2023, Volume 55, Issue X, 1-7, e-ISSN 1938-3800

Family Medicine

ORIGINAL ARTICLE

Barriers to and Facilitators of Contraceptive Implant Training in New Jersey Family Medicine Residencies: A Qualitative Study

Stephanie Mischell, MD[a]; Kenya Cabrera, MD[a]; Tiana Acosta[b]; Jeffrey P. Levine, MD, MPH[a]; Anna Sliwowska, MD[a]; Jennifer R. Amico, MD, MPH[a]

AUTHOR AFFILIATIONS:

[a] Department of Family Medicine and Community Health, Rutgers Robert Wood Johnson Medical School, New Brunswick, NJ

[b] Rutgers Robert Wood Johnson Medical School, New Brunswick, NJ

CORRESPONDING AUTHOR:

Jennifer R. Amico, Department of Family Medicine and Community Health, Rutgers Robert Wood Johnson Medical School, New Brunswick, NJ,
jennifer.amico@rutgers.edu

HOW TO CITE: Mischell S, Cabrera K, Acosta T, Levine JP, Sliwowska A, Amico JR. Barriers to and Facilitators of Contraceptive Implant Training in New Jersey Family Medicine Residencies: A Qualitative Study. *Fam Med.* 2023;55(X):1-7.
doi: 10.22454/FamMed.2023.694219

PUBLISHED: 2 August 2023

KEYWORDS: contraceptive implant, family planning, resident training

ABSTRACT

Background and Objectives: The aim of this study was to examine experiences of New Jersey family medicine residents and preceptors with the etonogestrel subdermal contraceptive implant and to explore barriers to and facilitators of training.

Methods: In this qualitative study, we conducted semistructured individual interviews to explore residents' and preceptors' experiences with contraceptive implant procedural training. We invited residents and preceptors from programs with high (5.2–10.9) and low (0.0–0.1) implant procedures per resident to participate. Participants discussed factors that supported or inhibited implant training and provision. We transcribed, coded, and analyzed interviews on a rolling basis. We used memoing to reflect on the data and identify saturation. We developed and refined our codebook using a collaborative, iterative process. We analyzed interviews using deductive and inductive techniques to identify themes.

Results: We interviewed 25 subjects: 14 residents and 11 preceptors from four family medicine residency programs with the highest and lowest implant training numbers. Common barriers included lack of hands-on experience with the procedure, lack of teaching with the procedure, and difficulty scheduling patients. Facilitators included formal training and inclusion of contraception in residency curricula, preceptors' comfort with the procedure, office sessions dedicated to procedures or gynecology visits, and patient familiarity with the implant.

Conclusions: Family medicine residencies provide unique opportunities to impact provision of long-acting reversible contraception (LARC). We identified potential interventions, including formal implant training sessions, dedicated procedure office sessions, stocking of devices in the office, and staff focused on reproductive health that can aid in scheduling, obtaining devices, and setup.

INTRODUCTION

The contraceptive implant (Nexplanon) is an extremely effective long-acting contraceptive placed subdermally in the arm.[1] While the US Department of Health and Human Services recommends increasing access to implants and intrauterine devices (IUDs), together referred to as long-acting reversible contraception (LARC),[2–6] most primary care efforts have historically focused on IUD training.[7–12]

Primary care settings provide contraception to more than 20% of reproductive-age people in the United States, with higher numbers among lower socioeconomic groups.[13] After obstetrician-gynecologists, family physicians are the most likely to provide contraception[8,11,12] and are second to dermatologists in minor skin procedures.[14–16] LARC is within the scope of family medicine, with the Accreditation Council for Graduate Medical Education requiring reproductive health training in residency[17] and both the Society of Teachers of Family Medicine and the American Academy of Family Physicians recommending LARC training for residents.[18,19] Yet, more than half of family physicians do not provide LARC, with residents much more likely to provide LARC than practicing physicians[16] and with implants lagging behind IUDs.[14,15,20] Unlike IUDs, implant provision requires a Food and Drug Administration (FDA)-mandated training completed by all providers, including residents.[21]

Because LARC training in residency is the factor most associated with LARC provision,[7–11] increasing implant training during residency is essential to improving contraceptive access. Our study explored family medicine residents' and preceptors' experiences with, barriers to, and facilitators of contraceptive

implant training. We aimed to identify differences in training structure, and barriers and facilitators to training across four residency programs in New Jersey.

METHODS

Sample and Recruitment

We previously surveyed 15 family medicine residency programs in New Jersey that agreed to participate (out of 18 total New Jersey programs) to identify the mean implant procedures among residents. We emailed residents and faculty at the two programs with the most implant procedures per resident (means of 10.9 and 5.2) and the two programs with the fewest (means of 0.0 and 0.1). We originally invited all residents to participate, but then limited participation to current postgraduate years 2 and 3 (PGY2 and PGY3) to focus on participants with adequate residency experience. We invited family medicine attendings (preceptors) who trained family medicine residents in the outpatient setting at least 3 half days per month. Sampling was continued throughout data analysis until thematic saturation.[22]

Data Collection

We developed a semistructured interview guide, adapted from a previous study about IUD training,[23] which included participants' experiences with implant provision and training, and factors that support or inhibit implant provision in their programs. We explored barriers and facilitators on four levels: clinic, training programs, providers, and patients. Two researchers (S.M. and K.C.), both family physicians with training in qualitative interviewing, conducted interviews via Zoom. Interviews lasted 30 to 60 minutes and were audio-recorded and transcribed. Participants received a $75 gift card. The Rutgers Institutional Review Board approved this study.

Data Analysis

After reviewing the initial transcripts, we collaboratively developed the coding scheme and modified the codebook through an iterative process until complete. Two members of the research team (S.M. and K.C.) coded transcripts using NVivo analytic software.[24] After the first interview, we conducted a rolling analysis of the data and used memoing to reflect on the data and identify thematic saturation for each group. We (S.M., K.C., and J.A.) resolved discrepancies through discussion until reaching consensus. We organized thematic data around the levels described earlier and then listed each barrier and facilitator discussed by each group of participants. We provide quotes illustrative of these barriers and facilitators, shortened here for clarity, but otherwise verbatim.

RESULTS

From the four programs, we interviewed 25 participants, including 14 residents (7 high-volume and 7 low-volume) and 11 preceptors (7 high-volume and 4 low-volume). Demographic characteristics are presented in Table 1. While both high-volume programs provided both IUDs and implants, one low-volume program provided one IUD type and the other did not provide any LARC.

Participants discussed 22 unique barriers and 10 unique facilitators (Table 2). While the categories are not mutually exclusive, we classified the themes as either mostly pertaining to the office logistics, training program structure, provider attitudes, or patient factors.

Office Logistics

Residents and attendings at all programs discussed office logistics, particularly acquiring devices, scheduling appointments, and having a dedicated gynecology or procedure clinic. Difficulty obtaining contraceptive implant devices was a significant theme in all programs. For the high-volume programs, ordering devices created delays in provision, and lack of financial coverage meant that some patients could not access implants.

> We have a lot of uninsured patients . . . it's a money issue. We do have a discount program in our clinic . . . [but] they can't afford [the reduced price]. . . . Even if they do have insurance, we still need it to run by insurance and make sure that it's covered.
>
> *Preceptor, high-volume*

Lack of coverage for implants, including lack of insurance or having insurance requiring buy and bill, was too challenging for the low-volume program that offered hormonal IUDs. Because hormonal IUD funding was available for low-income patients, this was the only LARC option that the program offered.

> So, [LARC training] has been really difficult for both us and the OB/GYN residency program. And it has a lot to do with the buy [and] bill [for LARC]. . . . Fortunately for us, a large number of our patients do have uncompensated care, so they do qualify for the [IUD patient access program].
>
> *Preceptor, low-volume*

Even for patients who had insurance coverage for devices, the inability to stock the devices created barriers to training and prevented same-day care.

> I wish I could do [contraceptive implants] a little more on the spur of the moment. . . . That we could have stuff stockpiled, so if somebody said, yep, this is what I want . . . all right, let's just do it.
>
> *Resident, high-volume*

Scheduling the appointment with a trained preceptor posed another significant barrier. Residents and preceptors noted that not every preceptor is trained for implant procedures, so the potential appointments are limited. Attendings precepting multiple residents would sometimes request a backup preceptor for the LARC procedure. Residents who counseled the

TABLE 1. Demographics

	High-volume residents	High-volume preceptors	Low-volume residents	Low-volume preceptors
Residents (total)	7		7	
PGY1*	1		0	
PGY2	3		6	
PGY3	3		1	
Preceptors (total)		7		4
≤1 year in practice		1		1
2–5 years		1		2
6–10 years		4		1
10+ years		1		0
Pronouns she/her	5	7	6	3
Pronouns he/him	2	0	1	1
Pronouns other	0	0	0	0

One PGY1 was enrolled prior to the decision to limit recruitment to PGY2 and PGY3. Abbreviation: PGY, postgraduate year

patient about the implant would want to perform the implant insertion procedure. These logistic barriers were a deterrent to offering implants.

> [Residents] don't wanna go there. . . . "Oh, shoot, I'm gonna have to talk to the preceptor. And how do I order this? And who's in charge of scheduling it? And who's precepting that day? . . . I wanna do it myself (if I'm a resident), but I'm on night float for the next whatever number of weeks." . . . [They're] being overwhelmed by the logistics of everything in the office.
>
> *Preceptor, high-volume*

High-volume programs reduced some barriers by having gynecology or procedure clinics. These sessions were staffed with one dedicated preceptor, one resident, and one nursing assistant. This arrangement allowed programs to ensure that the appointments were longer, with a trained preceptor, and without other residents to precept simultaneously. The dedicated nursing assistant was trained to set up, assist with the procedure, and acquire devices.

Training Program

Participants discussed factors about their programs that facilitated or inhibited contraceptive implant training. While the dedicated procedure session did not facilitate continuity for the resident who first counseled the patient, it did allow residents to have one-on-one time with preceptors and to repeat the same procedure several times during one session, facilitating learning.

> [Procedure session] faculty . . . watch a video and . . . go over the steps with [the resident] before they go in. . . . I haven't had any residents not do well in terms of removal or insertion, . . . and I think it's probably because of how they're taught, the trainings and also the fact that we do make sure that we answer any questions before we go into the room.
>
> *Preceptor, high-volume*

Residents reported that the timing of these sessions within the course of residency impacted their ability to use these skills during continuity sessions. The COVID-19 pandemic both reduced the number of procedure clinics and delayed outpatient rotations.

Male and female residents noted that female residents had more opportunities to discuss contraception with patients, for a variety of reasons including patient comfort, resident comfort, who patients were scheduled with, and differences in clinical rotation sites for male versus female residents in one program.

Participants discussed how workshops, didactics, and models improved their knowledge and comfort with contraceptive implants, but low-volume residents noted that didactics de-emphasized methods not provided in the practice.

> We do have a lecture. . . . Because we're not putting them in, it may not be as in-depth [about implants]. We do talk a lot more about oral contraceptives, how to switch, . . . about [injectables] and IUDs.
>
> *Resident, low-volume*

Provider Factors

Provider perspectives about and comfort with contraceptive implants largely impacted training opportunities at all programs. Attendings' comfort with contraceptive implants varied widely between the high-volume and low-volume programs. The attendings at low-volume programs discussed discomfort with implant procedures while the high-volume attendings described implant procedures as easy. Low-volume program residents noted that preceptor discomfort and reluctance to offer contraceptive implants were among the greatest barriers

TABLE 2. Barriers and Facilitators to Contraceptive Implant Care

Barriers	Group A—resident, high-volume program	Group B—preceptor, high-volume program	Group C—resident, low-volume program	Group D—preceptor, low-volume program
Difficulty scheduling appointments		X	X	X
Accessing devices: cost		X	X	X
Accessing devices: logistics	X	X	X	X
Trained staff			X	
Patients accessing care in other clinics			X	X
Lack of preceptor comfort			X	X
Lack of preceptor knowledge	X		X	X
Coverage of precepting sessions			X	X
Limited availability for procedures (lack of dedicated clinic, lack of time)			X	X
Lack of formalized hands-on training			X	X
Contraceptive care didactics missing implant			X	X
Gender-specific training opportunities			X	
Missed opportunities to discuss contraception		X	X	X
Uncertain of logistics/relative ease of other options		X	X	X
Knowledge barriers (uncertainty or inaccurate information)	X	X	X	X
Patient preference bias	X			X
Perceived lack of interest/awareness from patients		X	X	X
Patient discomfort with arm implant	X			
Patient preference for female provider			X	X
Few reproductive-age female patients on panel				X
Adolescent-specific barriers (navigating parents, discomfort discussing with adolescents)	X			X
Pandemic impact on clinic		X	X	X
Facilitators				
Patient interest and satisfaction	X	X		
Resident interest in implant care	X	X	X	
Provider interest in discussing contraception	X	X		
Support people/champion for implant procedures	X	X		
Access to devices (stocking, insurance coverage)	X			
Trained staff	X			
Dedicated GYN/procedure clinic	X	X		
Preceptor comfort	X	X		
Dedicated workshop	X	X		
Opportunities for procedure experience	X	X		

Abbreviation: GYN, gynecology

https://doi.org/10.22454/FamMed.2023.694219

to training and impacted their likelihood to provide contraceptive implants in the future.

> I think it's difficult when the attending is not comfortable doing these things. . . . As a primary care physician, there's so much that you can choose to do. . . . If that's not something that they do, it's just going to be difficult to offer it.
>
> *Resident, low-volume*

Low-volume program providers discussed not mentioning the contraceptive implant option because they could not provide it. Considering the best interest of their patients, sometimes they omitted this option because they believed their patients could not access it, and they wanted to offer methods with fewer barriers. Other times, participants avoided discussing the implant because other methods were easier to initiate.

> I recommend the oral contraceptives for everybody first, because that's without doubt, the easiest to start. And it doesn't mean that it's the most effective, or easiest to continue.
>
> *Preceptor, low-volume*

Participants described various practices for initiating conversations about contraception with patients. High-volume preceptors reported discussing contraception routinely with their patients, while low-volume participants discussed covering contraception only if patients asked.

> We don't normally just ask, are you interested in birth control, unless a patient tells us that they're sexually active, looking for options. . . . It's not something that is just brought up.
>
> *Resident, low-volume*

High-volume preceptors stressed the importance of teaching residents to bring up family planning, though noted that sometimes their learners struggled to initiate these conversations.

> The single most common thing with residents . . . when a patient says something, and you think, man, there is your opportunity [to discuss contraception] and it's missed . . . because someone is worried about time and doesn't wanna bring it up. . . . I don't know if it's missed because you're worried about other things. . . . I don't know if it's missed because you don't know how to bring it up.
>
> *Preceptor, high-volume*

Attendings and residents reported inaccurate information about contraceptive implants. Low-volume participants described knowing little about it. Those from high-volume programs cited more medical inaccuracies, believing that more patients were ineligible for the implant, such as those with higher body mass index or with contraindications to estrogen. Sometimes residents reported that their preceptors required additional testing to rule out pregnancy for patients who already met the standard of care for implant insertion, leading to delays in care.

Preceptor enthusiasm for the implant appeared to result in barriers to implant removal. Attendings reported encouraging patients to continue the contraceptive implant rather than remove it. Many providers described implant removal as undesirable, particularly for patients without explicit plans to conceive.

> The first question is, why do you want it removed? . . . If it's because of irregular or excessive bleeding, then I certainly wouldn't just immediately take it out. . . . I would do birth control pills for a cycle.
>
> *Preceptor, high-volume*

Perceived Patient Perspectives

Participants described various patient attitudes toward contraceptive implants. Low-volume providers reported low patient awareness of the method, with some connecting low awareness with lack of availability. In contrast, high-volume providers reported that patients requested implants, and they detailed patient characteristics impacting their interest and satisfaction. High-volume providers reported that patients believed the implant was an easy procedure and easy to maintain, but that bleeding effects were either a deterrent to use or the main reason why patients would be dissatisfied with the method.

> I think initially . . . it just seemed like I had more patients that were coming back with the bleeding complaints. I really try to emphasize with the residents, when you counsel them, you have to let them know they're going to spot.
>
> *Preceptor, high-volume*

Providers often reported patients choosing an implant versus an IUD because of the device location. Some reported that patients disliked the implant's location in the arm. Other providers mentioned patient preference for the arm instead of the uterus, especially for younger patients less experienced with gynecologic procedures.

> [Implant patients] are the ones that are looking for, "not something I have to do on a regular basis," but "the procedure of an IUD seems scary to me." The younger kids who haven't had a Pap yet, they're just not all that comfortable with that kind of procedure. . . . [The contraceptive implant] is a much more palatable option.
>
> *Resident, high-volume*

Providers also reported that younger patients preferred contraceptive implants, either due to higher awareness or more openness to suggestions. Some providers preferred younger patients to use LARC methods in general and preferred implants over IUDs for nulliparous patients.

> I try to talk to [younger patients] about LARC. With them, I don't recommend IUD, because I feel like or I've been told that the nulliparous uterus is not as suitable for an IUD device.
>
> *Resident, high-volume*

Some providers suggested that race or ethnicity was a factor in patient interest in the contraceptive implant, specifically among Hispanic patients. Providers suggested that patient interest in the contraceptive implant may be culturally mediated, though varied on whether they perceived patients' interest increasing or decreasing from cultural conceptions. Providers mentioned race when discussing the patients with whom they are more or less likely to bring up implants. The following quote also highlights racial biases about who should get the most effective methods of contraception.

> I think [the contraceptive implant] is a great method, especially for a lot of our patients who happen to be of the Hispanic population, and a lot of them are hesitant about IUDs. There's just the stigma against them within that population. . . . I think it's just cultural.
>
> *Resident, high-volume*

CONCLUSIONS

This qualitative study of 25 family medicine residents and preceptors described barriers and facilitators of contraceptive implant training at four residency programs in New Jersey. Participants identified barriers that can be addressed to enhance training and identified facilitators that can be implemented at similar programs. Low-volume programs identified more barriers than high-volume programs; conversely, high-volume programs identified more facilitators than low-volume programs (Table 2). In alignment with IUD literature, access to devices, provider knowledge, and comfort with the procedure were key enablers to provision.[23]

Addressing Medicaid reimbursement policy for contraceptive implants may be a high-yield first step to impact family medicine implant training in states using the buy and bill system, which requires health centers to pay for devices upfront in bulk and get reimbursed (sometimes months or years later).[25] This disproportionately impacts primary care systems, which provide LARC at much lower numbers than specialty providers. This is illustrated by the low-volume program that successfully provided IUDs, because the inability to use insurance coverage up front for implants was insurmountable. Because family physicians are more likely to care for uninsured and publicly insured patients,[26] lack of access to devices in residency training clinics may disproportionately reduce access to implants for low-income patients.

Based on our findings, we suggest additional changes that residency programs can implement to enhance contraceptive implant training. The high-volume programs navigated logistical barriers of obtaining devices by having designated office staff to champion paperwork and device ordering. Additionally, attendings taught norms about when to initiate conversations about contraception; high-volume providers seemed to bring up contraception more often, likely resulting in more opportunities to provide it. Knowledge gaps in both high- and low-volume programs may be improved by participation in the FDA-mandated training program and inclusion of the contraceptive implant in didactics and hands-on dedicated procedure time.

Provider bias toward LARC, as well as age and racial and ethnic stereotypes such as those displayed by study participants may impact patient access and outcomes. The contradicting comments about Hispanic patients' preferences reflected both harmful assumptions about a diverse group of patients and an incorrect attribution to culture; provider bias was the contributing factor to inequitable contraceptive access. Our study revealed a bias toward LARC generally as well as racial stereotypes about who should use the most highly effective methods. Historically, biases like these have led to reproductive coercion, from forced sterilization of Black, Indigenous, and People of Color to use of implants as a requirement for welfare benefits.[27,28] Acknowledging these biases is essential in order to address them. Family medicine residencies can use resources such as the Reproductive Health Access Project (RHAP) and the Center for Reproductive Health Education in Family Medicine (RHEDI) to strengthen LARC training through the lens of reproductive justice and antiracist care.[29,30]

This study was limited to the perspectives of residents and attendings at four residency programs in New Jersey, influenced by social desirability bias and inclusion of self-selected participants, and based on a small sample size. Further, generalizability is inherently limited in qualitative studies. We based program selection on self-reported procedure numbers; actual procedure numbers may differ. We recruited fewer faculty from low-volume sites, perhaps reflective of low interest among those faculty. Our selection of one low-volume site that provided IUD training likely caused us to encounter different barriers between the two low-volume programs. Finally, resident participants were impacted by the COVID-19 pandemic, so prepandemic perspectives may have differed.

Contraceptive implant training during residency is necessary for family physicians to provide this method. Barriers that impact contraceptive training in family medicine have implications for equity in reproductive autonomy. All patients deserve medically accurate, accessible, and autonomy-driven contraceptive counseling, and this bias may contribute to injustices in contraceptive care. In this era of abortion bans following the reversal of Roe v Wade, reproductive autonomy is especially threatened. By strengthening contraceptive education, residencies can address these injustices.

Financial Support

Supported in part by a research grant from the Investigator-Initiated Studies Program of Organon. The opinions expressed in this paper are those of the authors and do not necessarily represent those of Organon.

Presentations

Preliminary data from this work was presented at the Society of Teachers of Family Medicine 2021 and 2022 Annual Meetings (virtual) and the New Jersey Academy of Family Physicians 2021 and 2022 Resident Poster Sessions.

Disclosures

Dr Levine is a Certified Nexplanon Trainer for Organon. Dr Amico is a consultant for Organon and for Medicines360.

REFERENCES

1. Curtis KM, Tepper NK, Jatlaoui TC. Medical Eligibility Criteria for Contraceptive Use. *MMWR Recomm Rep.* 2016;65(3):1-103.
2. Gavin L, Pazol K. Update: providing quality family planning services-recommendations from CDC and the U.S. Office of Population Affairs. *Morb Mortal Wkly Rep.* 2015;65:231-234.
3. American College of Obstetricians and Gynecologists. Practice bulletin no. 121: long-acting reversible contraception: implants and intrauterine devices. *Obstet Gynecol.* 2011;118(1):184-196.
4. The American College of Obstetricians and Gynecologists. Committee opinion no. 539: adolescents and long-acting reversible contraception: implants and intrauterine devices. *Obstet Gynecol.* 2012;120(4):983-988.
5. Gilliam ML, Martins SL, Bartlett E, Mistretta SQ, Holl JL. Development and testing of an iOS waiting room "app" for contraceptive counseling in a Title X family planning clinic. *Am J Obstet Gynecol.* 2014;211(5):481.
6. Kavanaugh ML, Jerman J, Ethier K, Moskosky S. Meeting the contraceptive needs of teens and young adults: youth-friendly and long-acting reversible contraceptive services in U.S. family planning facilities. *J Adolesc Health.* 2013;52(3):284-292.
7. Schubert FD, Herbitter C, Fletcher J, Gold M. IUD knowledge and experience among family medicine residents. *Fam Med.* 2015;47(6):474-477.
8. Thompson CM, Broecker J, Dade M, Nottingham K. Influences on intentions to place long-acting reversible contraceptives: A pilot study comparing according to provider specialty in Ohio. *J Pediatr Adolesc Gynecol.* 2018;31(5):509-515.
9. Ouyang M, Peng K, Botfield JR, Mcgeechan K. Intrauterine contraceptive device training and outcomes for healthcare providers in developed countries: A systematic review. *PLoS One.* 2019;14(7):219746.
10. Herbitter C, Greenberg M, Fletcher J, Query C, Dalby J, Gold M. Family planning training in US family medicine residencies. *Fam Med.* 2011;43(8):574-581.
11. Lunde B, Smith P, Grewal M, Kumaraswami T, Cowett A, Harwood B. Long acting contraception provision by rural primary care physicians. *J Womens Health.* 2014;23(6):519-524.
12. Sridhar A, Forbes ER, Mooney K, Rible R. Knowledge and training of intrauterine devices among primary care residents: implications for graduate medical education. *J Grad Med Educ.* 2015;7(1):9-11.
13. Hall KS, Patton EW, Crissman HP, Zochowski MK, Dalton VK. A population-based study of US women's preferred versus usual sources of reproductive health care. *Am J Obstet Gynecol.* 2015;213(3):352.
14. Nisen MB, Peterson LE, Cochrane A, Rubin SE. US family physicians' intrauterine and implantable contraception provision: results from a national survey. *Contraception.* 2016;93(5):432-437.
15. Chelvakumar M, Jabbarpour Y, Coffman M, Jetty A, Shaw G, J. Long-acting reversible contraception (LARC) provision by family physicians: low but on the rise. *J Am Board Fam Med.* 2019;32(1):10-12.
16. Coutinho AJ, Cochrane A, Stelter K, Phillips RL, Peterson LE. Comparison of intended scope of practice for family medicine residents with reported scope of practice among practicing family physicians. *JAMA.* 2015;314(22):372.
17. ACGME program requirements for graduate medical education in family medicine. *Accreditation Council for Graduate Medical Education.* 2022. https://www.acgme.org/globalassets/pfassets/programrequirements/120_familymedicine_2022.pdf.
18. Nothnagle M, Sicilia JM, Forman S. Required procedural training in family medicine residency: a consensus statement. *STFM Group on Hospital Medicine and Procedural Training.* 2008;40:248-252.
19. American Academy of Family Physicians. Recommended curriculum guidelines for family medicine residents: women's health and gynecologic care. *AAFP Reprint.* 2018. https://www.acgme.org/globalassets/pfassets/programrequirements/120_familymedicine_2022.pdf.
20. Patel P, Narayana S, Summit A. Abortion provision among recently graduated family physicians. *Fam Med.* 2020;52(10):724-729.
21. Nexplanon (package insert). *Organon.* 2015.
22. Fusch PI, Ness LR. Are we there yet? data saturation in qualitative research. *The Qualitative Report.* 2015;20(9):416.
23. Rubin SE, Davis K, Mckee MD. New York city physicians' views of providing long-acting reversible contraception to adolescents. *Ann Fam Med.* 2013;11(2):130-136.
24. NVivo, Version 12 (software program). 2012. .
25. Romero L, Sappenfield OR, Uesugi K. Review of publicly available state policies for long-acting reversible contraception device reimbursement. *J Womens Health.* 2022;31(7):48-49.
26. Grumbach K, Hart LG, Mertz E, Coffman J, Palazzo L. Who is caring for the underserved? A comparison of primary care physicians and nonphysician clinicians in California and Washington. *Ann Fam Med.* 2003;1(2):97-104.
27. Roberts D. *Killing the Black Body*. Vintage Books; 2000. .
28. Watkins ES. From breakthrough to bust: the brief life of Norplant, the contraceptive implant. *J Womens Hist.* 2010;22(3):88-111.
29. Reproductive Health Access Project. 2023. https://www.reproductiveaccess.org/.
30. Mainstreaming abortion in family medicine. *RHEDI.* https://rhedi.org.