Contraceptive Procedures in Internal Medicine Clinics and Resident Education: a Qualitative Study of Implementation Methods, Barriers, and Facilitators

Rachel S. Casas, MD, EdM[1], Christine A. Prifti, MD[2], Alexandra E. Bachorik, MD, EdM[2], Heather Stuckey, MEd, DEd[1], Mindy Sobota, MD, MS, MPhil[3], Cynthia H. Chuang, MD, MSc[1,4], and Carol S. Weisman, PhD[4]

[1]Division of General Internal Medicine, Penn State Health Milton S. Hershey Medical Center, Academic Support Building, 90 Hope Drive, Suite 3200, Mail Code A320, Hershey, PA, USA; [2]Section of General Internal Medicine, Boston University Medical Center, Boston, MA, USA; [3]Division of General Internal Medicine, Rhode Island Hospital, Providence, RI, USA; [4]Department of Public Health Sciences, Pennsylvania State University, Hershey, PA, USA.

BACKGROUND: Long-acting reversible contraceptives (LARCs) such as intrauterine devices (IUDs) and implants are highly effective and increasingly popular. Internal Medicine (IM) clinics and residency curricula do not routinely include LARCs, which can limit patient access to these methods. In response, internists are integrating LARCs into IM practices and residency training.

OBJECTIVE: This study examines the approaches, facilitators, and barriers reported by IM faculty to incorporating LARCs into IM clinics and resident education.

DESIGN: We interviewed faculty who were prior or current LARC providers and/or teachers in 15 IM departments nationally. Each had implemented or attempted to implement LARC training for residents in their IM practice. Semi-structured interviews were used.

PARTICIPANTS: Eligible participants were a convenience sample of clinicians identified as key informants at each institution.

APPROACH: We used inductive thematic coding analysis to identify themes in the transcribed interviews.

KEY RESULTS: Fourteen respondents currently offered LARCs in their clinic and 12 were teaching these procedures to residents. LARC integration into IM clinics occurred in 3 models: (1) a dedicated procedure or women's health clinic, (2) integration into existing IM clinical sessions, or (3) an interdisciplinary IM and family medicine or gynecology clinic. Balancing clinical and educational priorities was a common theme, with chosen LARC model(s) reflecting the desired priority balance at a given institution. Most programs incorporated a mix of educational modalities, with opportunities based upon resident interest and desired educational goals. Facilitators and barriers related to clinical (equipment, workflow), educational (curriculum, outcomes), or process considerations (procedural volume, credentialing). Participants reported that support from multiple stakeholders including patients, residents, leadership, and other departments was necessary for success.

CONCLUSION: The model for integration of LARCs into IM clinics and resident education depends upon the clinical resources, patient needs, stakeholder support, and educational goals of the program.

KEY WORDS: contraception; women's health; graduate medical education; internal medicine.

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BACKGROUND

Almost half of US pregnancies are unintended.[1] Women with chronic diseases are at higher risk for complications in the event of unintended pregnancy and seek primary care predominantly with Internal Medicine (IM) or Family Medicine (FM) clinicians compared to obstetricians and gynecologists (OB/GYNs).[2] Additionally, a subset of women may prefer having reproductive health services in IM or FM settings compared to specialty settings.[3] Thus, prevention of unintended pregnancy is an essential element of comprehensive primary care provided by general internists.

Long-acting reversible contraceptives (LARCs), including intrauterine devices (IUDs) and implants, are readily reversible, highly effective, and increasingly popular among women not desiring pregnancy. These methods are considered safe in the setting of many chronic medical conditions and are recommended as first-line contraception in appropriate patients.[4,5] However, placement and removal of the device into the uterus (IUD) or arm (implant) requires an in-office procedure with a trained clinician.

Despite the importance of contraception in primary care, most IM clinicians are not prepared to provide LARC counseling, placement, or removal. While contraceptive training is standard for FM and OB/GYN physicians, prior studies show that IM physicians have inadequate training in contraceptive counseling and procedures.[6–9] LARC training has been associated with the intention to provide or provision of these services by FM, OB/GYN, and general practice clinicians, and with reductions in unplanned pregnancy rates.[10–15] To

ensure that women who seek primary care in IM settings are offered all contraceptive options when desired, general internists must be prepared to counsel and refer patients for these services, and in some cases, provide LARCs themselves.[16,17]

In response to these needs to increase comprehensive contraceptive access, IM programs nationally have integrated LARCs into their clinics and residency curricula. To date, Brigham and Women's Hospital has published a model of a specialized family planning clinic within an IM clinic setting.[16] Similar programs have been introduced nationally, but there is no existing literature outlining approaches, barriers, and facilitators. This national, qualitative study examines the factors contributing to successful and unsuccessful integration of LARCs into IM clinics and resident education.

METHODS

Overview

This qualitative study used inductive thematic coding to analyze the experiences of IM faculty who have integrated or attempted to integrate LARCs into their clinics and residency education. This study was approved by the Institutional Review Boards at the Pennsylvania State University and Boston University Medical Center.

Goal/Objectives

This study describes existing programs that have successfully or unsuccessfully incorporated LARCs into IM clinics and residency education. We report the (1) approaches to integrating LARCs into IM clinics and resident education, (2) advantages and disadvantages of different approaches, and (3) barriers and facilitators to implementation.

Participants, Eligibility Criteria, and Recruitment

Eligible participants were a convenience sample of clinicians (physician or advanced practice clinician) working in IM clinics at US academic institutions who independently performed LARCs following residency/fellowship training. Participants could be prior or current LARC providers and/or teachers at the time of the study who had implemented or attempted to implement LARC training for residents in their IM clinic. We included faculty who were unsuccessful in attempts to incorporate LARCs to capture their encountered barriers.

We identified eligible participants through (1) personal communication with known LARC providers, (2) a list of LARC providers compiled by a study author (MS) from the Society of General Internal Medicine (SGIM), (3) online messaging to the SGIM Women's Health Education Interest Group, (4) a published women's health residency directory, and (5) snowball sampling from interviewed faculty.[18] Through these sources, we identified potential key informants from 31 institutions who were emailed to confirm if they met eligibility criteria. Faculty from 7 institutions were excluded (2 because all eligible faculty were involved in this study and 5 due to lack of attempted LARC training for residents in their IM clinics). Faculty at an additional 3 institutions were non-responders (eligibility undetermined). The remaining 21 eligible faculty, each at a separate institution, were invited for an interview. Fifteen faculty completed interviews and 6 did not.

Instrument Development

The research team developed a semi-structured interview guide prior to study initiation focused on participants' approaches and perceived facilitators and barriers to implementing LARCs into clinics and/or residency education (Appendix 1). We developed this guide based upon available literature, the personal experience of study authors (AB, MS, RC, and CP) at six institutions (Brigham and Women's Hospital, Rhode Island Hospital, Penn State Health Milton S. Hershey Medical Center, Massachusetts General Hospital, Oregon Health & Sciences University, and Boston Medical Center), and informal conversations with additional faculty.[16] We asked participants for demographic information about their careers and programs.

Data Collection

Eligible participants were invited to participate in a one-on-one, 45-min, audio-recorded phone interview with one of three study authors (RC, AB, or CP). Non-responders were sent two additional, weekly emails. Consent was emailed and reviewed at the start of each interview. Interview participants were eligible for a $20 gift card.

Data Analysis

We followed the Framework Method for thematic analysis.[19] Audiotapes of interviews were transcribed verbatim with all identifiers removed. We then read the transcripts line-by-line to identify relevant codes representing voiced concepts. Three investigators (RC, AB, and CP) independently coded three transcripts and developed the initial list of coding categories by consensus. Additional transcripts were independently coded by the three investigators with modifications to the codebook until an interrater reliability reached a kappa score of 0.7 for three interviews. All interviews were subsequently analyzed using the finalized codebook (Appendix 2) using NVivo 12 (QSR). We then collaboratively developed representative themes using inductive thematic coding. Demographics were reported using descriptive statistics.

RESULTS

Participant and Residency Characteristics

Fifteen IM clinicians were interviewed (14 physicians and 1 nurse practitioner). All participants were female and were on faculty for an average of 5.5 years (range 1 to 10 years). Fourteen performed LARCs in their current clinical practice

and 12 taught LARCs to IM residents (9 implants and IUDs; 3 implants only). Participants most commonly received LARC training during residency or fellowship by FM and/or OB/GYN clinicians in longitudinal continuity clinics and/or women's health electives.

The represented programs were in urban (*N*=14) and suburban (*N*=1) settings. Of these programs, 11 had a primary care track and 4 had both primary care and women's health tracks. The number of IM faculty trained in LARCs per institution ranged from 1 to 5.

Models for LARC Integration into IM Clinical Practice

The main reported approaches to integrate LARCs into IM clinical practice were through (1) a dedicated procedure or women's health clinic (procedures are scheduled during particular session(s)), (2) integrating procedures into existing clinical time (procedures are scheduled during any available slot with LARC provider), or (3) an interdisciplinary IM and OBGYN/FM clinic (clinicians from multiple departments work in the same space). Each model has different advantages and disadvantages from a clinical and educational standpoint (Table 1), and efforts to balance the needs of both patients and residents were a common theme.

Models for LARC Integration into IM Residency Curricula

Most of the 12 programs that were teaching LARCS to IM residents used a curriculum model that incorporated a mix of educational modalities, with opportunities based upon resident interest and the desired goals and outcomes for the program (Table 2). Educational modalities included manufacturer implant training, simulation workshops, didactics, electives, and second site/longitudinal clinics. All represented programs trained residents in IM clinics, with half providing additional experiences in external clinics (OBGYN/FM/family planning). Programs that aimed for trainee exposure to comprehensive contraception counseling had all residents rotate through a clinic with LARCs at least once (*N*=2). Programs aiming for proficiency in LARCs by graduation offered experiences with a higher volume of procedures for few residents (*N*=5). Multiple outcomes were possible with a tiered model that offered a baseline experience for all residents and elective experiences for residents with more interest (*N*=5).

Most programs did not assess procedural proficiency in LARCs (*N*=8). The remaining programs used direct observation (some using a rubric) and/or resident self-assessment of skill. The goal number of insertions and removals ranged from 3 to 30 for implants and 7 to 40 for IUDs. No programs used measures for program evaluation or clinical outcomes.

Three programs had at least one resident who provided LARCs independently following graduation. These programs had been training residents in LARCs for 4 to 10 years. All three of these programs focused on training a small number of residents with a high volume of LARCs through longitudinal clinics and/or electives and offered opportunities inside and outside of IM. Two of the three programs had an integrated IM/GYN clinic with at least four IM faculty available for precepting. All three of these programs had primary care tracks and two had women's health tracks.

Barriers and Facilitators to LARC Integration into IM Clinical Practices and Residency Curricula

Barriers and facilitators to integrating contraceptive procedures into IM clinics and residency curricula involved process considerations (Table 3) and stakeholder perceptions (Table 4).

Process considerations were clinical, educational, or both (Table 3). The most commonly cited clinical facilitators were ease of access to equipment and efficient workflows. Main educational facilitators included having a curricular or assessment model to reference. Procedural volume and credentialing considerations were important to maintain the skills of existing preceptors and to train new clinicians. Participants recognized

Table 1 Advantages and Disadvantages of LARC Integration Models into IM Clinical Practice

Models	Advantages	Disadvantages	Key quotes
Dedicated IM procedure clinic	• Time-efficient educational experience • Easier to build into resident schedule • More likely to have trained staff and equipment available	• Less flexibility and potentially longer wait time for patients • Need to fill appointments when procedures are not scheduled	"How do we ensure that there's enough people that are placing so that the patients can get LARCs? And not have to go through these extra hurdles of coming to a dedicated LARC clinic? I think there's just a real tension between what's best for training and what's best for patient access."
Integrated procedures into IM clinic	• Flexibility of scheduling for patients • More likely to provide point-of-care LARCs	• Difficulty coordinating with residents' schedules • Inefficient educational experience	"I think there's a tension, right? Do you have a pager for them [residents] or do you just sort of do the same day LARC for the patients who decide they want it? And I think the latter is certainly better for patient access. But it's not as good for training."
Interdisciplinary IM and OBGYN/FM	• Close proximity for coordinating care and troubleshooting with non-IM provider • More available clinicians for procedure access and precepting	• Complex implementation across multiple departments	"We have GYN with a family planning group inside our clinic... I had someone a few weeks ago I couldn't get their Nexplanon out in the clinic…even if we are having a problem, we can usually grab a GYN."

Table 2 Curricular Models Including LARCs Based upon Desired Outcomes

Implementation	Goals/outcomes	Key quotes
Limited exposure for all IM residents	Meeting IM residency competencies for contraceptive knowledge and skills	"You can counsel a patient a lot more confidently if you understand what the procedure is like, than if it's just this abstract thing that happens in gynecology. That's really where I put more of our focus for our trainees, on feeling comfortable with discussing this with patients"
In-depth exposure for limited IM residents	Proficiency in contraceptive procedure placement	"One of my residents knew that she wanted to be a women's health provider at a small community clinic that did not do LARCs… so she got about 30 to 40 IUDs under her belt her third year, so that she could feel comfortable doing them".
Tiered model with different levels of exposures	Individualized based upon resident interest and projected future clinical needs	"Most of the time the primary care residents really just care about providing really good counseling and being able to talk to their patients about methods... I'd say like one out of ten is really excited about having procedure-based family planning… so we focus much more on procedure learning."

having connections from an outside department as a facilitator across multiple process categories.

LARC integration in IM required support from multiple stakeholders including patients, residents, clinicians, and leadership (Table 4). Some participants had the benefit of an advocate, while others felt alone in the process of navigating competing professional, clinical, and educational obligations. Participants varied in their approach for support, some seeking buy-in from their wider institution, while others focused efforts on their direct leadership. Participants reported that multiple stakeholders showed disinterest in LARCs or perceived that these procedures were not within the realm of IM. Importantly, patient preference for the location of LARCs was cited as both a facilitator and barrier.

Table 3 Barriers and Facilitators to Integrating LARCs into IM Clinical and Educational Settings

Theme	Facilitators	Barriers	Key quotes
Clinical process considerations			
Equipment	• Designing equipment kits/tray • Close proximity to FM/GYN to borrow equipment	• Ordering and stocking supplies • Access to equipment	"When we're in our huddle and I say, 'Well, this patient is going to be coming in for a Nexplanon insertion. Can you have the tray ready?' Then that's a very smooth process."
Workflow	• Dedicated procedure visits • Longer appointment times • Precedent of other procedures in IM clinic • Huddle with staff • Administrative scheduling support	• Inefficient procedure set-up • Lack of control over appointment timing/duration • High no-show rates • Lack of staff training	"We aren't really staffed for procedures at all…we have rapid access to other parts of the organization who can do it and who have the kits right there and the LPNs or MAs who are right there."
Financial and liability	• Funding/salary support for education or quality improvement projects	• Billing and prior authorization process • Meeting RVU targets • Concern for higher complication rate than non-IM providers • Malpractice coverage	"It was like a, we'll let you do this if it's something you really care about, but it's not really financially what is in the best interests of our practice."
Educational process considerations			
Implementation	• Residents excused from other clinic obligations for procedures • Access to simulation training • Analogous educational structure in FM/OBGYN	• Travel to other sites • Lack of standardization for LARC training • Lack of trained preceptors in IM/continuity clinic • Competing with other learners	"The other challenge is that there is more, I think, there are more people who are interested in learning this, then there are opportunities to learn this. There's just a lot of competition for space for learners"
Outcomes	• Model for assessment from another department/institution	• Unclear definition of proficiency • Lack of experience with more challenging cases	"Do numbers equal proficiency? I think it's less specific to LARC but just the way that we evaluate procedural proficiency, in general, as internists."
Clinical and educational process considerations			
Maintaining procedural volume	• Other departments indifferent to loss of procedure volume • Rotating in higher volume clinics outside IM	• Low numbers of referrals • Patients scheduled in other clinics • Low percentage of reproductive-age women in practice	"My strong sense is that our local family medicine and OBGYN colleagues do not begrudge us the contraceptive procedures…I guess when they feel like they have less clinical volume than they would like, maybe it becomes a bigger issue."
Credentialing	• Existing credentialing model in another department/institution • No credentialing requirement in IM	• Lack of model for credentialing • Needing to be signed-off by non-IM clinician • Insufficient volume to maintain skills of preceptors/trainees	"From an educational opportunity, cost perspective, it is hard sometimes to in good faith support residents developing these skills without really being able to promise them that they'll be able to be credentialed in their future career."

Table 4 Participant Identified Stakeholder Perceptions about LARCs in IM Clinical and Educational Settings

Stakeholder	Facilitators	Barriers	Key quotes
Preceptor/LARC clinicians	• Dedicated time to teach • Professional development in teaching procedures • Ability to train additional preceptors	• Lack of back up for managing complications and/or precepting • Competing professional responsibilities	"I have to be 100% the one pushing for it [contraceptive procedures] all the time and continuing to push for it because it's completely independently led."
Residents	• Engaged residents seeking and promoting LARC training	• Lack of interest due to career trajectory • Discomfort with pelvic exams and contraceptive counseling	"So I think that this work really got off the ground because there were two residents who are very, very motivated…and really made it happen, and had the time blocked out to be able to see the project through."
IM clinicians and department	• Recognizing IM LARC clinicians as available resource	• Concern of managing LARC follow-up calls • Historical referral to OB/GYN	"Every opportunity I could I would speak to the wider group of general internists about contraception…So whenever I'm precepting the residents I somehow bring it all back to family planning."
Clinical leadership and staff	• Support clinical resources and time for procedures • Interest in increased contraceptive access	• Lack of understanding of LARC training process • Concern for patient safety and experience	"While I don't think it's terribly important to my clinic administration that I do this, I think that they feel like it's important to them that they retain me...you have to have their support."
Inter-departmental/ institutional	• Promoting inter-departmental connections • Institutional support of contraceptive access/education	• Frustration of other departments with loss of procedure volume • Opposition to pharmaceutical reps	"I stepped on a few toes as far as the OB/GYN department and they felt like maybe they were going to have fewer patients than me…I think what ended up fixing that concern was more just face time."
Residency leadership	• Leadership receptive to resident input/needs • Focus on primary care	• Perception that LARCs not high yield training in IM	"There was concern that it maybe wasn't high yield to train residents because maybe residents didn't know what their future career was going to look like."
Patients	• Preference for having LARCs in IM clinic	• Preference for non-LARC contraceptives, non-resident for procedure, or LARCs outside of IM clinic	"From a patient perspective there's something nice about having a clinician that you know and you have worked with before... but I think even just being able to come to the same clinic space…has been somewhat helpful to patients'

Participants Not Teaching Contraceptive Procedures to Residents

Three participants were not teaching LARCs to IM residents, with two still providing LARCs in their clinical practice. One participant worked in an adolescent medicine clinic which focused on training fellows only to preserve training volume. In another program, residents did not perform IUDs due to concerns about exam skills. The remaining participant cited a lack of administrative support and easy patient access to OB/GYN.

DISCUSSION

This study examined the experiences of 15 IM faculty in integrating or attempting to integrate LARCs into their clinics and residency education. The model for this integration at each institution depended upon clinical resources, patient needs, stakeholder support, and educational goals. While programs took different approaches reflecting these factors, successful LARC integration filled a patient care need and benefitted from individual champions and institutional support. Programs that successfully trained residents for independent LARC practice focused on high-volume training for a small number of residents. Even in successful programs, defining and achieving LARC proficiency remained challenging.

We recommend that IM faculty who are building LARC training opportunities consider the following questions regarding clinical needs, stakeholder support, and educational goals in considering which models are the best fit for their program:

Assess clinical needs and resources:

Are patients satisfied with current access to LARCs in your healthcare system?

Do you have access to the resources necessary to provide high-quality LARCs in your clinic?

LARC integration into IM clinics may not be appropriate or feasible in all contexts. When patients have easy access to LARCs outside of IM, there may not be a care gap to fill. Patient preference is also an important consideration, as some patients may prefer coming to their IM clinician's office for these procedures. IM clinicians offering LARC must provide high-quality care comparable to clinicians in FM and OBGYN; this care depends not only on clinician expertise, but also appropriate equipment and workflows (Table 3).

Recruit support from stakeholders:

Who are the "champions" of LARCs at your institution?

How could you build support to provide LARC training?

Successful implementation of LARC into IM practice and education requires a "champion" who deliberately seeks stakeholder support. In this study, "champions" were either faculty or trainees and required support from multiple levels of stakeholders (Table 4). While some study participants were fortunate that their priorities were shared by leadership, this was not

universal. Reported approaches in building support included seeking funding for education innovations, building a reputation as a women's health expert, and developing reciprocal relationships with other departments. We highlight that there may be a gender gap in these "champions"; this is an opportunity to promote awareness of reproductive health and engage diverse supporters.

Describe goals for resident education in LARCs:
What should your residents know about LARCs by graduation?
How will you determine the success of your program?

The design of a curriculum in LARCs should realistically reflect desired learner outcomes, available educational resources, and a locally appropriate balance of patient and learner needs. While educational models that focus on a high volume of procedures for a few residents can lead to proficiency in LARCs by graduation, this model may not allow for LARC exposure to all residents (Table 2). A tiered educational model with limited, required experiences for all residents and additional elective opportunities provides the most flexibility, but is logistically challenging and requires a high volume of available LARC opportunities. The programs that provided the highest volume of LARCs combined experiences in IM and outside clinics, allowing for dedicated opportunities for residents in IM clinic without competition from other trainees, along with more clinical exposure than is possible in IM alone (Table 1).

Assessment of procedural proficiency was recognized as a challenge in this study with participants reporting varied assessment measures, procedure tracking, and credentialing requirements. Multiple participants desired more shared and standardized assessment resources.

Limitations

This study may not fully capture the barriers encountered by clinicians who were unsuccessful in integrating LARCs. While each of the three unsuccessful participants in this study encountered distinct barriers, these barriers overlapped with those reported by other participants. Experiences in integrating LARCs may differ in non-academic or suburban/rural settings not captured by our sampling. Because data was de-identified, we had limited ability to draw associations between program type and/or setting and optimal training models.

Conclusion

Integration of LARC into IM practice and education has been successfully achieved in a limited number of programs. What are the next steps and resources needed for more widespread LARC integration in IM? One participant called upon national societies to make published guidelines for LARC integration specific to IM. While recommendations are available from OB/GYN and FM, these do not address the barriers to incorporating LARCs into a system where these procedures are not currently offered. Standardized recommendations are likely not realistic given the complexity of culture, interdepartmental relationships, and resources at each institution. There are areas, however, where we can work together. We can create or join existing networks of LARC providers to facilitate practice and troubleshoot barriers, such as the Reproductive Health Access Network.[20] Assessment rubrics can be shared across institutions and adapted from national programs, such as the Reproductive Health Education in Family Medicine (RHEDI) program.[21] By understanding the potential approaches, barriers, and facilitators, IM clinicians can determine if the introduction of LARCs is needed and feasible in their program. While not one approach will fit all, LARC provision is important to meet patient and trainee needs in certain IM clinical and educational settings.

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Corresponding Author: *Rachel S. Casas, MD, EdM; Division of General Internal Medicine, Penn State Health Milton S. Hershey Medical Center, Academic Support Building, 90 Hope Drive, Suite 3200, Mail Code A320, Hershey, PA, USA (e-mail: rcasas@pennstatehealth.psu.edu).*

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REFERENCES

1. **Finer LB, Zolna MR.** Declines in unintended pregnancy in the United States, 2008–2011. New Eng J Med. 2016; 374 (9): 843–52.
2. **Edwards ST, Mafi JN, Landon BE.** Trends and quality of care in outpatient visits to generalist and specialist physicians delivering primary care in the United States, 1997–2010. J Gen Intern Med. 2014; 29 (6):947-955.
3. **Hall KS, Patton EW, Crissman HP, Zochowski MK, Dalton VK.** A population-based study of U.S. women's preferred versus usual sources of reproductive health care. Am J Obstet Gynecol. 2015; 213 (3): 352.e1-352.e14
4. Committee on Gynecologic Practice Long-Acting Reversible Contraception Working Group. Committee Opinion No. 642: Increasing access to contraceptive implants and intrauterine devices to reduce unintended pregnancy. Committee Opinion No. 642. Obstet Gynecol. 2015; 126 (4): e44-8.
5. **Curtis KM, Tepper NK, Jatlaoui TC, et al.** U.S. Medical eligibility criteria for contraceptive use, 2016 MMWR Recomm Rep. 2016; 65 (RR-3): 1–104.
6. **Parisi SM, Zikovich S, Chuang CH, Sobota M, Nothnagle M, Schwarz EB.** Primary care physicians' perceptions of rates of unintended pregnancy. Contraception. 2012; 86 (1):48-54.
7. **Dirksen RR, Shulman B, Teal SB, Huebschmann AG.** Contraceptive counseling by general internal medicine faculty and residents. J Womens Health (Larchmt). 2014; 23 (8):707-713.
8. **Lohr PA, Schwarz EB, Gladstein JE, Nelson AL.** Provision of contraceptive counseling by internal medicine residents. J Womens Health (Larchmt). 2009; 18 (1):127-131.

9. **Eisenberg DL, Stika C, Desai A, Baker D, Yost KJ**. Providing contraception for women taking potentially teratogenic medications: a survey of internal medicine physicians' knowledge, attitudes and barriers. J Gen Intern Med. 2010; 25 (4):291-297.
10. **Stewart M, Digiusto E, Bateson D, South R, Black KI.** Outcomes of intrauterine device insertion training for doctors working in primary care. Aust Fam Physician. 2016; 45 (11):837-841.
11. **Romero D, Maldonado L, Fuentes L, Prine L.** Association of reproductive health training on intention to provide services after residency: the family physician resident survey. Fam Med. 2015; 47 (1):22-30.
12. **Harvey C, Bateson D, Wattimena J, Black KI**. Ease of intrauterine contraceptive device insertion in family planning settings. Aust N Z J Obstet Gynaecol. 2012; 52 (6):534-539.
13. **Luchowski AT, Anderson BL, Power ML, Raglan GB, Espey E, Schulkin J**. Obstetrician-gynecologists and contraception: long-acting reversible contraception practices and education. Contraception. 2014; 89 (6): 578-583.
14. **Rubin SE, Fletcher J, Stein T, Segall-Gutierrez P, Gold M.** Determinants of intrauterine contraception provision among US family physicians: a national survey of knowledge, attitudes and practice. Contraception. 2011; 83 (5):472-478.
15. **Greenberg KB, Makino KK, Coles MS.** Factors associated with provision of long-acting reversible contraception among adolescent health care providers. J Adolesc Health. 2013; 52 (3):372-374.
16. **Pace LE, Dolan BM, Tishler LW, Gooding HC, Bartz D**. Incorporating long-acting reversible contraception into primary care: A training and practice innovation. Women's Health Issues. 2016; 26 (2): 131–34.
17. **Meghan G, Prifti C, Bachorik A.** Residency training in long-acting reversible contraceptive methods. JAMA Intern Med. 2017; 177 (7): 1061–62.
18. Directory of Residency and Fellowship Programs in Women's Health, 2015. J Womens Health. 2015; 24 (5): 411-453.
19. **Nicola KG, Cameron E, Rashid S, Redwood S.** Using the framework method for the analysis of qualitative data in multi-disciplinary health research. BMC Med Res Methodol. 2013; 13: 117.
20. Reproductive Health Access Project. Available at: https://www.reproductiveaccess.org/. Accessed August 25, 2020.
21. The Center for Reproductive Health Education In Family Medicine Department of Family and Social Medicine Montefiore Medical Center. RHEDI Program. Available at: https://rhedi.org/about/. Accessed August 25, 2020.