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Emergency Contraception: A multi-specialty survey of clinician knowledge and practices

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Abstract

Objectives—To assess knowledge and provision of emergency contraception (EC), particularly the most effective methods.

Study Design—A web-based survey was distributed to a cross-sectional convenience sample of healthcare providers across specialties treating reproductive-aged women. The survey was sent to 3,260 practicing physicians and advanced practice clinicians in 14 academic centers between February 2013 and April 2014. We analyzed responses by provider specialty using multivariable logistic regression.

Results—The final sample included 1,684 providers (response rate = 51.7%). Ninety-five percent of the respondents had heard of levonorgestrel (LNG) EC. Among reproductive health specialists, 81% provide levonorgestrel EC in their practice, although only half (52%) had heard of ulipristal acetate (UPA) and very few provide it (14%). The majority in family medicine (69%) and emergency medicine (74%) provide levonorgestrel, in contrast to 42% of internists and 55% of pediatricians. However, the more effective methods (UPA and copper IUD) were little known and rarely provided outside of reproductive health specialties; 18% of internists and 14% of emergency medicine providers had heard of UPA and 4% provide it. Only 22% of emergency providers and 32% of pediatricians had heard of the copper IUD used as EC. Among reproductive health specialists, only 36% provide copper IUD as EC in their practice. Specialty, provider type and proportion of women of reproductive age in the practice were related to knowledge and provision of some forms of EC.

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Conclusions—Awareness and provision of the most effective EC methods, UPA and the copper IUD (which are provider-dependent), are substantially lower than for LNG EC, especially among providers who do not focus on reproductive health.

Implications—In our sample of 1,684 healthcare providers from diverse specialties who treat reproductive-aged women, knowledge and provision of the most effective forms of emergency contraception (ulipristal acetate and the copper IUD) are far lower than for levonorgestrel EC. Women should be offered the full range of EC methods.

Keywords

emergency contraception; ulipristal; copper IUD; levonorgestrel

1. INTRODUCTION

Emergency contraception (EC) provides a last opportunity to prevent pregnancy resulting from lapses in contraceptive use, method failure, or forced sex. In the United States, four EC methods are available: the copper intrauterine device (IUD), levonorgestrel 1.5 mg (LNG, a progestin-only pill), ulipristal acetate 30 mg (UPA, an anti-progestin pill), and the Yuzpe method (oral contraceptives taken in various combinations). Although major medical associations [1–5] recommend counseling women at risk of unintended pregnancy about EC, a 2011 study found that only 3% of women received such counseling in the past year [6]. Often, providers rely on patients to initiate discussions about EC [7]. Although ongoing contraception is far more effective at preventing pregnancy, the high rate of unintended pregnancy in the United States suggests that unprotected sex is prevalent, indicating that many women could benefit from EC [8].

Since 2014, one-dose LNG EC products are approved for unrestricted sale over-the-counter (OTC). Although the high cost of LNG EC may be a barrier, it is now substantially easier to obtain than UPA and the copper IUD. However, UPA [9] and the copper IUD are more effective than LNG (and all of these are more effective than the Yuzpe method). A review of 42 studies showed that the copper IUD is nearly 100% effective when inserted after unprotected intercourse [10]. A randomized controlled trial showed that women treated with UPA had about half the number of pregnancies than those treated with LNG (OR=0.58, 95% CI 0.33–0.99) [9], and an analysis of two randomized trials showed that the risk of pregnancy for LNG users was about half that for users of the Yuzpe regimen (RR=0.51, 95% CI 0.31–0.83) [11]. Some research suggests that LNG may be ineffective for women weighing 154 lbs or more and UPA may be ineffective for women weighing 194 or more [12,13]. Therefore, the copper IUD and UPA may be more appropriate first-line options in heavier women [13].

Because the most effective methods of EC are provider-dependent, it is important to understand providers' knowledge and provision of EC. This study assesses awareness and practice patterns among a large and diverse group of providers who care for reproductive-aged women, and describes some of the factors associated with knowledge and provision of EC.

2. MATERIALS AND METHODS

2.1 Study design and data collection

Using a convenience sample, we surveyed healthcare providers working at 14 academic medical centers and their affiliated community hospitals and outpatient centers. Eligible subjects were in specialties most likely to provide care for reproductive-age women: obstetrics-gynecology, women's health, internal medicine, family medicine, pediatrics (including adolescent medicine), emergency medicine and internal medicine/pediatrics. Providers who do not see reproductive-age women were excluded from the study. The survey was sent to 3,260 eligible practicing physicians (including residents and fellows) and advanced practice clinicians from February 2013 to April 2014. A lead investigator at each study site recruited participants and obtained Institutional Review Board (IRB) approval or exemption. Subjects received an email invitation from the investigator at each site, which described the purpose of the study and provided a statement of consent, instructions, and a link to the web-based survey (developed using Research Electronic Data Capture) [14]. All efforts were made to remove specialties for which provision of contraception is entirely outside scope of practice. No incentives were offered to complete the survey.

Five investigators with expertise in EC designed the survey, which was reviewed by 16 collaborators and a 20-member external research committee, then field-tested with 22 practicing clinicians for readability and face validity. The survey collected demographic and practice information, including age, gender, years in practice, practice setting (coded as academic or non-academic, based on self-report), type of provider (staff physician, resident or fellow, or advanced practice clinician [nurse practitioner, certified nurse midwife or physician assistant]), the proportion of women of reproductive age in the practice, and medical specialty. Respondents selected as many specialties as applied; these were recoded into five categories, and those choosing more than one category were coded following this hierarchy: emergency medicine, pediatrics, family practice, internal medicine and reproductive health providers.

Participants were asked whether they had heard of the four EC methods available in the United States (LNG, UPA, the Yuzpe method and the copper IUD) and how often they typically recommend or prescribe each method: never, <10 times per year, about once a month, about once a week, or several times per week. Since few providers reported that they recommend or provide any of the EC methods once a week or more, we analyzed the data according to whether or not these providers ever offer these methods in their regular practice.

2.2 Data analysis

Statistical analyses on a de-identified data set were conducted using StataSE 11 (College Station, TX). We calculated frequencies for providers' demographic and practice characteristics, and tabulated the proportion of providers who have heard of and ever provide each EC method. Chi-square tests were used to determine whether knowledge and provision of EC methods varied by specialty and whether awareness and provision of the most effective methods (UPA and the copper IUD) were significantly different from that of

LNG. Multivariate logistic regression models estimated adjusted odds ratios (aOR) and identified predictors of the eight dichotomous outcomes of interest (whether providers had ever heard of and offer the four EC methods). We divided the sample into two groups: providers who primarily specialize in reproductive health (obstetrician-gynecologists and women's health advanced practice clinicians) and those who do not (internal medicine, family practice, pediatrics and adolescent medicine, and emergency medicine), and ran these eight models for each group, adjusting for age, title, gender, practice setting, proportion of reproductive-aged women in practice, years in practice, and specialty.

3. RESULTS

3.1 Sample description

Among the 3,260 eligible providers to whom the survey was sent, 1,932 responded (initial response rate 59.2%). Eligible providers who began the survey but did not provide any demographic or practice information were removed (n=248). After these exclusions, the final sample size included 1,684 providers, resulting in a final response rate of 51.7%. The majority of respondents were female (69%), and most were aged 20 to 39 (46%) or 40 to 59 (41%; Table 1). While 10% of the sample reported being in training, one-third was highly experienced, with 16+ years in practice. The majority of providers were staff physicians (60%), while about one-fifth each were advanced practice clinicians (physician assistants, nurse practitioners and certified nurse midwives) or trainees (residents or fellows). Two-thirds (65%) of the sample practiced at least part of the time in an academic setting. Less than 1% of the providers worked at an institution with a religious affiliation. Internal medicine and reproductive health were the largest specialties represented, each encompassing 28% of the sample. The majority of providers in obstetrics and gynecology (85%) reported that "all" or "most" of their patient population is comprised of women of reproductive age. Conversely, nearly two-thirds (64%) of the providers in internal medicine treat a "small proportion" of women of reproductive age.

3.2 Provider awareness of EC methods

Participants were significantly more likely to have heard of LNG than any other EC method ($p < 0.001$ in chi square analyses). Nearly all of the providers in this sample (95%) had heard of LNG EC, while about half (49%) were aware of the copper IUD used as EC and less than half (42%) had heard of the Yuzpe method (Table 2). Only 29% of respondents had heard of UPA. A small proportion of providers (4%) reported that they had not heard of any of these EC methods.

There was substantial variation by specialty of awareness of the most effective EC methods (Table 2). Approximately half of the reproductive health providers had heard of UPA, in contrast to only 14% of emergency medicine providers ($p < 0.001$). While the majority of reproductive health providers (84%) were aware of use of the copper IUD as EC, about one-third in pediatrics and adolescent medicine and one-fifth in emergency medicine were aware of this indication ($p < 0.001$). Chi-square tests comparing awareness of LNG and each other EC method were conducted separately for reproductive health specialists and non-reproductive health specialists; within each group, awareness of LNG was significantly

higher than for other methods (p-value at least <0.05 for each comparison). Among the 4% (n=61) of providers who reported that they had never heard of any EC method, more than half (55%) were in internal medicine. The majority (60%) of those who had never heard of these methods saw only a small proportion of women of reproductive age, but one-third (35%) had a practice of which half were women of reproductive age. The majority of these providers were staff physicians (62.3%), while one-third were advanced practice clinicians (32.8%).

In multivariate models, the provider characteristics that were most often associated with knowledge of EC methods were proportion of women of reproductive age in the provider's practice, job title and specialty (Tables 3 and 4). Among reproductive health providers, those whose practice is "all or most" comprised of women of reproductive age had greater odds (compared with those who see a small proportion of reproductive-aged women) of having heard of UPA (aOR=3.67; 95% CI 1.28–10.56) and the Yuzpe method (aOR=3.27; 95% CI 1.25–8.52). Similarly, among non-reproductive health specialists, those with a practice composed mostly of reproductive-aged women had greater odds of knowing about UPA (aOR=5.96; 95% CI 3.49–10.19), the Yuzpe method (aOR=2.92; 95% CI 1.71–4.96) and the copper IUD (aOR=3.41; 95% CI 2.00–5.81).

Advanced practice clinicians had lower odds than staff physicians of being familiar with some EC methods. Among reproductive health specialists, advanced practice clinicians had lower odds of having heard of the Yuzpe method (aOR=0.35; 95% CI 0.20–0.62) and the copper IUD (aOR=0.47; 95% CI 0.24–0.9); among the other specialties, advanced practice clinicians had lower odds of being familiar with LNG (aOR=0.38; 95% CI 0.19–0.73) and the Yuzpe method (aOR=0.33; 95% CI 0.20–0.53).

Among providers for whom reproductive healthcare is not a primary focus, specialty predicted awareness of some EC methods. Compared with the reference group (internal medicine), family practitioners had higher odds of having heard of LNG (aOR=3.96; 95% CI 1.51–10.38), the Yuzpe method (aOR=1.84; 95% CI 1.28–2.66) and the copper IUD (aOR=1.88; 95% CI 1.32–2.67). Pediatric providers also had higher odds of having heard of LNG (aOR=2.16; 95% CI 1.05–4.44). Emergency medicine providers had lower odds of being familiar with the copper IUD (aOR=0.42; 95% CI 0.27–0.64).

3.3 Provision of EC methods

Among all respondents, 62% reported that they provide or recommend LNG EC in their regular practice (Table 2). Only 7% of all providers prescribe UPA, while 14% provide or recommend the copper IUD for EC. While 36% of reproductive health specialists provide the copper IUD for EC, only 6% of providers in other specialties offer it. Among reproductive health providers, 14% provide UPA, compared with 4% of non-reproductive health specialists. Provision of the more effective EC methods was significantly lower than provision of LNG among all providers, among reproductive health specialists, and among non-reproductive health specialists ($p<0.001$).

In multivariate models, the proportion of reproductive-aged women in the provider's practice predicted provision of some EC methods (Table 4). Among reproductive health

specialists, compared with those who see few women of reproductive age, those whose patient population is entirely or mostly made up of women of reproductive age had higher odds of providing LNG (aOR=6.10, 95% CI 2.32–16.06) and the copper IUD (aOR=3.85, 95% CI 1.10–13.52). Among providers who do not specialize in reproductive health, those with a practice made up primarily of women of reproductive age had higher odds of prescribing or recommending LNG (aOR=3.00; 95 CI 1.64–5.50) and UPA (aOR=5.15; 95 CI 2.29–11.58).

Provider type also predicted provision of some EC methods. Among reproductive health specialists, residents and fellows had lower odds of recommending or providing LNG EC compared with staff physicians (aOR=0.34; 95 CI 0.15–0.78); advanced practice clinicians had lower odds of offering the Yuzpe method (aOR=0.47; 95 CI 0.27–0.83). Advanced practice clinicians in non-reproductive health specialties had lower odds than staff physicians of recommending or providing LNG (aOR=0.32; 95 CI 0.22–0.47). Family medicine practitioners had higher odds than those in internal medicine of recommending LNG (aOR=2.49; 95 CI 1.72–3.62), the Yuzpe method (aOR=3.25; 95 CI 2.05–5.15) and the copper IUD (aOR=4.49; 95 CI 2.38–8.48).

4. DISCUSSION

4.1 General implications

In this study, awareness and provision of the most effective EC methods (UPA and the copper IUD) were significantly lower than for LNG; this finding held true for both reproductive health providers and providers in other specialties. In fact, awareness and provision of UPA and the copper IUD were lower even than for the outdated Yuzpe method, which is the least effective form of EC. This may be explained in part by the fact that oral contraceptive pills are readily available and easier to provide than IUDs or UPA. Now that LNG EC is available OTC without restrictions, healthcare providers might assume less responsibility for offering EC; however, the most effective methods can only be obtained via a provider. This may be of particular importance to women at higher body weights, for whom LNG may be less effective. UPA is a relatively new option, having been approved in the United States in 2010; this may explain the lower awareness and uptake of this method. Although some providers may be reluctant to prescribe a newer product, published postmarketing surveillance is reassuring that UPA is safe and has an acceptable side-effect profile [15].

The copper IUD is the most effective emergency contraceptive, but also has many barriers to use; one survey of contraceptive providers showed that 85% never recommend a copper IUD for EC [16]. Misconceptions about IUDs may persist among providers, leading to unnecessary screening tests, potentially burdensome extra visits, insertion only during menses, and concerns about use in nulliparous women and adolescents [16–17]. Protocols allowing for same-day IUD insertion and increased provider training, including a focus on the EC indication for the copper IUD are recommended. Cost of the copper IUD remains a barrier, although the Affordable Care Act should mitigate this concern for many women [18].

Although routine contraception may be most often provided by reproductive health specialists, reproductive-aged women do seek preventative and contraceptive counseling from a range of providers, including emergency medicine providers [19–22]. All providers who see women at risk of unintended pregnancy should be prepared to counsel about EC, as patients may seek care from the provider who is most accessible to them, regardless of specialty. Competing demands within the constraints of a brief medical visit limit the time available to discuss reproductive health concerns [23–24]. One model for integrating discussions of reproductive health needs is the ONE KEY QUESTION® campaign, which recommends routinely asking the question “Would you like to be pregnant in the next year?,” and counseling about EC could be woven into this discussion [25]. All emergency access providers should be prepared to counsel victims of sexual violence on all EC methods, especially the most effective methods, even if they do not routinely prescribe long-term contraceptives in their practice. Because many emergency providers dispense LNG directly to the patient, protocol changes (such as adding UPA to hospital formularies and establishing same-day referrals for IUDs) will also be required to increase utilization of the more effective methods. Educational efforts should be directed particularly towards non-reproductive health providers to improve awareness of the most effective EC options.

4.2 Limitations

This study is drawn from a convenience sample, largely from academic settings; this may limit its generalizability. However, even greater knowledge gaps or barriers may exist in a nationally-representative sample of providers. The response rate for this study could be considered a limitation; however, our response rate compares favorably to surveys of healthcare providers without financial incentives [26,27]. Selection bias should always be considered as a possible explanation for findings, as there may be unaccounted differences in EC knowledge and provision among those who chose not to take the survey. It was not possible to conduct an analysis of non-responders due to incomplete data. In addition, we should interpret with caution the findings regarding knowledge and use of the copper IUD as EC; although the question was clearly stated as “which of the following emergency contraceptive methods have you heard of?”, it is possible that providers interpreted the question as having heard of the copper IUD, but not necessarily its indication for EC. Finally, we do not have information about availability of each method in providers’ settings; therefore, it may be that provision of a method is limited not only by lack of knowledge but by formulary, insurance coverage, or other barriers to use. Because UPA is a newer option and does not have a generic equivalent, it was not as readily available in all communities in the US during the time of the survey [28].

4.3 Conclusion

Although LNG EC can now be obtained without a prescription, more effective EC options are available and should be offered. Women at risk of unintended pregnancy, particularly those at heavier body weights, may benefit from access to UPA or the copper IUD and healthcare providers have an important role to play in facilitating access.

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Table 1

Demographic and practice characteristics

	Reproductive health providers [†]	Family Practice	Pediatrics/ Adolescent Medicine	Emergency Medicine	Internal Medicine ^{***}
	n (%)	n (%)	n (%)	n (%)	n (%)
Total	458 (28.1)	220 (13.5)	295 (18.1)	192 (11.8)	463 (28.4)
% Women of Reproductive Age in Practice					
All or most	389 (85.3)	21 (9.6)	21 (7.1)	3 (1.6)	28 (6.1)
About half	46 (10.1)	111 (50.5)	45 (15.3)	110 (57.9)	140 (30.4)
Small proportion	21 (4.6)	88 (40.0)	229 (77.6)	77 (40.5)	292 (63.5)
Provider Type					
CNM, PA, NP	113 (24.8)	32 (14.6)	41 (14.0)	43 (22.5)	73 (16.0)
Resident or Fellow	104 (22.8)	28 (12.8)	78 (26.7)	28 (14.7)	107 (23.4)
Staff Physician	239 (52.4)	159 (72.6)	173 (59.3)	120 (62.8)	277 (60.6)
Age					
20–39	198 (43.5)	91 (41.7)	135 (45.9)	102 (53.1)	226 (49.0)
40–59	189 (41.5)	103 (46.8)	110 (37.4)	78 (40.6)	185 (40.1)
60+	68 (15.0)	26 (11.8)	49 (16.7)	12 (6.3)	50 (10.9)
Gender					
Female	377 (84.1)	130 (59.9)	228 (78.4)	93 (49.0)	275 (60.0)
Male	71 (15.9)	87 (40.1)	63 (21.7)	97 (51.0)	183 (40.0)
Years in Practice					
In training	59 (12.9)	14 (6.4)	39 (13.4)	11 (5.8)	44 (9.6)
1–5	113 (24.7)	57 (26.2)	81 (27.8)	59 (30.1)	153 (33.3)
6–15	113 (24.7)	70 (32.1)	67 (23.0)	72 (37.7)	119 (25.9)
16+	172 (37.6)	77 (35.3)	104 (35.7)	49 (25.7)	143 (31.2)
Practice Setting^{****}					
Academic Center	332 (72.5)	115 (52.3)	187 (63.4)	153 (79.7)	277 (59.8)
Community Hospital	70 (15.3)	27 (12.3)	24 (8.1)	61 (31.8)	37 (8.0)

	Reproductive health providers [†]	Family Practice	Pediatrics/ Adolescent Medicine	Emergency Medicine	Internal Medicine ^{**}
	n (%)	n (%)	n (%)	n (%)	n (%)
Large Private Practice (>10 providers)	49 (10.7)	39 (17.7)	53 (18.0)	10 (5.2)	107 (23.1)
Small Private providers (10 providers)	35 (7.6)	35 (15.9)	29 (9.8)	1 (0.5)	19 (4.1)
Veteran's Hospital	1 (0.2)	7 (3.2)	0 (0.0)	3 (1.6)	28 (6.0)
Family Planning Clinic	26 (5.7)	2 (0.9)	2 (0.7)	0 (0.0)	0 (0.0)
Religiously-affiliated Institution	7 (1.5)	1 (0.5)	0 (0.0)	2 (1.0)	1 (0.2)
Other	20 (4.4)	15 (4.4)	13 (4.4)	1 (0.5)	22 (4.8)

* Specialty categories are exhaustive and mutually exclusive; respondents who selected more than one specialty are categorized according to the hierarchy listed here

[†] Includes gynecology and women's health

** Internal medicine includes internal medicine/pediatrics

*** Respondents chose all practice settings that apply, so the total exceeds 100%

Table 2
 Percentage of respondents who have ever heard of or ever recommend/provide emergency contraceptive methods, by specialty

	Levonorgestrel		Ulipristal Acetate		Yuzpe		Copper IUD	
	Heard of	Provide	Heard of	Provide	Heard of	Provide	Heard of	Provide
All Respondents	95.3	62.3	28.9	7.0	41.5	20.0	49.2	14.4
Specialty								
<i>p-value</i> †	***	***	***	***	***	***	***	***
Reproductive Health ‡	98.5	80.6	52.2	14.4	72.5	36.4	83.8	35.9
Family Practice	97.7	68.6	26.4	5.9	40.9	26.6	52.3	15.9
Pediatrics/Adolescent	96.3	54.9	23.7	4.1	34.2	14.0	31.5	4.8
Emergency Medicine	93.8	74.0	13.5	3.7	18.8	8.9	21.9	1.0
Internal Medicine	91.4	42.3	17.7	3.7	25.7	9.1	36.9	4.3

† *p*-values from Chi square test of association

‡ Includes gynecology/women's health

* significant at *p* <0.05;

** Significant at *p* <0.01;

*** Significant at *p* <0.001

Table 3

Multivariate Results: Ever heard of emergency contraceptive methods

	Copper IUD		Ulipristal Acetate		Levonorgestrel		Yuzpe	
	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI
Reproductive Health Specialists								
% women of reproductive age in practice								
All or most	2.93	1.00–8.58	3.67*	1.28–10.56	5.09	0.47–55.59	3.27*	1.25–8.52
About half	1.22	0.35–4.21	4.58*	1.36–15.48	1.98	0.14–27.82	2.09	0.67–6.59
Small proportion	ref		ref		ref		ref	
Provider type								
CNM, PA, NP	0.47*	0.24–0.90	0.66	0.39–1.12	3.22	0.31–33.00	0.35***	0.20–0.62
Resident or Fellow	1.67	0.40–7.06	0.78	0.39–1.54	0.16	0.00–5.79	0.69	0.30–1.56
Staff Physician	ref		ref		ref		ref	
Non-Reproductive Health Specialists								
Specialty								
Family Practice	1.88***	1.32–2.67	1.41	0.94–2.13	3.96**	1.51–10.38	1.84**	1.28–2.66
Pediatrics/Adolescent	0.75	0.53–1.05	1.45	0.98–2.14	2.16*	1.05–4.44	1.40	0.99–1.97
Emergency Medicine	0.42***	0.27–0.64	0.74	0.44–1.24	1.73	0.81–3.67	0.65	0.42–1.03
Internal Medicine	ref		ref		ref		ref	
% women of reproductive age in practice								
All or most	3.41***	2.00–5.81	5.96***	3.49–10.19	4.49	0.59–34.00	2.92***	1.71–4.96
About half	1.77***	1.31–2.39	1.94***	1.37–2.75	1.29	0.71–2.35	1.50*	1.10–2.05
Small proportion	ref		ref		ref		ref	
Provider type								
CNM, PA, NP	0.72	0.48–1.08	0.68	0.43–1.08	0.38**	0.19–0.73	0.33***	0.20–0.53
Resident or Fellow	1.44	0.93–2.23	1.33	0.78–2.29	1.91	0.56–6.50	1.57	0.99–2.50
Staff Physician	ref		ref		ref		ref	

Results shown from multivariate logistic regression; models include the following covariates: years in practice, practicing in an academic setting, and gender of provider

* Significant at $p < 0.05$;
** Significant at $p < 0.01$;
*** Significant at $p < 0.001$

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Table 4

Multivariate Results: Ever recommend or provide emergency contraceptive methods

	Copper IUD		Ulipristal Acetate		Levonorgestrel		Yuzpe	
	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI
Reproductive Health Specialists								
% women of reproductive age in practice								
All or most	3.85*	1.10–13.52	4.38	0.56–34.28	6.10****	2.32–16.06	2.30	0.79–6.68
About half	2.47	0.60–10.24	3.14	0.33–29.45	3.57*	1.06–11.97	0.62	0.17–2.28
Small proportion	ref		ref		ref		ref	
Provider type								
CNM, PA, NP	0.70	0.40–1.23	0.70	0.33–1.51	1.25	0.58–2.71	0.47**	0.27–0.83
Resident or Fellow	1.12	0.56–2.21	0.53	0.20–1.39	0.34*	0.15–0.78	0.78	0.38–1.60
Staff Physician	ref		ref		ref		ref	
Non-Reproductive Health Specialists								
Specialty								
Family Practice	4.49****	2.38–8.48	1.44	0.64–3.25	2.49****	1.72–3.62	3.25****	2.05–5.15
Pediatrics/Adolescent	0.87	0.41–1.84	1.02	0.46–2.26	1.71**	1.23–2.38	1.55	0.96–2.50
Emergency Medicine	0.23	0.05–1.02	1.21	0.46–3.17	4.84****	3.17–7.40	0.95	0.51–1.77
Internal Medicine	ref		ref		ref		ref	
% women of reproductive age in practice								
All or most	1.42	0.57–3.52	5.15****	2.29–11.58	3.00****	1.64–5.50	1.76	0.93–3.33
About half	1.10	0.59–2.04	1.05	0.50–2.20	1.74****	1.28–2.35	1.37	0.91–2.06
Small proportion	ref		ref		ref		ref	
Provider type								
CNM, PA, NP	0.29	0.09–1.00	0.86	0.35–2.12	0.32****	0.22–0.47	0.39**	0.21–0.73
Resident or Fellow	1.08	0.46–2.55	1.39	0.49–3.91	1.08	0.69–1.71	1.44	0.76–2.74
Staff Physician	ref		ref		ref		ref	

Results shown from multivariate logistic regression; models include the following covariates: years in practice, proportion of practice comprised of by women of reproductive age, practicing in an academic setting, and gender of provider

* Significant at $p < 0.05$;

** Significant at $p < 0.01$;

*** Significant at $p < 0.001$

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