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Beyond the Surface: Care Seeking Among Patients Initiating Contraceptive Implant in an Urban Federally Qualified Health Center Network

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Abstract

Purpose: To describe rates of and reasons for follow-up among adolescents and adults receiving contraceptive implants in a Federally Qualified Health Center (FQHC). **Methods:** Retrospective comparison of patient-initiated implant-related contacts during the 6 months postinsertion among adolescents (110) and adults (154) who had implants placed at a FQHC network. **Results:** Forty percent of adolescents and 26% of adults initiated follow-up ($P = .016$). Bleeding changes and discussing removal were the most common reasons for follow-up for both groups. Adolescents (5.5%) and adults (9.0%) had similar removal rates ($P = .348$). However, among patients who discussed implant removal, adults were more likely to have removals compared with adolescents ($P = .002$). **Conclusions:** Other FQHCs may anticipate a similar experience to ours, where adolescents may be more likely than adults to initiate implant-related follow up, with removal rates of less than 10% at 6 months. Further study of physician decision making and patient autonomy regarding implantable contraception removal requests is warranted.

Keywords

community health centers, primary care, contraception, implantable contraception, FQHC, adolescent

The subdermal etonogestrel contraceptive implant ("implant"), a long-acting reversible contraceptive, is among the safest and most effective methods of birth control.[1] Placed in the arm, the implant is inserted and removed as a routine outpatient office procedure and can be utilized for up to 3 years. Given the implants' efficacy[1] and high patient satisfaction,[2] professional clinical guidelines recommend the implant among first-line contraceptive options.[3,4] Though relatively underutilized, the implant is steadily gaining popularity. Between 2002 and 2012, implant use by reproductive-aged US women increased from 0.4% to 1.3%.[5] There is momentum to increase implant access in primary care settings.[6,7]

The Affordable Care Act's $11 billion investment in community health centers[8] as well as the contraception coverage mandate[9] may facilitate increased implant provision in settings such as Federally Qualified Health Centers (FQHCs). FQHCs, staffed largely by primary care physicians, serve as health care safety nets and provide reproductive healthcare for socioeconomically disadvantaged patients.[10,11] However, data from 2011 showed that only 33% of small or medium FQHCs and 55% of large FQHCs had on-site implant availability due to barriers such as cost of stocking the device and access to trained providers.[12] As these barriers are identified and addressed, FQHCs that incorporate on-site implant access may want to proactively plan for patient's follow-up needs.

Thus, our study aims to describe an urban family medicine staffed FQHC network's experience providing post–implant insertion care. Specifically, we examine the rates of and reasons for patient-initiated follow-up during the first 6 months following implant insertion in an FQHC. Because studies of another form of long-acting reversible contraception, intrauterine devices, have shown differences in postinsertion-related contact and removal rates between adolescents and adults,[13] we compared these 2 groups.

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Methods

Design and Setting

We conducted a retrospective chart review with data from the Institute for Family Health electronic medical record (EMR).

The Institute for Family Health (IFH) is a New York State FQHC network staffed predominantly by family physicians. All patients with contraceptive implants inserted during the study period were followed from the date of insertion to 6 months postinsertion or until the device was removed, whichever occurred first.

During our study period clinicians at 8 IFH sites offered implant insertions and removals. One location also served as a women's health procedural training site for a family medicine residency program. This site provides free grant-funded contraceptive implants for uninsured patients and adolescents requiring confidential implant insertion. This site is also affiliated with a high school–based health center (SBHC) that referred students during this period for implants and/or intrauterine devices.

Sample

Using ICD-9 (International Classification of Diseases, 9th revision) and CPT (Current Procedural Terminology) codes we identified all patients younger than 36 years who had an implant inserted at an IFH site between January 1, 2011 and June 30, 2013. For participants who had more than 1 implant insertion during the study period, only information from their first insertion visit was included.

Data Collection

We reviewed the EMR to identify any patient-initiated, implant related contacts with providers during the 6-month postinsertion period. These contacts included office visits, telephone calls, and/or electronic message communications. If the participant had initiated implant-related contact during the 6 months, deidentified data were extracted from the EMR and entered into a secure database.

Providers at the IFH do not typically schedule a follow-up appointment postinsertion. Instead, providers recommend that patients contact them as needed. However, for patients from the affiliated SBHC who have implant insertions, per protocol an AmeriCorps worker attempts follow-up contact at 1 day, 1 week, 6 weeks, 3 months, and 6 months postinsertion to determine if the patient has any concerns. These AmeriCorps worker initiated encounters were not included in the study as they were not patient initiated. Since these contacts may have affected these adolescent's follow-up, we separately examined frequency and content of the per protocol follow-up contacts.

Measures

Insertion Visit. Baseline visit information included demographics, implant payment method (insurance or grant funded), and inserter skill status (independent or learners, including attendings, residents, and medical students). All insertions done by a learner were supervised by an experienced attending.

Patient-initiated follow-up contacts included time to contact, contact type (office visit, telephone, or electronic), reason for contact, whether a removal was requested, whether it occurred and if so, reason for removal and alternate contraception selected.

Data Analysis

Data analysis was performed using STATA v 13.0 software. Descriptive statistics were tested using chi-square tests, Fischer's exact tests, and *t* tests as appropriate with significance defined as $P < .05$. Consistent with similar studies,[2,13,14] we defined adolescents as patients younger than 21 years on the day of insertion.

This study was approved by the IFH Institutional Review Board.

Results

Baseline Characteristics

During the study period 264 patients met our inclusion criteria, 110 adolescents and 154 adults (Table 1). A significantly greater proportion of adults paid for their implant through insurance as compared with adolescents (85.1% and 63.5%, respectively, $P < .001$.) There was no significant difference between groups with regard to the proportion of patients with learner-involved insertions. Fifteen of the 110 (13.6%) adolescents were part of the SBHC protocol.

Postinsertion, Patient-Initiated Implant-Related Follow-up Contact. During the 6 months postinsertion, 40.0% (n = 44) of adolescents initiated implant-related follow-up contacts, as compared with 26.0% (n = 40) of adults ($P = .016$) (Table 1). Inserter skill status and the method of payment for the implant were not significantly associated with initiation of follow-up contact among adolescents or adults.

Of the adolescents who initiated postinsertion contact, 88.6% (n = 39) had at least one office visit, while 11.4% (n = 5) used only telephone or electronic messaging (Table 2). Similarly, 80.0% (n = 32) of adults who initiated an implant-related contact had an office visit, while 20.0% (n = 8) used only telephone or electronic messaging. The median number of contacts for both groups were 1, ranging from 1 to 5. The median time to first contact was 7.5 weeks for adolescents compared with 9 weeks for adults. Adolescents were significantly more likely to initiate contact with a provider

Table 1. Demographic Characteristics of Adolescents and Adults Who Had a Contraceptive Implant Inserted at the Institute for Family Health FQHC Network Between January 2011 and June 2013.

Characteristics	Adolescents (N = 110), n	%	Adults (N = 154), n	%	*P*
Age, y, mean (SD)	17.7 (1.7)	—	26.7 (3.8)	—	—
Age, y					—
<18	71	64.5	—		
18-20	39	35.4	—		
21-25	—		79	51.3	
26-30	—		41	26.6	
31-35	—		34	22.1	
Race[a]					<.001
White	6	5.5	31	20.1	
African American	14	12.7	29	18.8	
Other/Mixed	49	44.6	69	44.8	
Ethnicity[a]					<.001
Non-Hispanic	22	20.0	60	39.0	
Hispanic	60	54.6	78	50.6	
Implant payment form[a]					<.001
Insurance	70	63.6	131	85.1	
Grant-funded	40	36.4	23	14.9	
Inserter skill status					.793
Independent	47	46.1	63	47.8	
Learner	55	53.9	71	52.2	
Patient-initiated implant-related follow-up contact during the 6 months postinsertion	44	40.0	40	26.0	.016

Abbreviation: FQHC, Federally Qualified Health Center.
[a] The total may not sum to 100% due to missing data.

within the first week of insertion ($P = .009$). The most common reasons for initiating contact were similar for both groups: bleeding changes, discussion of removal, desire for pregnancy testing, and arm pain.

For adolescent patients from the affiliated SBHC, the AmeriCorps worker successfully contacted 14 of the 15 adolescents at least once. Of those 14 patients, 7 (50%) had only 1 AmeriCorps contact during the 6-month period. The most common concern expressed during the AmeriCorps-initiated contacts within the first month was pain or bruising at the insertion site (n = 3); bleeding change was the most common concern during the 6-month postinsertion period (n = 7). During these per protocol SBHC contacts there were no requests for removal. Of note, 8 of the 15 adolescents (53%) from the affiliated SBHC also initiated at least 1 implant-related follow-up office visit, as compared with 36 of the 95 (38%) non-SBHC affiliated adolescents.

Removal. Among *all patients* in our study, there was no significant difference in the proportions of adolescents (5.5%) and adults (9.0%) who discontinued the method at our FQHC network within 6 months of insertion ($P = .348$) (Table 2). The median time to removal among adolescents was slightly earlier than adults (15 vs 17.5 weeks).

While there was no significant difference in the proportion of adolescents (36.3%) and adults (37.5%) who initiated contact to discuss implant removal ($P = .914$), a significantly greater proportion of adults who came in to discuss removal actually had their implant removed ($P = .002$). Specifically, 16 of the 40 adolescents who initiated implant-related follow-up during the 6-month follow-up period did so to discuss removal; 6 of the 16 (37.5%) went on to have their device removed during this time. Among adults, 15 of the 44 who initiated implant-related follow-up discussed removal; 14 of the 15 (93.3%) had their implant removed during the study period. The one adult who did not have a removal had been scheduled for the procedure, but did not present for her appointment. For both groups, bleeding was the most common reason for removal as well as the most common reason for discussing removal. Adolescents who continued the implant after discussing removal did so after either receiving reassurance regarding their concerns (n = 5), not following up for a removal appointment (n = 3), initiating concurrent use of oral contraception to manage bleeding changes (n = 2), or concurrently trialing a new contraceptive method (n = 1).

Table 2. Characteristics and Outcomes of Patient-Initiated Implant-Related Provider Contact in the 6 Months Postimplant Insertion Among Adolescents and Adults Who Had a Contraceptive Implant Inserted at the Institute for Family Health FQHC Network Between January 2011 and June 2013.

	Adolescent (N = 44)		Adult (N = 40)		
Characteristics	n	%	n	%	*P*
Median number of contacts (range)	1	1-5	1	1-5	—
Median number of weeks to first contact (range)	7.5	0-26	9	0-26	—
Contact within 1 week of insertion	9	8.2[a]	2	1.3[a]	.009
Most frequent reasons for patient initiated follow-up contact[b]:					
• Bleeding changes	22	50	20	50	1.00
• Removal discussion	16	36.3	15	37.5	.914
• Wants pregnancy testing	10	22.7	7	17.5	.597
• Arm pain	10	22.7	4	10.0	.235
Removals					
Removal occurred	6	5.5[a]	14	9.0[a]	.348
Median number of weeks to removal (range)	15	4-26	17.5	1-25	—
Most frequent reasons for removal[b]					—
• Bleeding changes	3	50	9	56.3	
• Headache	1	16.7	3	21.4	
• Mood change	1	16.7	2	14.3	
• Hair change	0	0	2	14.3	

Abbreviation: FQHC, Federally Qualified Health Center.
[a]Denominator is among the total number of patients within each group receiving insertions: adolescents, N = 110; adults, N = 154.
[b]The total may not sum to 100% because patients may have had multiple reasons for follow-up and/or removal.

Discussion

This study provides information about postinsertion care seeking by adolescents and adults who had implants placed in an urban FQHC. We found that within our FQHC network during the first 6 months of insertion, the majority of patients continued their method, and that patients younger than 21 years were more likely than older patients to initiate follow-up with a provider due to an implant-related concern, particularly within the first week of insertion. As has been shown in studies in other settings, regardless of age, bleeding changes were the most common side effect prompting our patients to initiate contact postinsertion.[15-19]

Our implant-related contacts and discontinuation rate also aligns with that seen in the literature, further supporting its incorporation in FQHC settings. Prior studies have reported a 6-month implant continuation rate of 83.4%[19] and 94%[20] and a 1-year continuation rate of 83%[2] and 76.8%.[21] The 12-month retrospective chart review by Berlan et al[22] of adolescent girls who received implants in pediatric offices found a 10.3% 1-year discontinuation rate. The mean length of use among those who had removals was 7.5 months, and that the most common reason for discontinuation was bleeding related side effects.[22] Age at insertion among Australian implant users was not associated with continuation rates at 6, 12, and 24 months.[20] Additionally, our findings are similar to those reported in a study of adolescents and adults examining differences in intrauterine device–related follow-up after FQHC-based insertions.[13] In that study adolescents were more likely to initiate contact after insertion in the first 6-months postinsertion, and had removal rates similar to adults.

Our finding that, as compared with adults, adolescents requesting removal were less likely to have the implant removed warrants further exploration. It could due to patient specific issues such as input from parents and social network,[23] different desire for highly effective contraception,[24] willingness to tolerate expected side effects,[25] and/or financial barriers. It may also reflect clinician enthusiasm around adolescent's use of highly effective contraception and the complexities associated with provision of long-acting reversible contraception, which rely on providers for discontinuation.[26] Given the potential limits on reproductive autonomy with implant use, further study of this topic is warranted.

Another unanticipated finding of our study was with regard to patient communication methods postinsertion. While the IFH offers provider contact through an office visit, telephone or messaging through the EMR, the majority of patients returned for an office visit to address their postinsertion issue. Given that the Affordable Care Act has incentivized EMR utilization in FQHCs,[27] future studies may be helpful in determining the proportion of implant-related follow-up concerns that can be equivalently addressed and managed outside of an office visit and through a healthcare messaging portal.

Notably, adolescents from our affiliated SBHC who had per protocol outreach from an AmeriCorps volunteer appear to have higher rate of patient-initiated implant-related visits as compared with non-SBHC affiliated adolescents. While the number of individuals in this category is too few to draw conclusions, potential reasons may be that postinsertion outreach for this population prompts more concerns on the part of the adolescent, or it might support adolescents in seeking clinical input for their concerns.

Our study is framed within the limitations of our methods. Given the retrospective nature of this work, we are unable to determine whether those women who did not have follow-up with the clinic after insertion initiated follow-up or device removal elsewhere. We believe, however, that this is unlikely since many graduated residents who practice locally refer their patients to us and patients have recounted difficulties finding alternative sites for implant insertion and/or removal. As noted earlier, the presence of the follow-up protocol in the high school–affiliated site may have affected rates and reasons for provider follow-up. Additionally, since this is a chart review study, the context for discussions over outcomes such as side effects and removal are also limited by the amount of detail and explanation included in the encounter notes. Finally, the sample size of this study precluded the ability for multivariable analysis comparing adolescents to adults with regard to our outcomes of interest.

Notwithstanding these limitations, our results are the first to detail an FQHC health care delivery setting providing implant insertion, side-effect management, and removal. Bolstered by the Affordable Care Act, FQHCs are poised to expand women's access to all family planning methods, including implants. FQHCs considering expansion of services to include implants can anticipate that the majority of patients will not make an implant-related visit within the first 6 months postinsertion, and that those who do come in will most frequently have a concern about a change in their bleeding. Adolescents may be more likely than adults to contact their provider with an implant related concern and care should be taken to provide adolescents with access to removal, should that be their preference.

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Declaration of Conflicting Interests

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Linda Prine, MD, is a professor of family medicine at Mount Sinai School of Medicine. She is a practicing physician at the IFH, a large FQHC network where she is also the Director of Women's Health. Dr. Prine is a co-founder and medical director of the Reproductive Health Access Project.

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