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Barriers and Enablers to Family Physicians' Provision of Early Pregnancy Loss Management in the United States

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A B S T R A C T

Background: Early pregnancy loss (EPL) is a common experience. Treatment options include expectant management, medication, and uterine aspiration. Although family physicians can offer comprehensive EPL treatment in their office-based settings, few actually do. This study explored the postresidency provision of EPL management and factors that inhibit or enable providing this care among family physicians trained in early abortion during residency.
Methods: Using an exploratory sequential mixed-methods design, we studied a sample of family physicians trained in early abortion during residency. We initially interviewed a subset trained in uterine aspiration during residency, then surveyed the entire sample. Interview transcripts were coded and analyzed using grounded theory; results informed survey development. On survey responses, we used Pearson χ^2 to examine the association between certain variables and provision of EPL care options.
Results: Most of the 15 interview and 231 survey respondents provided expectant management of EPL. Of the survey respondents, 47.2% provided medication management and 11.4% manual vacuum aspiration. Key challenges and facilitators involved referral, training, ultrasound access, and managing systems-level issues. In bivariate analyses, providing prenatal care, offering abortion care, access to ultrasound, and competency were positively associated with providing EPL management options ($p < .05$).
Conclusions: Clinical training alone is insufficient to expand access to comprehensive EPL care in family medicine office-based settings. Supporting family physicians during and after residency with training and technical assistance to address barriers to care may strengthen their abilities to champion practice change and expand access to comprehensive EPL management options.

One in five women will experience early pregnancy loss (EPL), or miscarriage, often in the first trimester (Rossen, Ahrens, & Branum, 2018) (These data come from the National Survey of Family Growth, which is a national dataset that does not include transgender-inclusive gender identity measures. We use the word "women" in this sentence owing to the measures used in this study, but acknowledge that it is not only women who experience early pregnancy loss.) Historically, EPL had been managed with surgery in the operating room under sedation (Harris, Dalton, & Johnson, 2007), although in most cases this high-level surgical treatment is no longer necessary. First-trimester EPL can be safely and effectively managed in outpatient, office-based settings through expectant management ("watch and wait"), medication management with mifepristone and/or misoprostol, and/or uterine aspiration with manual vacuum aspiration (MVA) or electric vacuum aspiration (EVA) with local anesthesia and minimal sedation (American College of Obstetricians and Gynecologists, 2018). Because all options and settings are safe, patient preference should guide treatment choice (Prine & MacNaughton, 2011). Compared with operating room management, uterine aspiration is preferred for many patients because it is equally safe, more affordable, faster to

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perform, and highly feasible in outpatient settings (Forna & Gülmezoglu, 2001; Westfall, Sophocles, Burggraf, & Ellis, 1998). Although some patients may prefer deep sedation, many are needlessly referred for operating room management, rather than receiving the option of continuous care with their trusted clinician (Wallace, Dehlendorf, Vittinghoff, Gold, & Dalton, 2013).

Family physicians are uniquely positioned to fill this gap; their scope of practice includes outpatient procedures and maternal and reproductive health care in primary care settings, including contraception, prenatal care, EPL management, and abortion (American Academy of Family Physicians, 2016; Nothnagle et al., 2008). Medication management and uterine aspiration involve the same skill set for both abortion and EPL care (Creinin, Schwartz, Guido, Pymar, 2001; Schreiber et al., 2018). Additionally, family physicians often practice in medically underserved areas, such as low-income and rural communities where access to specialist health care for EPL is limited (Green et al., 2005; Grumbach, Hart, Mertz, Coffman, & Palazzo, 2003). They also tend to practice in office-based settings, like community health centers, where patients find receiving EPL care highly acceptable, citing reasons of privacy, efficiency, and comfort with one's primary care clinician (Dalton et al., 2006). Expanding EPL management in family medicine office-based settings may enhance access to patient-centered care by supporting patients' informational and emotional needs, offering a full range of evidence-based options to support patient preferences, and increasing continuity of care (Baird et al., 2018).

Despite the importance, feasibility, and acceptability of family physicians offering EPL management in their offices, in practice, family physicians offer limited EPL care options. Those trained in abortion during residency are more likely to incorporate EPL management into their postresidency practices, yet few are actually providing comprehensive options (Dalton et al., 2011; Darney, Weaver, Stevens, Kimball, & Prager, 2013). Most family physicians offer expectant management alone and few provide medication management and/or uterine aspiration (Wallace et al., 2013). Several studies have identified some barriers and enablers, such as space constraints and training, to provide EPL management in office-based practices (Wallace et al., 2013; Darney, Weaver, Stevens, et al., 2013; Dennis, Fuentes, Douglas-Durham, & Grossman, 2015). To date, none have comprehensively investigated factors that inhibit or support family physicians trained in abortion care to provide full-scope EPL care. Thus, we conducted a mixed-methods study of graduates from family medicine residencies that received training in early abortion care to explore their postresidency provision of EPL management, factors that impeded or facilitated providing this care, and characteristics associated with provision.

Methods

Study Design

We used an exploratory sequential mixed-methods design beginning with in-depth interviews followed by a quantitative survey (Larkin, Begley, & Devane, 2014). The sample included practicing family physicians who 1) graduated from a U.S. family medicine residency between 2007 and 2012, 2) completed the Reproductive Health Access Project's (RHAP) postresidency survey (Romero, Maldonado, Fuentes, & Prine, 2015), and 3) received elective or opt-out abortion training (medication abortion and/or uterine aspiration) during residency (35 programs). Of the 542 who met these criteria, we had contact information for 505. Data were collected in 2015 and 2016. The Institutional Review Board of the Institute for Family Health approved this study.

Qualitative Data Collection

From this sample, we purposively recruited those who indicated on the postresidency survey that they received uterine aspiration training and were planning to provide EPL management, but not abortion, in their future job ($n = 93$). We selected this particular subset to explore factors that support or inhibit family physicians to provide EPL management alone, rather than both abortion and EPL care. All were contacted by email, USPS mail, and phone to participate in a phone interview.

The semistructured interview guide contained four domains pertaining to participants' clinical practice, provision of reproductive health services, barriers and facilitators to providing EPL management, and patient stories regarding experiencing an EPL. The team utilized probes to elicit detailed responses from participants. Three female staff members from RHAP trained in interviewing conducted phone interviews (G.D., L.M., R.M.). At the time, L.M. possessed a Master in Public Health (MPH) and Master of Arts (MA), G.D. was an MPH candidate, and R.M. an MA candidate. Participants provided verbal consent upon starting the interview.

Audio-recorded interviews lasted 25 minutes on average and participants received a $25 gift card. The interview team transcribed audio immediately after each interview and reviewed transcripts weekly to determine conceptual saturation, whereby additional interviews would not elicit new themes. Transcripts were de-identified and labeled with an identification number. Transcripts were not returned to participants.

Quantitative Data Collection

The survey instrument was informed by the themes that emerged from the interviews regarding the provision, challenges, and facilitators to providing EPL care, as well as input from a PhD-trained reproductive health researcher and RHAP's Medical and Education Directors. The final survey contained 56 questions within the following domains: practice setting, provision of reproductive health services, ultrasound machine use, and EPL management practices and attitudes. The latter examined the importance of providing EPL management, self-reported competency, and barriers and facilitators to providing EPL management. We asked survey respondents to identify whether they provided MVA, medication, and/or expectant management. We defined MVA as a manual suction procedure that removes pregnancy tissue. We chose MVA language, rather than uterine aspiration, because interview respondents and family physician colleagues consulted for pilot testing more frequently discussed training in and providing MVA. We defined medication management of EPL as using misoprostol only, because research on using mifepristone was not yet published at the time of data collection (Schreiber et al., 2018). Additionally, we asked respondents to specify whether they provided other treatment options, such as EVA or dilation and curettage under sedation. Before implementation, RHAP staff and clinical fellows piloted the survey.

Potential respondents ($n = 505$) were invited to participate in the web-based survey hosted on SurveyMonkey or via a hard copy sent by USPS mail. Nonresponders were contacted up to three times via email, and four times via mail (Dillman, Smyth, & Melani, 2014). Respondents were entered into a raffle to receive a $20 gift card.

Analytic Strategy

The qualitative analysis team consisted of an MPH candidate trained in qualitative research (G.D.) and a PhD-trained, expert reproductive health researcher (D.R.). Our analysis methodology was based on the Auerbach and Silverstein (2003) approach to coding and analysis based on grounded theory (Glaser & Strauss, 1967). An initial code list was developed after listening to several interviews, based on emergent themes categorized by interview guide domains. The codebook was revised after reading all transcripts. The two analysts coded each transcript independently and met regularly to discuss and refine codes as needed. Differences of opinion in coding were reconciled by jointly reviewing data and ongoing discussion until reaching consensus on all discrepancies. The team managed all coding in Dedoose (Version 4.5.95, Socio-Cultural Research Consultants, LLC, Manhattan Beach, CA). Themes found in qualitative analysis informed the development of the survey as well as hypotheses for quantitative analysis.

To analyze survey data, we conducted descriptive statistics to summarize respondents' demographic and practice characteristics, and barriers and facilitators to providing EPL options. Additionally, we conducted bivariate analyses using Pearson χ^2 to examine the association between providing prenatal care, intrauterine devices, and abortion; access to ultrasound equipment; geographic location; clinical practice setting; and competency to provide EPL treatment options with the provision of MVA, medication, and expectant management for EPL. All analyses were completed using SPSS 26 (Armonk, NY). We set significance at $p = .05$ for all analyses.

Results

Participant Characteristics

Fifteen of 93 respondents (16.1%) completed interviews; 257 of 505 (50.9%) responded to the survey. For purposes of analysis, we excluded survey respondents who left the majority of the survey incomplete ($n = 9$), were not practicing in the United States ($n = 8$), did not see patients of reproductive age ($n = 7$), or were not recently in clinical practice ($n = 2$). This process left a survey sample of 231. Most interview and survey respondents were female and practiced in office-based primary care settings, rather than hospitals or abortion/family planning clinics. Table 1 illustrates respondents' demographic and practice setting characteristics.

Interview Results

Among interview participants, 1 (6.7%) provided MVA for EPL, 7 (46.7%) medication, and 12 (80.0%) expectant management. Three did not provide any EPL treatment options. Two also provided operating room management under sedation. Analysis yielded three key themes regarding EPL care beliefs, as well as factors that impeded or enabled respondents from offering comprehensive options.

Providing EPL management options is a part of family medicine

Respondents overwhelmingly expressed the belief that EPL care is a valuable and important component of family medicine. Although everyone felt this care was "really ideal" to offer (Respondent #13), not all respondents provided a full range of EPL treatment options in practice. One participant indicated, "[EPL care] needs to be part of routine family medicine reproductive health because it happens to [patients], whether they know they're pregnant or not" (Respondent #15). They also felt patients preferred seeing their family physician for EPL because of the established patient–provider relationship, as compared with other clinicians:

> I don't think that those sorts of conversations [about EPL] are able to happen as easily or tend to mean as much if they're coming from a stranger, like a physician in the ER … To have somebody who knows [them] and can relate to [them] a little bit in terms of knowing [their] history, providing that reassurance and guidance … I think it means a lot to the patients we are providing services for. (Respondent #7)

Not enough training

All respondents providing expectant management not only felt comfortable providing it, but felt it was obvious to do so as family physicians. One stated, "Of course, I can offer them [expectant management] and I do" (Respondent #11). Most described it as part of their standard practice.

Table 1
Sample Characteristics

	Survey Respondents ($n = 231$), n (%)	Interview Respondents ($n = 15$), n (%)
Sex ($n = 227$)*		
Female	188 (82.8)	13 (86.7)
Male	38 (16.7)	2 (13.3)
Female-to-male (trans male)†	1 (0.4)	0 (0.0)
Age ($n = 227$), mean (range)	34.8 (29–47)	—
Practice setting		
Office-based primary care‡	177 (76.6)	14 (93.3)
Abortion/family planning clinic	12 (5.2)	0 (0.0)
Hospital	31 (13.4)	1 (6.7)
Geographic location ($n = 228$)		
Urban	133 (58.3)	5 (33.3)
Suburban	56 (24.6)	4 (26.7)
Rural/frontier	39 (17.1)	6 (40.0)

Survey respondents practiced in 32 states and the District of Columbia. The majority of respondents practiced in California, New York, Massachusetts, and Washington.

* Unless otherwise indicated, the denominator for descriptive statistics among survey respondents is the total sample of survey respondents ($N = 231$). All 15 interview respondents have their demographic and practice characteristics described in this table.

† One respondent self-identified on the survey as "FTM," which refers to female-to-male or trans male.

‡ This category includes office-based primary care settings like community health centers, private practices, and hospital-affiliated outpatient clinics, but excludes abortion/family planning clinics. "Other" practice settings are not included in this table.

Beyond expectant management, some participants felt they received insufficient training during residency to reach competency in the skills required to provide comprehensive EPL options, such as ultrasound, uterine aspiration, and medication management. One participant noted, "I did do some [MVAs], but I just don't think I did enough to really say that I'm qualified to do MVAs" (Respondent #11). Another stated:

> I know all about [medication management] and I completely get it, but … I never had patients that I did it with, so I feel like I would need to do more training in order to offer it to my patients ... I think I would be the only person in my practice who would do it and that just leads to some clinical issues … [With expectant management,] I'm not the only one. There's one other in my practice who sort of feels comfortable with all of that. (Respondent #8)

Similarly, another shared:

> When we just finished the training, you feel really competent in doing the ultrasound and you feel like okay, I can handle this. But after some time and you haven't been doing it so much, then you haven't had enough experience … I feel like if I had the opportunity to do more ... I would feel more confident in [providing EPL care]. (Respondent #5)

Respondents felt they could provide comprehensive EPL management options with additional and ongoing hands-on training and support from trained clinician colleagues.

Several sought additional training beyond residency to gain these skills. They often learned "on [their] own time" (Respondent #1) by devoting extra energy during residency or pursuing postresidency fellowships. One respondent "did extra" in her "opt-out" residency program "to make sure that [she] would feel more comfortable" to provide EPL care in her future practice (Respondent #2).

Logistical needs to establish EPL care

Respondents expressed several logistical and systems needs beyond training that impeded or facilitated EPL care provision in their practices. Most providing any EPL management expressed that these services were already in place when they began working in that practice. One noted, "I was taking over from another family practice doctor who had advanced obstetrical training. So, they were used to him doing [EPL care], so I kind of just slipped into his void" (Respondent #3). Others emphasized the work clinical champions had undertaken earlier at their sites to integrate EPL management or training opportunities that then allowed them and other colleagues to offer EPL care. The single respondent who provided all three care options noted, especially with MVA, a champion was crucial in implementing care: "it took one champion—someone who was totally willing to spend hours and hours of their own time" (Respondent #1).

Among those providing only medication and/or expectant management, respondents stated that if patients needed further care, they would refer to another clinician or site. Often, they referred to OB/GYNs with whom they had a professional, trusting relationship:

> Fortunately, we have three OB practices in our county that we have a pretty good working relationship with. If there was ever an issue where [the patient] needed more … intervention, we have that backup where we could … get them in pretty quickly. (Respondent #9)

Additionally, having an onsite ultrasound machine was perceived as highly important for providing EPL management options. Limitations to ultrasound access resulted in problems providing comprehensive care: "We have it two days a week, but there will be some days when you need it and you don't have it" (Respondent #4). Another respondent noted, "Without an ultrasound machine in the office, by the time we send them to the hospital to get the ultrasound, it's like why not just do the procedure in the hospital instead of having them come back to the clinic?" (Respondent #3).

Furthermore, participants expressed needing to work through additional issues before providing all EPL management options, such as identifying and training colleagues as backup support:

> For me, it's more the logistics of like I gave someone the [misoprostol] meds on a Thursday and I don't work on a Friday, then what happens on Friday if they call and there's an issue—they're bleeding more than expected or they want to talk about it? Then, I would have to work that out logistically and either make sure that I was available 24 hours a day ... or that my colleagues were comfortable in covering it, which I don't think they would be because they have less training in it than I do. (Respondent #8)

Survey Respondents' Provision of EPL Management and Other Reproductive Health Services

Table 2 illustrates survey respondents' provision of reproductive health services and their self-reported competency levels in providing EPL care. Their distribution of EPL care provision was similar to that of interview participants: 11.4% provided MVA, 47.2% medication, and 77.1% expectant management.

Table 2
EPL Competency and Provision of Reproductive Health Services among Survey Respondents ($n = 231$)

	n (%)
Self-reported as very competent for EPL management option	
MVA	92 (39.8)
Medication	120 (51.9)
Expectant ($n = 230$)*	163 (70.9)
EPL management provision	
MVA ($n = 228$)†	26 (11.4)
Medication	109 (47.2)
Expectant	178 (77.1)
Any EPL management option	180 (77.9)
Prenatal care provision	132 (57.1)
Onsite ultrasound machine	
Yes, with regular access	97 (42.0)
Yes, with occasional access	23 (10.0)
No	111 (48.0)
Abortion provision	
Uterine aspiration (MVA or EVA)	17 (7.4)
Medication abortion	37 (16.0)
Any abortion care	38 (16.5)
Contraception provision	
Oral contraceptive pills	224 (97.0)
Ring	220 (95.2)
Contraceptive injection	215 (93.1)
Emergency contraception	213 (92.2)
Patch	213 (92.2)
Barrier methods (condoms)	204 (88.3)
IUD	204 (88.3)
Progestin implant	163 (70.6)
Vasectomy	56 (24.2)

EPL, early pregnancy loss; EVA, electric vacuum aspiration; IUD, intrauterine device; MVA, manual vacuum aspiration.

* One missing respondent.

† Three missing respondents.

Table 3
Barriers to EPL Management among Survey Respondents Not Providing One or More Types of EPL Management Options ($n = 231$)*

	MVA ($n = 201$), n (%)	Medication ($n = 122$), n (%)	Expectant ($n = 53$), n (%)
Systems-level factors			
No clinical systems to support this	85 (41.8)	49 (40.5)	23 (43.4)
Ease to refer patients to obstetrician/gynecologist	83 (41.3)	64 (52.9)	31 (58.5)
No ultrasound machine	75 (37.3)	47 (38.8)	23 (43.4)
Lack of supplies/space	72 (35.8)	—	—
Not allowed to provide this care	59 (28.4)	26 (21.5)	11 (20.8)
Staff members do not support	40 (19.9)	18 (14.9)	11 (20.8)
Turf issues with other departments	26 (12.9)	15 (12.4)	9 (17.0)
Provided by others within practice	24 (11.9)	22 (18.2)	15 (28.3)
Lack of time to counsel patients	11 (5.5)	8 (6.6)	1 (1.9)
Individual-level factors			
Do not feel competent (insufficient training)	98 (48.8)	52 (43.0)	14 (26.4)
Not licensed to provide this care	40 (19.9)	10 (8.3)	3 (5.7)
Too similar to abortion	10 (5.0)	4 (3.3)	—
Patient-level factors			
Patients do not see me for EPL	45 (22.4)	44 (36.4)	36 (67.9)
Patients not interested	8 (4.0)	4 (3.3)	0 (0.0)
EPL has not come up yet/often	4 (2.0)	3 (2.4)	0 (0.0)

EPL, early pregnancy loss; MVA, manual vacuum aspiration.
* Respondents were able to select multiple options to describe the factors they identified as barriers to providing each type of EPL management option.

All who provided MVA also offered medication and expectant management. Although 22.1% did not provide any EPL care, nearly all (92.0%) felt that providing EPL care was somewhat or very important. Most respondents offered a range of reproductive health services in their practices. More than one-half (58.0%) did not have regular access to an onsite ultrasound machine. Additionally, 16.5% provided some type of abortion care.

Factors That Inhibit or Facilitate Providing EPL Management Options

Respondents identified clinic systems-, individual-, and patient-level factors that inhibited or facilitated providing the three EPL treatment options in practice. Among those who did not provide an EPL management option, the most common barriers involved systems-level factors (Table 3). Training to competence presented a notable barrier for providing MVA (48.8%) and medication management (43.0%). Common facilitators for providing EPL management involved sufficient training (>94% all three options), having clinical systems in place, timely access to ultrasound equipment, and considering EPL within the family medicine scope (Table 4). Of note, survey respondents who provided MVA for EPL highlighted the importance of clinician champions to support integrating this service into practice, as similarly discussed by interview respondents.

Characteristics Associated with Providing EPL Management Options

Table 5 presents respondent characteristics associated with providing MVA, medication, and expectant management of EPL. Providing prenatal care, offering abortion, having regular ultrasound access, and having high competency in providing an EPL treatment method were positively associated with providing each option. Providing intrauterine devices was associated with medication and expectant management, but not MVA. There was no association between geographic location and type(s) of EPL care.

Discussion

Participants in this mixed-methods study believed comprehensive EPL management—offering MVA, medication, and expectant management—is a valuable component of family medicine practice and patient-centered care. Despite receiving early abortion training during residency, for EPL care most respondents provided expectant management only; few provided all three options. In both our qualitative and quantitative analyses, we found that training and systems-level factors commonly impeded or facilitated EPL care provision. Challenges included logistical obstacles to establishing clinical systems for

Table 4
Facilitators to EPL Management among Survey Respondents Providing One or More Types of EPL Management Options*

	MVA ($n = 26$), n (%)	Medication ($n = 109$), n (%)	Expectant ($n = 178$), n (%)
Sufficient clinical training	25 (96.2)	103 (94.5)	172 (96.6)
Onsite access to ultrasound machine	17 (65.4)	48 (44.0)	62 (34.8)
Colleague championed provision of care	15 (57.7)	28 (25.7)	36 (20.2)
Staff members support this care	14 (53.8)	22 (20.2)	39 (21.9)
Clinical systems in place	13 (50.0)	59 (54.1)	87 (48.9)
Personally considered within the family medicine scope of practice	12 (46.2)	51 (46.8)	105 (59.0)
Timely access to offsite ultrasound reports	11 (42.3)	54 (49.5)	88 (49.4)
Available in practice prior to my arrival	11 (42.3)	46 (42.2)	76 (42.7)

Abbreviations: EPL, early pregnancy loss; MVA, manual vacuum aspiration.
* Respondents were able to select multiple options to describe the factors they identified as facilitators to providing each EPL management option.

Table 5
Respondent Characteristics Associated with Providing EPL Management Options ($n = 231$)

Characteristics	EPL Management Options Provided					
	MVA ($n = 26$), n (%)	No MVA ($n = 202$), n (%)	Medication ($n = 109$), n (%)	No Medication ($n = 122$), n (%)	Expectant ($n = 178$), n (%)	No Expectant ($n = 53$), n (%)
Provides prenatal care	23 (88.4)*	108 (53.5)	85 (78.0)*	47 (38.5)	128 (71.9)*	4 (7.5)
Provides any abortion care	18 (69.2)*,†	20 (9.9)	37 (33.9)*	1 (0.8)	36 (20.2)*	2 (3.8)
Provides IUDs	25 (96.2)†	177 (87.6)	106 (97.2)*	98 (80.3)	168 (94.4)*	36 (67.9)
Has regular ultrasound access	21 (80.8)*	74 (36.6)	60 (55.0)*	37 (30.3)	82 (46.1)‡	15 (28.3)
Geographic location§						
Urban	19 (79.2)†	112 (55.7)	62 (57.9)	71 (58.7)	103 (58.9)	30 (56.6)
Suburban	2 (8.3)	54 (26.9)	24 (22.4)	32 (26.4)	40 (22.9)	16 (30.2)
Rural/frontier	3 (12.5)	35 (17.4)	21 (19.6)	18 (14.9)	32 (18.3)	7 (13.2)
Practice setting						
Hospital or abortion/family planning clinic	13 (50.0)	27 (13.4)	29 (26.6)‡	12 (9.8)	36 (20.2)	5 (9.4)
Office-based primary care	17 (65.4)	158 (78.2)	77 (70.6)	100 (82.0)	132 (74.2)	45 (84.9)
Very competent in EPL management‖	24 (92.3)*	67 (33.2)	81 (74.3)*	39 (32.0)	142 (79.8)*,†	21 (40.4%)¶

EPL, early pregnancy loss; IUD, intrauterine device; MVA, manual vacuum aspiration.

* p Value $< .01$.

† Fisher's Exact Test. All others χ^2.

‡ p Value $> .01$ and $< .05$.

§ Due to missing values in "geographic location," denominators change for the following columns: No MVA = 201, Medication = 107, No Medication = 121, Expectant = 175.

‖ Refers to competency in the specific EPL management outcome variable (i.e., the association between feeling very competent to provide MVA and actual provision of MVA).

¶ Owing to missing values, the denominator changes in this cell: No Expectant = 52.

EPL care, sufficient clinical training, and accessing ultrasound machines. Although having strong referral protocols for EPL strengthens care coordination and may align with some patients' preferences or needs, frequently sending patients to specialists or the operating room limits access to comprehensive, continuous care in primary care settings (Baird et al., 2018). These barriers echo those described in previous studies of family physicians (Block, Dehlendorf, Biggs, McNeil, & Goodman, 2017; Herbitter, Bennett, Schubert, Bennett, & Gold, 2013; Wallace et al., 2013). Consistent with other studies, we found providing office-based reproductive health services, like prenatal care and abortion, having regular access to ultrasound examinations, and competency were positively associated with offering EPL management options (Dalton, et al., 2011; Herbitter, et al., 2013; Wallace, et al., 2013). These characteristics, barriers, and enablers are also related to family physicians' abortion provision (Block, et al., 2017; Srinivasulu, Maldonado, Prine, & Rubin, 2019). Therefore, strengthening clinical systems, training, and administrative support could enable the expansion of both EPL treatment and abortion care in primary care settings.

In addition to systems challenges, this study illustrated training limitations. Even among a subset of family physicians trained during residency in skills to provide comprehensive EPL care, many reported receiving insufficient training. Strengthening training on medication management of EPL, especially with mifepristone and misoprostol, may increase provision. The two-drug combination is more efficacious than misoprostol alone and is less likely to require follow-up interventions, such as additional misoprostol or surgical intervention (Schreiber et al., 2018). This may encourage more clinicians to provide medication management of EPL. Education on alternative follow-up options may also decrease the need for ultrasound examination, given its limited availability in some primary care practices. For example, studies show telephone follow-up or at-home pregnancy testing can feasibly and effectively confirm successful medication abortion, which suggests that they also can confirm a completed EPL (Chen, Rounds, Creinin, Cansino, & Hou, 2016; Raymond et al., 2018).

Of note, not all respondents who considered themselves very competent in MVA and medication management provided these options in practice. This finding suggests that, even among family physicians who feel skilled in EPL care, they need clinical systems, access to ultrasound equipment, and administrative support to integrate comprehensive EPL management into practice. Yet, residency programs rarely train family physicians to address these systems barriers (Block, et al., 2017; Goodman, et al., 2009; Goodman et al., 2013). Some organizations are filling these gaps within and beyond residency. For instance, Washington State's Residency Training Initiative in Miscarriage Management and RHAP's Miscarriage Management Initiative offer interprofessional training and technical assistance for clinicians, health center staff, and family medicine residencies to address common organizational barriers to integrating EPL management (Darney, Weaver, VanDerhei, Stevens, & Prager, 2013; Srinivasulu, Riker, Maldonado, & Breitbart, 2020, in press). Additionally, TEACH's CREATE program offers highly motivated family medicine residents intensive abortion care, negotiation, and leadership training (Block et al., 2017). Expanding such models within and beyond residency to support family physicians to champion practice change efforts may address challenges and strengthen enablers identified in this study to integrate comprehensive EPL care into office-based settings.

Our study has several limitations. Results are not generalizable to family physicians who did not receive some abortion training in residency. Because we recruited from family physicians trained in abortion, our sample was likely biased toward those providing reproductive health services, thus potentially overestimating the proportion of family physicians providing EPL management. Additionally, the proportion of women in our sample is much greater than that of practicing family physicians nationally, which limits our study's generalizability, because female family physicians may be more likely to provide reproductive health care than male family physicians (Association of American Medical Colleges, 2017; Coffman, Wilkinson, & Jabbarpour, 2020). Furthermore, though the survey response rate was consistent with other physician surveys (VanGeest,

Johnson, & Welch, 2007), our results may not reflect the experiences of all family physicians who received some abortion training, because nonresponders may have different barriers and enablers to providing EPL care than respondents.

Implications for Practice and/or Policy

Integrating comprehensive EPL management in office-based primary care settings, where family physicians most often provide care, is a necessary component of patient-centered care. Family medicine residencies must strengthen clinicians' competencies to provide uterine aspiration, medication (mifepristone and misoprostol), and expectant management for EPL. Residency and postresidency programs should complement clinical training with skills building in leadership, negotiation, and systems change. This effort will support family physicians to champion practice change when they work in primary care settings without existing structures for comprehensive EPL care. Additionally, family physicians will need support to access ultrasound, aspiration supplies, values clarification workshops, and other technical assistance to address barriers and develop systems to provide full-spectrum EPL care.

Conclusions

To date, this is the only mixed-methods study that explores EPL care provision, barriers and enablers to providing this care, and factors associated with provision among family physicians trained in early abortion in residency programs across the United States. Our findings indicate that only a minority of these family physicians provide comprehensive EPL management. This demonstrates that clinical training, though necessary, is insufficient to expand access to comprehensive EPL treatment options in family medicine. Supporting family physicians during and after residency with technical assistance and training that integrates clinical, negotiation, and leadership skills may help them champion practice change to expand access to patient-centered, comprehensive EPL care, particularly in office-based settings.

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