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Implementing best practices for the provision of long-acting reversible contraception: a survey of obstetrician-gynecologists☆

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ABSTRACT

Objective: To examine obstetrician-gynecologists' practices regarding provision of long-acting reversible contraceptive (LARC) methods same-day, immediately postpartum, or to women under age 21.
Study design: Between August 2016 and March 2017, the American College of Obstetricians and Gynecologists (ACOG) sent 2500 of their members an electronic survey questionnaire regarding the provision of LARC methods. ACOG mailed nonresponders paper surveys.
Results: After exclusions, the final sample was 1280 respondents (52.2% response rate). Although 91% of obstetrician-gynecologists reported providing IUDs, only 29% (95% CI, 26–32%) offered same-day placement. Ninety-two percent (95% CI, 90–94%) offered IUDs to eligible patients under age 21. Nineteen percent (95% CI, 16.1–21.3%) offered immediate postpartum IUD placement and 21% (95% CI, 18–23%) offered immediate postpartum implant placement. Obstetrician-gynecologists practicing in states where Medicaid reimbursed for immediate postpartum LARC devices within the global fee for delivery (versus separate reimbursement) had lower odds of offering them.
Conclusion: While most ob-gyns are offering IUDs to women under age 21, many are still not offering them same-day. A minority of ob-gyns offer either IUDs or implants immediately postpartum, and there are important geographic and practice setting disparities in this practice.
Implications: Efforts to align LARC practices with published evidence and improve access to LARC methods for women desiring them will require a multipronged effort including continuing education of physicians, patient education and outreach, as well as advocacy to improve insurance coverage and reimbursement.

1. Introduction

Intrauterine devices (IUDs) and contraceptive implants are the most effective reversible contraceptives. Known as long-acting reversible contraceptives (LARCs), these methods are safe for a wide range of women, including nulliparous women and adolescents, and in the immediate postpartum and postabortion periods [1]. Uptake of LARC methods has increased over the last decade. Among reproductive-age women who use contraceptives, the proportion using LARC increased from 3.7% in 2007 to 8.5% in 2009 and 11.6% in 2012 [2,3]. Although this growth is promising, data from the HER Salt Lake Contraceptive Initiative suggests that financial, knowledge, and logistical barriers continue to prevent women interested in LARC methods from accessing them [4].

The American College of Obstetricians and Gynecologists (ACOG), the World Health Organization, and the Centers for Disease Control and Prevention recommend providing LARCs same-day, immediately postpartum, and to eligible adolescents and nulliparous women as best practices for LARC placement [1,5,6]. However, a 2010 ACOG survey found that obstetrician-gynecologists are under-utilizing these LARC access strategies [7,8].

Given recent efforts to improve access to LARC for women considering these contraceptive methods, this study aims to: (1) estimate the proportion of practicing ob-gyns providing IUDs and contraceptive implants for same-day placement, immediately postpartum, and to

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women under age 21, (2) identify covariates associated with physician provision in these situations, and (3) identify areas for continuing education related to contraception.

2. Materials and methods

2.1. Sample and study design

We selected 2500 ACOG Fellows and Junior Fellows to participate in this study, including 1000 members of the Collaborative Ambulatory Research Network (CARN). CARN is a demographically representative group of practicing ACOG members who voluntarily participate in survey research conducted by the ACOG Research Department [9]. To address possible selection bias within our CARN members, we opted to sample both CARN and non-CARN members. We randomly selected the 1000 CARN participants from a list of over 1400 current CARN member and selected 1500 non-CARN participants using a proportionate stratified sample by geographic distribution using ACOG districts. We determined the sample size by aiming for a response rate of at least 50%, yielding a sample of 1250 ob-gyns. The maximum margin of error in the estimation of proportions with a 95% confidence level in a random sample of this size is +/− 3%.

The Allendale Institutional Review Board approved this study. Between August and October 2016, ACOG invited participants via email with an electronic link to access an online survey administered through Qualtrics software (Qualtrics©, Provo, UT). In this email, we described this study as a survey on selected ob-gyn practices, asking participants how they manage patients with early pregnancy loss, unintended pregnancy and those seeking contraception, and included an opt-out link for recipients who were retired or did not wish to participate. The survey included 14 demographic questions and 11 questions about LARC methods. We sent email reminders once a week for 5 weeks to those who had not completed the survey, and one postcard reminder. We then sent a paper mailing to participants who had not completed the electronic survey, which contained a cover letter, a questionnaire, and a prepaid return envelope. Those who completed neither the electronic nor the mailed survey received a second mailing containing a shortened version of the questionnaire which included only three questions about LARC methods. We completed data collection in March 2017.

To ensure data entry accuracy, we randomly selected 5% of all mailed questionnaires for review. We found only one consistent data entry error (i.e., a coding error only on the shortened paper surveys), prompting all shortened surveys to be reviewed; we made appropriate corrections.

2.2. Data analysis

We performed statistical analysis using IBM SPSS Statistics 24.0 (IBM Corp©, Armonk, NY). We considered responses without a completed demographics section and at least two of the three header questions answered to be incomplete and recategorized respondents as opt-outs if they stated within the text boxes that they were retired. Additionally, we removed incorrectly-given responses (e.g. anyone who did not follow the skip logic correctly). Using US Census Bureau definitions, we categorized states into US regions; Puerto Rico was categorized as "South". We also categorized states by whether their Medicaid policy covered immediate postpartum LARC placement using global fees for delivery or separate reimbursement for the device, the placement or both using data from the Kaiser Family Foundation [10].

To identify factors affecting whether physicians offered same-day IUD placement, IUDs to patients under 21 years old, and immediate postpartum LARC, we conducted multivariate analyses using binary logistic regressions. We used both binary and categorical variables, with the largest category serving as the reference group, and excluded missing data. The initial regression models included all independent variables and we ran both forwards and backwards with extraneous variables excluded if their significance level was greater than 0.15. We ran consensus models to determine the final significance levels and odds ratios and used Naglekerke's R-squares to measure strength of association. For bivariate comparisons, we use independent-samples *t* tests to compare mean differences of continuous variables and chi-square test to compare categorical variables; we considered tests with an expected count of less than 5 within ≥25% of cells as invalid and did not report these results. All tests were considered statistically significant at $p<.05$.

3. Results

3.1. Response rate and demographic

Of the 2500 participants invited, 47 were retired, no longer in practice, no longer ACOG members, or unreachable by mail, leaving 2453 eligible participants. Of these participants, 1280 responded, yielding a 52.2% total response rate (66.8% CARN, 42.4% non-CARN). Seventy-eight respondents opted-out of participating and 131 responses were incomplete. Data analyses reflect the responses of 1149 participants. The majority of respondents were female (61.3%) and the average age was 52 (±11 years). Female respondents were younger than male respondents (female, mean age=48.4±9.7 years; males, mean age=

Table 1
Demographic characteristics of respondents and practice setting

Characteristic	*n* (%) or Mean ± S.D.
Age (*n*=1128)	52.4±10.9
30–45 years old	333 (29.5)
46–60 years old	505 (44.8)
61+ years old	290 (25.7)
Years in Practice (*n*=1065)	20.2±10.9
Gender (*n*=1129)	
Female	692 (61.3)
Male	437 (38.7)
Race (*n*=1130)	
White, non-Hispanic	872 (77.2)
Asian or Pacific Islander, non-Hispanic	91 (8.1)
Black or African American, non-Hispanic	58 (5.1)
Hispanic/Latino	56 (5.0)
Other, non-Hispanic (includes Multiracial and American Indian/Alaskan Native)	53 (4.7)
Region (*n*=1120)	
South	378 (33.8)
West	272 (24.3)
Midwest	256 (22.9)
Northeast	214 (19.1)
Primary medical specialty (*n*=1135)	
General obstetrics and gynecology	819 (72.2)
Gynecology	225 (19.8)
Obstetrics	91 (8.0)
Practice setting (*n*=1133)	
Ob-gyn partnership/group	627 (55.3)
University faculty practice	228 (20.1)
Solo private practice	156 (13.8)
HMO/staff model	90 (7.9)
Other (includes military, VA, other government setting)	32 (2.8)
Practice location (*n*=1131)	
Suburban	352 (31.1)
Urban, non-inner city	321 (28.4)
Urban, inner city	226 (20.0)
Mid-sized town (population of 10,000-50,000)	151 (13.4)
Rural	79 (7.0)
Military	2 (0.2)
Percentage of patients by insurance (*n*=885)	
Privately insured	59.2±26.5
Medicaid/Medicare	33.8±23.1
Uninsured	6.9±9.9
Patients per week (*n*=885)	75±46.2

58.7±9.8 years, p<.001). Additional demographics for the survey respondents are shown in Table 1.

Approximately half of the respondents (52.6%) were CARN members. The only significant differences in demographic characteristics between CARN and non-CARN members were by U.S. region (Northeast: 31.8% vs. 68.2%, respectively; Midwest: 61.7% vs. 38.3%; South: 52.6% vs. 47.4%; West: 61.8% vs. 38.2%; p<.001), age (mean 53.5 years vs. 51.2 years; p<.001), and years in practice (mean 21.0 years vs. 19.3 years; p=.008). There were no differences in their provision of LARC methods.

3.2. IUD placement practices

Almost all respondents (90.7%; 95% CI, 88.7–92.6%; *n*=824) reported offering IUDs. Of those who offered IUDs, 28.5% (95% CI, 25.5–31.7%) reported typically requiring only one patient visit to receive an IUD (same-day placement). Most (69.3%; 95% CI, 66.0–72.4%) reported requiring two visits and few reported requiring three or more visits (2.2%; 95% CI, 1.3–3.4%). This question was not included on the shortened survey; data analysis reflects 908 responses. Positive and negative associations for offering same-day IUD placement are reported in Table 2 (R-square=0.231).

Almost all ob-gyns (92.2%; 95% CI, 90.4–93.8%; *n*=1031) reported offering IUDs to patients under age 21 who were otherwise eligible for the method. Positive and negative associations are reported in Table 2 (R-square=0.284).

3.3. Immediate postpartum contraception

Most respondents (80.7%; 95% CI, 78.3–83.0%; *n*=907) reported providing obstetrical care. Of those who did, only 18.6% (95% CI, 16.1–21.3%; *n*=169) reported offering immediate postpartum IUD placement and 20.5% (95% CI, 17.9–23.3%; *n*=180) reported offering immediate postpartum implant placement (within 48 h of delivery, prior to discharge). The majority of those who reported offering either (IUD: 83.0%, 95% CI, 75.5–88.9%; implant: 71.0%, 95% CI, 62.9–78.3%) reported placing one 10 times or less within the last 12 months. 13.3% (95% CI, 8.1–20.3%) of those who reported offering IUDs reported placing one 11 to 25 times and 3.7% (95% CI, 1.2–8.4%) reported placing one 26 or more times. 17.2% (95% CI, 11.5–24.4%) of those who reported offering implants reported placing one 11 to 25 times and 11.7% (95% CI, 7.0–18.1%) reported placing one 26 or more times. Additionally, almost half of ob-gyns (48.0%) practiced in states where Medicaid policies reimbursed for immediate postpartum LARC devices separate from the global fee for delivery, and more than one third (35.9%) practiced in states where Medicaid covered immediate postpartum LARC placement fees separate from the global fee for delivery. Positive and negative associations for offering immediate postpartum IUDs and implants are reported in Table 3 (R-squares=0.440 and 0.364, respectively).

4. Discussion

This national survey of obstetrician-gynecologists found that those who implement best practices for LARC placement (i.e., same-day, immediately postpartum, and to women under age 21) were most likely to practice in the West, be younger, and practice in university faculty practices. This could indicate that younger ob-gyns and those who practice in university settings may be more familiar with the latest protocols and recommendations. Unfortunately, this also suggests that women may not have access to their preferred contraceptive methods depending on where they live and the setting where their ob-gyn practices.

Table 2
Proportion of ob-gyns who report offering IUDs for same-day placement and to patients under age 21; by selected demographic and practice characteristics

	Offering same-day IUD placement		Offering IUDs to patients under 21	
Characteristics	% or mean[a]	OR (95% CI)[b]	% or mean[a]	OR (95% CI)[c]
Age	49.4±10.4**	0.98* (0.96–0.99)	51.7±10.8**	0.96* (0.92–0.99)
Gender				
Female	30.7*		95.6**	1.00
Male	24.2*		86.8**	0.51 (0.25–1.07)
Race				
White, non-Hispanic	29.3	1.00	93.8	1.00
Asian or Pacific Islander, non-Hispanic	15.3	0.26* (0.11–0.61)	87.8	0.50 (0.17–1.51)
Black or African American, non-Hispanic	28.6	1.17 (0.54–2.51)	84.9	0.20* (0.07–0.64)
Hispanic/Latino	20.0	0.66 (0.25–1.72)	83.0	0.22* (0.08–0.64)
Other, non-Hispanic	39.5	1.33 (0.63–2.82)	91.8	0.42 (0.11–1.68)
Region				
South	19.0**	1.00	89.9*	
Midwest	31.9**	2.41** (1.49–3.88)	96.5*	
Northeast	21.9**	1.07 (0.62–1.85)	91.1*	
West	44.8**	4.54** (2.85–7.22)	92.7*	
Practice setting				
Ob-gyn partnership/group	23.7**	1.00	92.7**	1.00
Solo private practice	11.8**	0.37* (0.18–0.76)	80.0**	0.32* (0.16–0.65)
University faculty practice	48.1**	3.91** (2.43–6.29)	96.9**	7.58 (0.96–59.93)
HMO/staff model	42.1**	1.57 (0.85–2.93)	98.6**	2.61 (0.33–20.30)
Other	36.4**	2.06 (0.74–5.78)	96.2**	0.75 (0.09–6.47)
Practice location				
Suburban	22.6*	1.00	91.7	
Urban, inner city	32.2*	1.06 (0.61–1.84)	90.8	
Urban, non-inner city	37.1*	1.54 (0.98–2.41)	93.4	
Mid-sized town (pop. 10,000-50,000)	18.7*	0.86 (0.47–1.58)	94.2	
Rural	32.8*	1.83 (0.95–3.53)	90.7	
Percentage of insurance patients				
Medicaid/Medicare	37.0±23.0*		33.9±22.9*	1.02* (1.00–1.04)
Privately insured	55.3±27.0*		59.6±26.5	
Uninsured	7.8±11.2		6.5±9.7*	0.98* (0.95–0.99)

*p<.05, ** p<.001.
a. These columns show bivariate tests of significance.
b. Multivariate analysis of offering same-day IUD placement included the following variables: age, race/ethnicity, region, practice setting, and practice location.
c. Multivariate analysis of offering IUDs to patients under 21 included age, gender, race/ethnicity, practice setting, and percentage of insurance patients.

Table 3
Proportion of ob-gyns who report offering immediate postpartum LARC; by selected demographic and practice characteristics

Characteristics	Immediate postpartum IUD		Immediate postpartum implant	
	% or mean[a]	OR (95% CI)[b]	% or mean[a]	OR (95% CI)[c]
Age	49.4±11.0*		49.5±11.1*	
Gender				
Female	21.3*	1.00	23.4*	
Male	13.9*	0.58 (0.33–1.02)	15.5*	
Region				
South	12.0**	1.00	13.0**	1.00
Midwest	15.8**	1.83 (0.85–3.97)	19.2**	1.85 (0.89–3.84)
Northeast	23.3**	1.80 (0.79–4.08)	25.0**	1.42 (0.63–3.19)
West	26.6**	5.60** (2.57–12.23)	28.4**	3.93** (1.89–8.17)
Medicaid reimbursement policy				
Separate fee for LARC devices	26.7**	1.00	25.9**	1.00
Global fee for LARC devices	14.6**	0.41* (0.24–0.70)	17.7**	0.51* (0.31–0.86)
Practice setting				
Ob-gyn partnership/group	7.9**	1.00	10.2**	1.00
Solo private practice	2.1**	0.17 (0.02–1.30)	3.2**	0.14 (0.02–1.09)
University faculty practice	51.9**	22.86** (11.59–45.06)	54.7**	11.68** (6.33–21.54)
HMO/staff model	22.1**	3.77* (1.62–8.75)	27.0**	2.54* (1.12–5.79)
Other	44.4**	8.03** (2.65–24.30)	25.9**	1.22 (0.35–4.22)
Practice location				
Urban, inner city	38.1**		39.3**	
Urban, non-inner city	18.1**		22.5**	
Suburban	12.0**		9.4**	
Mid-sized town (pop. 10,000-50,000)	9.6**		10.7**	
Rural	13.8**		23.8**	
Percentage of insurance patients				
Medicaid/Medicare	44.0±23.9**		46.0±23.4**	
Privately insured	47.0±28.0**	0.99 (0.98–1.00)	44.4±26.9**	0.99* (0.98–0.99)
Uninsured	8.9±11.3*		9.6±11.1*	

*p<.05, **p<.001.
a. These columns show bivariate tests of significance.
b. Multivariate analysis of offering immediate postpartum IUD included the following variables: gender, region, Medicaid reimbursement policy, practice setting, and percentage of insurance patients.
c. Multivariate analysis of offering immediate postpartum implant included region, Medicaid reimbursement policy, practice setting, and percentage of insurance patients.

When compared to results from a 2010 study of ACOG Fellows and Junior Fellows, these results demonstrate a substantial increase in LARC provision. Twice as many respondents offered same-day LARC placement than respondents from the previous study did (28.5% vs. 13.1%, respectively) [8]. Nearly a fifth of our respondents offer the IUD immediately postpartum, whereas only 7.2% of respondents in the previous study provided them [7]. And while only two-thirds of previous respondents offered IUDs to nulliparous women and less than half offered IUDs to adolescents [7], almost all the respondents offered IUDs to patients under age 21, likely representing an openness to providing to nulliparous and adolescent patients. Though this is not a true longitudinal study, as we did not sample the same cohort, this increase demonstrates progress toward increasing LARC method accessibility and helping patients obtain their preferred contraceptive method.

Although these changes are a great improvement, many ob-gyns still do not provide same-day IUDs, despite evidence-based recommendations [1,6]. Existing research demonstrates that one of the most common reasons that women who desire LARC do not receive one is the requirement to return for an additional visit for placement [11–14]. This prevents women from accessing their preferred contraceptive method, possibly increasing their risk of unintended pregnancy. The lack of same-day placements could also limit an ob-gyn's capacity to offer the copper IUD for emergency contraception [15,16]. Improving same-day placement rates requires continued efforts to improve ob-gyn education, payment policy, and evidence-based practice.

Despite the passage of the Patient Protection and Affordable Care Act, cost remains a major barrier for those without health insurance coverage and those seeking immediate postpartum LARC [17]. Reimbursement for LARC devices separate from the global fee for delivery incentivizes immediate postpartum LARC provision [18,19]. Consistent with existing research, this study found that ob-gyns who practiced in states where Medicaid reimburses for immediate postpartum LARC devices separate from the global fee were more likely to offer immediate postpartum LARC placement than ob-gyns in states without separate reimbursement. Thirty-six state Medicaid programs have published guidance supporting immediate postpartum LARC provision, with many reimbursing for LARC devices separate from the global fee for delivery [10,20]. Within states lacking separate reimbursing, advocating for state Medicaid programs to reimburse immediate postpartum LARC devices separate from the global fee should be prioritized. This could increase access for both Medicaid beneficiaries and women with private insurance, as Medicaid reimbursement policy often influences private insurance benefits [18]. Simultaneously, efforts to provide clinician training and technical assistance to implement the systems changes needed to support immediate postpartum placement should be increased, given that rates of offering immediate postpartum LARC are low, even in states with supportive reimbursement policies [21].

Our study has several strengths. We made multiple attempts to obtain data from potential participants, enabling us to reach our desired sample size. The response rate for the CARN sample was particularly high. Despite these strengths, there are limitations. Although we achieved an adequate response rate to assess the intended outcomes, respondents may be inherently different from nonrespondents. Additionally, this study relies on self-reported data, which could be limited by respondent recollection and desirability bias. Finally, this survey did not examine barriers to same-day LARC placement, including time, requiring prior authorization, and a lack of on-site laboratory services, which may impact respondents' provision of LARC methods. Further research is needed to better understand what other logistical barriers could impact access to LARC methods.

While the proportion of ob-gyns implementing best practices for LARC placement has increased, especially for women under age 21, many are still not offering LARC methods same-day or immediately postpartum. Increasing access to LARC methods will most likely require

a multipronged approach that includes continued education of ob-gyns on the benefits of same-day LARC placement and advocating for payment policies that support LARC access.

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