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## Access to long-acting reversible contraception among US publicly funded health centers

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### Abstract

**Objectives:** Access to a full range of contraceptive methods, including long-acting reversible contraception (LARC), is central to providing quality family planning services. We describe health center-related factors associated with LARC availability, including staff training in LARC insertion/removal and approaches to offering LARC, whether onsite or through referral.

**Study Design:** We analyzed nationally representative survey data collected during 2013–2014 from administrators of publicly funded U.S. health centers that offered family planning. The response rate was 49.3% (n=1615). In addition to descriptive statistics, we used multivariable logistic regression to identify health center characteristics associated with offering both IUDs and implants onsite.

**Results:** Two-thirds (64%) of health centers had staff trained in all three LARC types (hormonal IUD, copper IUD, implant); 21% had no staff trained in any of those contraceptive methods. Half of health centers (52%) offered IUDs (any type) and implants onsite. After onsite provision, informal referral arrangements were the most common way LARC methods were offered. In adjusted analyses, Planned Parenthood (AOR=9.49) and hospital-based (AOR=2.35) health centers had increased odds of offering IUDs (any type) and implants onsite, compared to Health Departments, as did Title X-funded (AOR=1.55) compared to non-Title X-funded health centers and centers serving a larger volume of family planning clients. Centers serving mostly rural areas compared to those serving urban areas had lower odds (AOR 0.60) of offering IUD (any type) and implants.

**Conclusions:** Variation in LARC access remains among publicly funded health centers. In particular, Health Departments and rural health centers have relatively low LARC provision.

### Keywords

Long-acting reversible contraceptives LARC; Contraceptive methods; Title X; Training

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## 1. Introduction

In 2014, the CDC and the Office of Population Affairs published recommendations for the provision of quality family planning services. In these recommendations, the need to offer the full range of contraceptive methods onsite or by referral, including long-acting, reversible contraception (LARC), which include hormonal and copper intrauterine devices (IUDs) and hormonal implants [1,2], is highlighted. Recommendations by the American Congress of Obstetricians and Gynecologists are similar. LARCs are highly effective methods, with failure rates of b1% [3] Women in the United States are increasingly choosing LARC methods, although prevalence remains relatively low. According to national population-based data, just over 7% of women were using a LARC method in 2011–2013, an increase from 3.8% in 2006–2010 [4].

A recent study partly attributed the decline of unintended pregnancies in 2008–2011 to the use of LARC methods [5]. Additional studies show that reducing barriers to LARC can lead to increased LARC use among women and, in turn, decreased rates of unintended pregnancy [6,7]. In Colorado, providing LARC methods at no charge to teens was associated with increased use of those methods from under 3% to 25% in 6 years and a reduction in teen pregnancy by between 4.6 and 7.9% [8]. In St. Louis, with more education on LARC and free LARC provision, 72% of teen girls enrolled in the study chose a LARC method, which was associated with significantly lower pregnancy, birth, and abortion rates compared to national averages [9]. Although the St. Louis project focused on teens and adult women, data regarding unintended pregnancy were studied more extensively in teens.

Despite the effectiveness of LARCs, numerous barriers to LARC use for both teens and adult women remain. These include lack of knowledge about LARC among clients and providers, ongoing misconceptions about the safety of LARC, gaps in provider knowledge and training, and cost and insurance coverage barriers [10]. For example, a national survey of obstetricians-gynecologists found that nearly all respondents reported offering IUDs, but most required two or more visits; and only 51% received residency training on contraceptive implants [11]. A survey of providers in California's Family PACT program found that only 41% of sites offered the implant onsite and about one fifth would not recommend IUDs for teenagers or nulliparous women, contrary to United States Medical Eligibility Criteria for contraceptive use [12–14].

Characterizing such barriers is essential to addressing them and making LARC more accessible. Using nationally-representative data from publicly-funded health centers that offer family planning, we describe health center approaches to providing LARC, whether onsite or by various types of referral arrangements, with a focus on factors associated with onsite provision of both LARC methods (IUDs and implants).

## 2. Methods

### 2.1. Data

From June 2013–May 2014, surveys were sent to a stratified, random sample of 4000 health centers identified from a Guttmacher Institute database of all publicly-funded family

planning health centers nationwide [15]. Primary aims of the survey were to provide baseline data for implementation of the Recommendations for Providing Quality Family Planning Services and to compare health centers who received funding from the Title X federal family planning program to health centers that did not receive Title X funding. Therefore, by design, the sample was stratified into recipients and non-recipients of Title X funding. Within each of those strata, 2000 centers were randomly sampled, with further stratification by health center type (Health Department, Planned Parenthood, Community Health Center, hospital-based center, other) to ensure proportional representation of health center type within the sample. At each sampled health center, an administrator was asked to complete a survey.

We calculated the response rate by assuming that the proportion of health centers eligible in the unknown eligibility subgroup was the same as the proportion in the known eligibility subgroup. After excluding ineligible health centers (i.e., closed by the time of data collection), the overall response rate was 49.3% ( $n=1615$ ). Response rates did vary by Title X funding status (61.0% for Title X health centers and 37.6% for non-Title X health centers) and health center type (ranged from 37.9% for Community Health Centers to 63.5% for Health Departments). As the project was determined to be non-research, public health practice by the CDC, Institutional Review Board approval was not needed.

## 2.2. Measures of LARC Access

The survey asked if all, any, or no clinical staff were ever trained in inserting/removing each of the following LARC methods: hormonal IUD, copper IUD, and implant. Administrators also were asked how their health center offered IUDs (any type) and implants, separately, with the following response options: (1) offered the service onsite, (2) co-located with providers who offered the service or their parent organization offered it, (3) had a contract or other written agreement with an organization that provided the service, (4) had informal relationships with providers who offered the service, or 5) had a referral-only partnership. We categorized responses 2 and 3 as “formal” arrangements, and responses 4 and 5 as “informal” arrangements for this analysis.

## 2.3. Analytic strategy and independent variables

We present estimates of health center approaches to offering LARC overall and by three health center characteristics: (1) receipt of Title X funding (yes/no); (2) health center type (Health Department, Planned Parenthood, Community Health Center, hospital-based health center, or other); and (3) area served (mainly rural, mainly urban/suburban, or combination of rural and urban/suburban). We used chi-square tests to identify significant differences in these distributions.

We also conducted multivariate logistic regression to identify health center characteristics associated with providing LARC onsite. In addition to the characteristics described above, we included the approximate annual client volume (6 categories ranging from b500 clients to 50,000+ clients), annual family planning client volume (5 categories ranging from b500 clients to 10,000+ clients), and geographic region (Northeast/Mid-Atlantic, South/Southwest, Mid-west, and West) as independent variables. Both total and family planning

client volume were included because they had significant associations with onsite provision in bivariate analysis. We considered using the staff training on LARC variable as an independent variable in the multivariable regression, but opted not to as staff training was strongly correlated with onsite provision. We describe that association in more detail below. By not including training in the model, we could better identify associations with the other health center characteristics. Analyses were conducted in Stata V.12, and data were weighted to adjust for the complex sampling design and non-response.

### 3. Results

A total of 1615 health centers responded to the survey. Of these, 37% were Community Health Centers, 31% were Health Departments, and the remaining were a combination of Planned Parenthood, hospital-based, and other health center types (Table 1). Half of respondents received Title X funding (49%), and approximately half (48%) served mostly rural areas. Most health centers saw between 1000 and 10,000 clients in the last year. On average, about a quarter of clients were under age 20 (not shown).

Most health centers reported having any staff trained in the three LARC methods specified: hormonal IUD (76%), copper IUD (74%), and implant (69%) (Table 2). Almost two-thirds (64%) of health centers had staff trained in inserting/removing all three LARC methods. Conversely, one fifth (21%) of health centers did not have any staff trained in inserting/removing any LARC methods.

About half (52%) of health centers reported offering IUDs (type not specified) and implant onsite (Table 3), and 72% offered either an IUD or implant onsite (not shown). Among the alternatives to onsite provision, informal referral arrangements were more common than formal arrangements. One-fifth (21%) of health centers offered neither IUDs nor implants onsite and reported having only informal referral arrangements for offering those methods (not shown). Looking at each LARC method separately, a higher percent of health centers offered IUDs onsite compared to implants (69% vs. 55%, respectively) (Table 2). The approach to offering IUDs and implants varied significantly by Title X funding status and health center type. Title X-funded health centers had a slightly higher prevalence of offering both IUDs and implants onsite than non-Title X-funded health centers (72% vs. 66% for IUDs, 58% vs. 52% for implants) (Table 2).

Higher percentages of Planned Parenthood health centers offered IUDs (any type) and implants onsite compared to other types of health centers. For example, 92% of Planned Parenthood health centers offered both IUDs (any type) and implants onsite, versus 43% of Health Departments (Table 3). Among alternative referral arrangements for offering these methods, Health Departments had the highest prevalence of formal referral arrangements (17% for IUD), compared to other health center types (e.g., 11% for IUD among Community Health Centers) (Table 2).

#### 3.1. Other factors associated with offering IUD and implant onsite

Bivariate logistic regression examining characteristics associated with offering IUDs (any type) and implants onsite showed that health centers located in the South/southwest and

Mid-West had lower odds of offering both LARC methods onsite, compared to those in the West region. Additionally, larger volumes of both family planning clients and total clients were each associated with higher odds of offering both LARC methods on site (Table 3).

Staff training was strongly associated with offering both LARC types onsite. Health centers that reported any staff trained in the insertion/removal of both LARC types had 34.35 higher odds of providing both LARC method types onsite compared to health centers without such staff (Table 3). Breaking down the association between trained staff and onsite provision by specific LARC method, the large majority (86%) of health centers with staff trained in IUD insertion/removal (any type) also reported offering IUDs onsite, and a majority (76%) of health centers with staff trained in implant insertion/removal offered implants onsite. About a quarter (26%) of health centers with any staff trained in both IUD and implant insertion/removal were not offering both methods onsite (not shown).

In multivariable regression analysis, most associations remained (Table 3). Controlling for other factors, Planned Parenthood health centers had higher odds of offering IUD (any type) and implants onsite compared to Health Departments (AOR=9.49, 95% CI 5.03–17.90), as did hospital-based health centers (AOR=2.35, 95% CI 1.32–4.19). Title X-funded health centers had increased odds of offering IUDs and implants onsite compared to non-Title X-funded health centers (AOR=1.55, 95% CI 1.15–2.08), and rural and combination urban/rural-serving health centers both had lower odds of offering both LARC methods onsite compared to urban-serving health centers (AOR=0.60, 95% CI 0.44–0.82; and AOR=0.66, 95% CI 0.47–0.93 respectively). Annual family planning client volume was positively associated with onsite provision, with the AORs increasing with volume categories, compared to health centers with the smallest annual family planning volume. Associations with total annual client volume were mostly attenuated after adjustment. Additionally, after adjustment, geographic region was no longer significantly associated with onsite provision of both LARC methods.

#### 4. Discussion

Clients benefit from access to a full range of contraceptive methods so their preferred method choice can be attained, but health center variation in offering LARC remains. Offering IUDs and implants onsite is optimal, and half (52%) of health centers in this analysis did so. Nevertheless, 21% did not offer either LARC method onsite or through a formal referral mechanism. A similar proportion had no staff trained in inserting/removing any LARC methods. These findings indicate potentially restricted access to LARC for clients of such health centers. Onsite provision of LARC was less common in health centers serving rural areas, a population that already faces more barriers to health care [16]. Some health centers reported offering LARC onsite and that they have no staff trained in LARC. While having staff trained in LARC was associated with significantly higher odds of offering LARC onsite (OR=34.35), the two were not perfectly correlated. In addition to misreporting, health centers who reported offering LARC onsite, but having no staff trained in LARC may host visiting clinicians with LARC training, but not having any permanent employees who can insert/remove LARCs.

Of Planned Parenthood clinics surveyed, nearly all had staff trained in inserting/removing both LARC types and offered both methods onsite. Community Health Centers and Health Departments, two large sectors for publicly-funded family planning services, had lower odds of having staff trained in LARC and offering LARC onsite. While Title X-funded clinics were comparable to non-Title X-funded clinics in staff training, Title X clinics had significantly higher odds of offering both LARC methods onsite, even when controlling for other factors that influence LARC provision, such as clinic size and region.

Prior studies suggest that there may be a growing trend in LARC provision. For example, Wood and colleagues (2011) found that 36% of federally qualified health centers (FQHCs) offered at least an oral contraceptive plus a LARC method onsite [17]. This contrasts with this study's findings from 2013–2014, that 48% of Community Health Centers offered both LARC methods onsite and 70% offered at least one LARC method.

Apart from offering LARC onsite, informal relationships/referrals were the most common arrangement reported by health centers for offering LARC. While informal referral mechanisms are not necessarily ineffective, it is plausible that formal referral arrangements strengthen access. Formal partnerships may facilitate client hand-off, transfer of information, general timeliness, and continuity of care. Additional research is needed to understand the relationship between referral mechanisms and quality of care.

Staff training in LARC methods was highly associated with providing LARC onsite. Like this study, a 2014 study of California's family planning Medicaid program concluded that LARC training was a predictor of onsite LARC provision [12]. Additionally, an evaluation of 3000 ACOG members found that training was strongly associated with offering implants and that a lack of training in LARC was a barrier to onsite offering [11]. Efforts should continue toward monitoring the extent and adequacy of training in LARC, as well as identifying systems-level changes to ensure providers can translate training into service, such as removing payment barriers and providing evidence-based implementation support [18,19].

#### 4.1. Strengths and limitations

These findings provide a snapshot of LARC training and onsite access in a large, nationally representative survey of publicly-funded health centers. By describing health center characteristics, we offer an important perspective on equitable access that complements those that describe LARC beliefs and practices among individual clinicians. It is also unique in describing referral arrangements for LARC.

This analysis focused on select health center characteristics related to the “supply side” of LARC, but other types of barriers exist. The CHOICE study found that when cost barriers were removed and the benefits of LARC were accurately communicated, the majority of patients chose a LARC method [20]. We also could not assess other aspects of access, such as a health center's location, hours of operation, LARC supply chain issues, reimbursement issues, or provider beliefs, among others [10,21]. A recent study looking at factors influencing LARC provision in California found that LARC training and beliefs about LARC were primary predictors of provision [12]. Lastly, because clients who want LARC

methods are likely to seek out clinics that offer them, there could be a relationship between client volume and LARC provision that we are not able to account for.

Additionally, this study examined the presence of staff trained in LARC insertion/removal, but we did not have information about the content or quality of training, or staff ability to offer LARC after the training. The nature of the data and analysis limit our ability to understand all the reasons why LARC may or may not have been provided at health centers. Data were self-reported by health center administrators and therefore prone to desirability bias and error. The survey response rate was 49.3%, which is lower than preferred, though data were weighted to correct for non-response bias. Lastly, while a 2012 study suggested that LARC training and provision may be inadequate among private health centers as well [22], the generalizability of these analyses may be limited to publicly-funded clinics in the US that provide family planning services.

## 5. Conclusion

Access to a full range of contraceptive methods, including LARC, is a key strategy to reduce unintended pregnancy. This study examined the extent to which LARC methods are available to individuals who want them. One fifth (21%) of health centers in this survey did not offer either LARC type onsite or relied on informal referrals to offer clients these services. To improve access to LARC, onsite provision needs to be increased. Publicly-funded health centers can play a key role in reducing unintended pregnancy by increasing access to LARC through developing and deploying staff training in inserting/removing LARC.

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**Implications:**

For more women to be offered a full range of contraceptive methods, additional efforts should be made to increase availability of LARC in publicly-funded health centers, such as addressing provider training gaps, improving referrals mechanisms, and other efforts to strengthen the health care system.

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**Table 1**

Characteristics of publicly-funded health centers that offered family planning services in the USA, 2013–2014\*

Type of health center (N=1615)	N	%
Planned Parenthood	168	9%
Community Health Center	427	37%
Health Department	684	31%
Hospital	84	7%
Other type	252	16%
<b>Funding (N=1615)</b>		
Received Title X funding	1045	49%
Did not receive Title X funding	570	51%
<b>Health and Human Services (HHS) regions (N=1563)</b>		
North East/Mid-Atlantic (HHS regions 1–3)	280	18%
South/South West (regions 4 and 6)	565	33%
Midwest (regions 5 and 7)	289	19%
West (regions 8–10)	429	30%
<b>Type of area served (N=1598)</b>		
Mostly urban/suburban	459	31%
Mostly rural	800	48%
Both rural and urban/suburban	339	21%
<b>Total family planning clients seen, last year (N=1530)</b>		
<500	454	30%
500–999	313	20%
1000–4999	565	36%
5000–9999	124	8%
10,000+	74	5%
<b>Total clients seen, last year (N=1564)</b>		
<500	131	7%
500–999	133	8%
1000–4999	588	35%
5000–9999	283	19%
10,000–49,999	372	27%
50,000+	57	4%

\* Numerators are unweighted; proportions are weighted.

**Table 2**

Staff training and approach to offering long acting, reversible contraceptives (LARC) at publicly-funded health centers that offered family planning services in the USA, 2013–2014\*

	Overall	Title X	Non-title X	p value <sup>^</sup>	Planned Parenthood	Community Health Center	Health Department	Hospital	Other	p value <sup>^</sup>
<b>% of clinics with any staff trained in insertin/removing LARC (by type):</b>										
Hormonal Intrauterine Device (IUD)	76%	77%	74%	.17	99%	75%	71%	84%	71%	< .01
Copper IUD	74%	76%	72%	.02	99%	71%	69%	86%	70%	< .01
Implant	69%	69%	68%	.48	98%	65%	62%	85%	66%	< .01
<b>% of clinics with staff training in:</b>										
No LARC method	21%	19%	23%	.05	<1%	22%	25%	12%	27%	< .01
Any LARC method	79%	81%	77%	.05	99%	78%	75%	88%	73%	< .01
All 3 LARC methods	64%	65%	63%	.28	98%	59%	57%	82%	63%	< .01
<b>Approach to offering IUD:</b>										
Offered onsite	69%	72%	66%		95%	67%	63%	84%	63%	
Formal referral arrangement <sup>#</sup>	11%	12%	11%		0%	11%	17%	5%	10%	
Informal referral arrangement	20%	17%	23%		5%	22%	20%	11%	27%	
<b>Approach to offering Implant:</b>										
Offered onsite	55%	58%	52%	.04	92%	51%	47%	74%	49%	< .01
Formal referral arrangement <sup>#</sup>	11%	10%	11%		3%	11%	14%	10%	9%	
Informal referral arrangement	34%	32%	37%		5%	38%	39%	16%	41%	

\* Data are weighted.

<sup>^</sup> Pearson chi-squared tests.

<sup>#</sup> Formal referral arrangement was defined as being co-located with an organization that provided it, having a parent organization that did so, or having a contract with an organization that did so. Informal referrals were defined as having an information relationship with a provider that did so or through referral only.

**Table 3**

Odds ratios from a logistic regression examining offering both IUD and implant onsite at publicly-funded health centers providing family planning services in the U.S., 2013–2014, N=1388\*

Variable	% offering both onsite	Bivariate		Multivariate	
		Odds ratio	P value	Odds ratio	P value
<i>Total</i>	52%				
<i>Health center type - compared to Health Departments</i>	43%				
Planned Parenthood	92%	14.91	<.01	9.49	<.01
Community Health Centers	48%	1.22	.07	1.28	.15
Hospital-based clinics	73%	3.64	<.01	2.35	<.01
Other	46%	1.14	.35	1.13	.49
<i>Funding - compared to not funded by Title X</i>	49%				
Title X-funded	55%	1.26	<.01	1.55	<.01
<i>Type of area served - compared to mostly urban</i>	69%				
Mostly rural	40%	0.29	<.01	0.60	<.01
Combination of urban and rural	56%	0.55	<.01	0.66	.02
<i>Region - Compared to West</i>	58%				
South/South West	45%	0.59	<.01	0.69	.02
Mid-West	46%	0.62	<.01	0.59	<.01
North East/Mid-Atlantic	62%	1.17	.31	0.83	.33
<i>Number of Family Planning clients - compared to &lt;500</i>	26%				
500–999	50%	2.84	<.01	2.38	<.01
1000–4999	65%	5.39	<.01	3.00	<.01
5000–9999	80%	11.92	<.01	4.29	<.01
10,000+	84%	15.14	<.01	4.24	<.01
<i>Number of clinical services clients - compared to &lt;500</i>	21%				
500–999	34%	1.88	<.01	1.18	.58
1000–4999	47%	3.23	<.01	1.51	.11
5000–9999	55%	4.50	<.01	1.57	.13
10,000–49,999	66%	6.97	<.01	2.38	<.01
50,000+	71%	9.17	<.01	2.89	.03
<i>Staff trained in both methods</i>	74%	34.35	<.01		

\*Data are weighted.