
Unsure	15 (7.4)	19 (11.7)		13 (10.1)	12 (7.6)		1 (0.6)	21 (11.4)	

*χ^2 used to estimate p values except for "Contraceptive method prior to enrollment" where Fisher's exact test was used

LARC – long acting reversible contraceptive; DMPA – depot medroxyprogesterone acetate; OCP – oral contraceptive pills

Table 2: Contraceptive method used prior to enrollment visit, desired at end of enrollment, and left with at end of enrollment visit for "Enhanced Care" and "Complete CHOICE" groups.

	Pre-Enrollment Contraceptive Method			**Desired Contraceptive Method**			**Contraceptive Method At End of Visit***		
	Enhanced Care (n=502) N(%)	**Complete CHOICE (n=506) N(%)**	***P* Value**	**Enhanced Care (n=502) N(%)**	**Complete CHOICE (n=506) N(%)**	***P* Value**	**Enhanced Care (n=502) N(%)**	**Complete CHOICE (n=506) N(%)**	***P* Value**
Contraceptive method			<0.01			<0.01			<0.01
Hormonal IUD	11 (2.2)	15 (3.0)		41 (8.2)	85 (16.8)		10 (2.0)	40 (7.9)	
Copper IUD	0 (0.0)	8 (1.6)		27 (5.4)	26 (5.1)		2 (0.4)	11 (2.2)	
Implant	8 (1.6)	23 (4.6)		85 (16.9)	162 (32.0)		17 (3.4)	110 (21.7)	
DMPA	185 (36.9)	125 (24.7)		192 (38.3)	127 (25.1)		220 (43.8)	145 (28.7)	
OCP/patch/ring	67 (13.4)	37 (7.3)		104 (20.7)	53 (10.5)		113 (22.5)	66 (13.0)	
Condoms	46 (9.2)	77 (15.2)		13 (2.6)	16 (3.2)		35 (7.0)	57 (11.3)	
Other	19 (3.8)	15 (3.0)		5 (1.0)	2 (0.4)		13 (2.6)	8 (1.6)	
Nothing	166 (33.1)	206 (40.7)		35 (7.0)	35 (6.9)		92 (18.3)	69 (13.6)	

IUD – Intrauterine device; DMPA – depot medroxyprogesterone acetate; OCP – oral contraceptive pills
*There were 22 existing LARC users (8 in "Enhanced Care" and 14 in "Complete CHOICE") who did not chose a new method or desired a new LARC but did not receive on the day of enrollment; therefore 21 in "Enhanced Care" and 149 in "Complete CHOICE" actually received a LARC insertion at the enrollment visit.

Table 3: Participant characteristics associated with same-day insertion of long-acting reversible contraception at enrollment visit.

Baseline Characteristic	N	Univariate Analysis RR (95% CI)	Multivariable Analysis* (N=426) RR (95% CI)
Group	426		
Enhanced Care		Ref.	Ref.
Complete CHOICE		3.92 (2.60-5.93)	4.73 (3.20-6.98)
Enrollment site	426		
Health Center A		Ref.	Ref.
Health Center B		0.88 (0.64-1.20)	0.55 (0.42-0.71)
Health Center C		0.90 (0.67-1.21)	0.55 (0.42-0.72)
Age	426		
14-19 years		1.06 (0.76-1.47)	---
20-29 years		Ref.	---
30-45 years		1.08 (0.83-1.41)	---
Race	426		
Black		0.94 (0.74-1.21)	---
White		Ref.	---
Other		0.81 (0.47-1.39)	---
Hispanic	425	1.03 (0.75-1.43)	---
Education	426		
≤ High school		1.53 (1.10-2.12)	1.43 (1.06-1.91)
Some college		Ref.	Ref.
4+ years college		1.28 (0.77-2.14)	1.25 (0.79-1.98)
Marital status	426		
Never married		Ref.	---
Married/living with partner		0.95 (0.73-1.25)	---
Separated/divorced/widowed		0.93 (0.58-1.50)	---
Insurance status	426		
None		1.10 (0.85-1.42)	---
Public		Ref.	---
Commercial		0.99 (0.70-1.41)	---
Federal Poverty Level	425		
≤ 100%		Ref.	---
101%-200%		0.85 (0.61-1.20)	---
≥ 201%		0.61 (0.28-1.31)	---
Parity	426		
0		Ref.	---
1-2		1.04 (0.78-1.37)	---
3+		1.01 (0.72-1.41)	---
History of unintended pregnancy	424	0.90 (0.71-1.13)	---
Plan for future children	425		

In the next 1-3 years		0.90 (0.60-1.36)	---
In the next 4-5 years		0.97 (0.70-1.34)	---
In more than 5 years		0.91 (0.68-1.23)	---
Not planning to have (more) children		Ref.	---
Feeling if got pregnant in the next 12 months	426		
Upset		Ref.	---
Neutral		1.04 (0.77-1.42)	---
Pleased		0.96 (0.61-1.51)	---
Unsure		1.15 (0.77-1.70)	---
Interest in a new contraceptive method	426	0.53 (0.41-0.69)	0.76 (0.49-1.16)
Contraceptive method prior to enrollment	426		
LARC		1.39 (1.05-1.85)	1.11 (0.74-1.67)
DMPA		0.64 (0.43-0.97)	0.69 (0.48-0.98)
OCP/patch/ring		0.78 (0.48-1.28)	0.98 (0.64-1.50)
Condoms		0.84 (0.58-1.21)	0.90 (0.63-1.27)
Other		0.64 (0.32-1.30)	0.81 (0.43-1.50)
Nothing		Ref.	Ref.

*Adjusted for site, education level, interest in a new contraceptive method, and prior contraceptive use.
RR were calculated using univariate and multivariable Poisson regression of association between group assignment and baseline characteristics.

Table 4: Reasons for non-receipt of desired long-acting reversible contraception on enrollment day for participants in "Enhanced Care" and "Complete CHOICE" groups.

	Enhanced Care N=125*	**Complete CHOICE N=124**
Reason	**N(%)**	**N(%)**
Return for insertion after device ordered from 3rd party pharmacy	48 (38.4)	1 (0.8)
Return for insertion with menses	24 (19.2)	12 (9.7)
Provider wanted participant to think about decision or return for another appointment	23 (18.4)	15 (12.1)
Check insurance coverage	12 (9.6)	0 (0.0)
Return for insertion after results of sexually tranmistted infection testing	8 (6.4)	1 (0.8)
Participant wanted more time to think about decision	6 (4.8)	10 (8.1)
Participant didn't have time for insertion	1 (0.8)	26 (21.0)
Provider didn't have time for insertion	0 (0.0)	18 (14.5)
Appointment needs to be scheduled with provider trained trained to place IUD/implant	0 (0.0)	7 (5.7)
Provider requires additional medical evaluation before insertion	0 (0.0)	6 (4.8)
Participant is less than 6 weeks postpartum	0 (0.0)	5 (4.0)
Could not reliably rule out pregnancy	0 (0.0)	3 (2.4)
Participant needs cervical ripening for insertion	0 (0.0)	3 (2.4)
Recent history of sexually tranmistted infection	0 (0.0)	3 (2.4)
Participant wants to discuss with partner	0 (0.0)	2 (1.6)
Other	2 (1.6)	4 (3.2)

* 3 women had no plan, total is 128

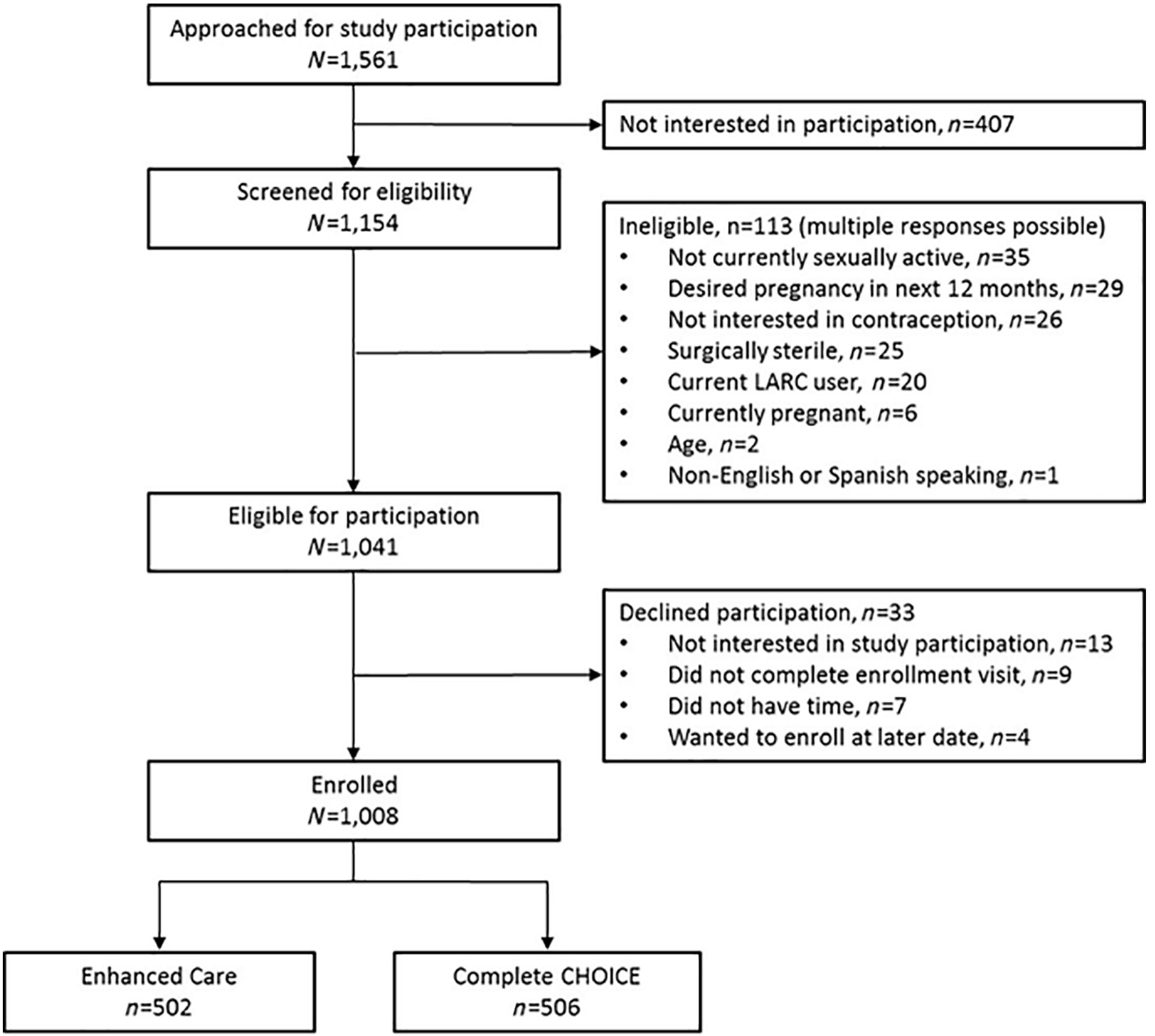
Approached for study participation
N=1,561
Not interested in participation, n=407
Screened for eligibility
N=1,154
Ineligible, n=113 (multiple responses possible)
• Not currently sexually active, n=35
• Desired pregnancy in next 12 months, n=29
• Not interested in contraception, n=26
• Surgically sterile, n=25
• Current LARC user, n=20
• Currently pregnant, n=6
• Age, n=2
• Non-English or Spanish speaking, n=1
Eligible for participation
N=1,041
Declined participation, n=33
• Not interested in study participation, n=13
• Did not complete enrollment visit, n=9
• Did not have time, n=7
• Wanted to enroll at later date, n=4
Enrolled
N=1,008
Enhanced Care
n=502
Complete CHOICE
n=506

Figure 1