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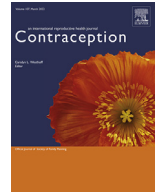
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Original Research Article

Contraceptive plans before preoperative assessment and at procedure in surgical abortion patients ☆☆☆

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ABSTRACT

Objective: To describe changes in contraceptive method plans pre-appointment, after counseling, and post-procedure in patients having an abortion.

Study Design: We reviewed electronic medical records of University of California, Davis Health patients who had an operating room abortion from January 2015 to December 2016. We excluded persons with procedures for fetal anomaly or demise. We extracted patient demographics and contraceptive plans reported at each encounter (telephone intake, pre-operative appointment, and day of abortion). We evaluated individual contraceptive plans across the encounters, identified patient characteristics that contributed to plan change, and created a multivariable logistic regression model for predictors of contraception method plan change from telephone intake to post-procedure.

Results: The 747 patients had a mean gestational age of $16\ 4/7 \pm 5\ 0/7$ weeks with 244 (32.7%) <15 weeks and 235 (31.5%) ≥ 20 weeks. At telephone intake, 273 (36.4%) wanted a long-acting method (139 [50.9%] intrauterine device [IUD]; 99 [36.3%] implant; 35 [12.3%] unspecified), 11 (3.9%) permanent contraception, and 248 (33.2%) a less effective or no method; 215 (28.8%) stated they were undecided. Most (357/433 [82.4%]) patients who planned a reversible method based on the telephone intake obtained that or a similar method. Of the 273 patients planning a long-acting method, 258 (94.5%) received an IUD (158 [40.9%]) or implant (100 [36.6%]). Of the 215 undecided patients, 88 (40.9%) received an IUD and 55 (25.6%) an implant. No demographic factors predicted a change in method plan.

Conclusions: Most patients will receive the method they initially identified at the telephone intake after an abortion, especially those planning an IUD or implant. Undecided patients are commonly open to discussing options.

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1. Introduction

Increasing contraception access, specifically, long-acting reversible contraception (LARC), is often linked to a decline in unintended pregnancies [1–3]; accordingly, providing contraceptive counseling at the time of abortion visits is a seemingly effective public health strategy. A survey study of persons with an abortion in the prior 5 years found that most reported they desired or expected contraceptive counseling during their appointment and two-thirds of those hoped to leave the appointment with a contraceptive method [4]. The investigators reported that patients with a prior abortion more frequently left with a contraceptive method but found no association of patients' intentions for future pregnancy or desire to avoid pregnancy with a desire to receive contraception at the appointment.

Providers could interpret this data as a mandate to provide contraception counseling when patients with an unintended pregnancy present for abortion; after all, these persons must not want to face another unintended pregnancy. However, patients don't commonly agree with this authoritarian approach. Among patients presenting for a first trimester surgical abortion, 60% to 65% do not want to discuss contraception during that visit; 52% to 53% of these people cited their reason to be that they already knew what type of contraception they wanted [5,6]. Still, about 70% of these patients report they wanted to leave the clinic with a contraceptive method [6]. Furthermore, when contraceptive counseling is perceived by patients as a coercive measure to increase contraceptive uptake, tensions develop when the conversation might have otherwise been well received [7].

Since patients commonly state that they already have a contraception plan, we aimed to better understand what methods they planned before the preprocedure appointment and after counseling (if desired/accepted) and the method received. Specifically, we hoped to better understand what proportions of patients planned LARC prior to the appointment and only after counseling. Secondly, we wanted to identify any characteristics that would suggest a benefit from counseling.

2. Materials and methods

We conducted a retrospective review of electronic medical records of patients at the University of California, Davis Medical Center who had a surgical abortion in the operating room from January 2015 to December 2016. We used our billing database (ICD-9 codes 59840 and 59841) to identify patients. The University of California, Davis Institutional Review Board reviewed the study and considered the project as exempt.

At our institution, we provide procedures for any indication through 23 weeks 6 days gestation. Patients who contact our office for a procedure speak with our Family Planning Coordinator who obtains necessary information, including what method, if any, the patient is planning for contraception. The coordinator schedules an in clinic preoperative assessment and operating room date (typically the day after the preoperative assessment) for patients 15 weeks gestation or more and those less than 15 weeks who desire a procedure in the operating room. In the clinic, physicians typically ask patients if they wanted contraceptive counseling and, if not, what method they planned (if any). Physicians provided contraceptive counseling to those who wanted information and typically used the World Health Organization (WHO) contraceptive counseling chart as a tool to explain options available based on the patient's medical status and varying efficacy [8]. Physicians typically provided prescriptions for patients who desired pills, patches, or rings at the preoperative visit. Nurses typically provided injectable methods during or after the procedure (in the recovery room). Surgeons placed LARC methods in the operating room at the end of the procedure.

Study investigators (BR, ATM) reviewed records to extract age, race, gestational age at clinic visit, most recent contraceptive method(s), marital status, past obstetric history, reason for procedure (choice, demise, anomaly), chronic medical problems, and contraception plans at each encounter for the abortion: (1) telephone intake by nonmedical staff, who routinely recorded patients' intended contraception methods; (2) preoperative appointment (plan listed at the end of the encounter); and (3) day of abortion (method received/still planned [if any]). We excluded patients with no coordinator call documentation of planned contraceptive method (emergent add-on procedures), with a diagnosis of pregnancy loss/demise or fetal anomalies, and who did not have an abortion procedure. For any patients with more than one surgical

abortion in the operating room during the study period, we only included the first encounter.

For analysis of contraceptive method type, we used the WHO and CDC definitions of contraception tiers based on relative effectiveness, with tier 1 including both reversible (intrauterine, implantable, and unspecified LARC) and permanent methods, tier 2 including ring, patch, oral or injectable contraception, and tier 3 including barrier and fertility-based awareness methods [8–10]. We used Fisher's exact and chi-square tests as appropriate to test for associations between groups. We created a multivariable logistic regression model for predictors of contraception method plan change from telephone intake to postprocedure among patients using demographic variables with a univariate p -value <0.1 . We performed all analyses using SAS software version 9.4 for Windows (SAS Institute Inc., Cary, NC).

3. Results

Of 948 charts identified, we excluded 211 (102 anomaly, 11 demise, 83 without coordinator call information, and 5 second procedures), leaving 747 persons in our analysis. The baseline demographics of the study population are summarized in Table 1 for the overall population and in more detail, including differences between those patients with and without an initial contraception plan, in Online Appendix Table 1.

Contraception plans at time of telephone intake, preoperative clinic visit, and postprocedure are presented in Table 2. At telephone intake, 532 (71.2%) patients indicated a contraceptive plan; 284 (53.3%) preferred a tier 1 (11 [2.1%] permanent contraception), 151 (28.4%) tier 2, 9 (1.7%) tier 3, and 88 (16.5%) no method. On the day of the procedure, 7 patients ultimately wanted a permanent contraceptive procedure, including 4 of the original 11 who indicated a plan for permanent contraception at the telephone intake. Postprocedure, 690 of 740 (93.2%) patients who did not plan a permanent method received reversible contraception; 485 (70.3%) received a tier 1, 180 (26.1%) tier 2, and 25 (3.6%) tier 3 method. Overall, 485 of 747 (64.9%) of the total population received a reversible tier 1 method (291 [39.0%] IUD and 194 [26.0%] implant). Most (258/273 [94.5%]) persons who planned a reversible tier 1 method received an IUD or implant, and these 258 patients comprised about half (53.2%) of the 485 total patients who received an intrauterine device (IUD) or implant after the procedure. The next largest plurality of patients who received a tier 1 method had been undecided about their method ($n = 143$ [29.5%]). Overall, 357 of 433 (82.4%) patients who planned a reversible tier 1, 2 or 3 method based on the telephone intake obtained a method in that tier. The overall proportion of patients who changed their plan from telephone intake to postsurgical abortion by method tier is presented in Table 3. In multivariable analysis, we found no factors that significantly predicted a change in contraception plan with counseling among those patients who stated a preference at telephone intake (Online Appendix Table 2). The need for insurance authorization for LARC had a modest effect on changing the contraceptive plan; 24 of 65 (44.3%) who needed authorization changed their plan while 120 of 467 (35.9%) who did not need authorization changed their plans (adjusted odds ratio 1.70 [95% confidence interval 0.98–2.94]).

4. Discussion

Most (71%) patients receiving an abortion had a contraception plan, including no method, prior to arriving at the clinic for their preoperative visit. About half (53%) of all IUDs and implants provided after the abortion occurred in patients who already planned a LARC method.

Table 1
 Characteristics of patients having a surgical abortion in an operating room setting during 2015–2016 at the University of California, Davis

	N = 747
Age (years)	27.4 ± 6.5
<20	80 (10.7)
20–24	203 (27.2)
25–29	186 (24.9)
30–34	163 (21.8)
≥35	115 (15.4)
Gestational age (weeks)	16 4/7 ± 5 0/7
<15	244 (32.7)
15–19 6/7	268 (35.9)
≥20	235 (31.5)
BMI (kg/m ²)	28.9 ± 7.8
<30.0	458 (61.3)
≥30.0	289 (38.7)
Union status	
Single	609 (81.5)
Married	116 (15.5)
Divorced	22 (2.9)
Ethnicity/Race	
Non-Hispanic White	219 (29.3)
Non-Hispanic Black	160 (21.4)
Non-Hispanic Other*	78 (10.4)
Hispanic	166 (22.2)
Not reported	124 (16.6)
Insurance	
Public	661 (88.5)
Private	86 (11.5)
Insurance authorization needed for LARC†	
Yes	86 (11.5)
No	661 (88.5)
Prior births	
0	204 (27.3)
1	205 (27.4)
≥2	338 (45.2)
Lifetime abortions	
0	332 (44.4)
1	187 (25.0)
≥2	228 (30.5)

Data presented as n (%) or mean ± standard deviation.
 LARC, long-acting reversible contraception (includes intrauterine and implantable contraceptives).
 * “Non-Hispanic other” refers to Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander.
 † Whether health insurance preprocedure approval required for LARC provision.

Of the 29% of patients that stated they were undecided about a contraceptive method at the time of telephone intake, almost all (92%), opted for a contraceptive method postoperatively. Our data provides validation that patients come with the openness to discuss options when undecided, while those that have a contraception plan, either for a specific method or none, commonly stay with that plan. Notably, of the 88 patients who did not want contraception at time of telephone intake, 69% opted for a contraceptive method. Although we strive to not coerce patients during counseling, it is possible that some of these choices reflect unintentional coercion.

We found no demographic characteristics predictive of changing the contraceptive plan from the intake call to postprocedure. However, the need for insurance preauthorization for LARC methods, approached significance (OR 1.70 [95% CI 0.98–2.94]) even though a minority (11.5%) of our patients required preauthorization. This requirement negatively impacts choice at a time when a patient may want an IUD or implant immediately after the procedure. This finding may be informative for future research, potentially with an

Table 2
 Contraception plan patterns of abortion patients at time of preoperative visit and procedure based on preference specified at pre-evaluation telephone intake during 2015–2016 at the University of California, Davis (N = 747)

	Contraception plan at time of telephone intake							
	Tier 1 IUD n = 139	Tier 1 implant n = 99	Tier 1 IUD or implant n = 35	Tier 1 (permanent) n = 11	Tier 2† n = 151	Tier 3‡ n = 9	None n = 88	Undecided n = 215
Contraception plan at preoperative visit*								
Tier 1 IUD	120 (86.3)	19 (19.2)	20 (57.1)	1 (9.1)	26 (17.2)	0	18 (20.4)	96 (44.7)
Tier 1 implant	13 (9.4)	77 (77.8)	9 (25.7)	0	29 (19.2)	2 (22.2)	8 (9.1)	53 (24.7)
Tier 1 IUD or implant	5 (3.6)	0	0	1 (9.1)	0	0	0	0
Tier 1 permanent	0	0	0	5 (45.5)	2 (1.3)	0	2 (2.3)	2 (0.9)
Tier 2†	1 (0.7)	3 (3.0)	5 (14.2)	2 (18.2)	89 (58.9)	2 (22.2)	23 (26.1)	39 (18.1)
Tier 3‡	0	0	0	2 (18.2)	0	5 (55.6)	8 (9.1)	5 (2.3)
None	0	0	0	0	0	0	23 (26.1)	3 (1.4)
Undecided	0	0	1 (2.9)	0	5 (3.3)	0	6 (6.8)	17 (7.9)
Contraception postprocedure								
Tier 1 IUD	122 (87.8)	17 (17.2)	19 (54.3)	1 (9.1)	24 (15.9)	0	20 (22.7)	88 (40.9)
Tier 1 implant	14 (10.1)	78 (78.8)	8 (22.9)	0	27 (17.9)	2 (22.2)	10 (11.4)	55 (25.6)
Tier 1 permanent	0	0	0	4 (36.4)	1 (0.7)	0	0	2 (0.9)
Tier 2†	2 (1.4)	3 (3.0)	7 (20.0)	3 (27.3)	95 (62.9)	2 (22.2)	21 (23.9)	47 (21.9)
Tier 3‡	0	0	0	2 (18.2)	2 (1.3)	5 (55.6)	10 (11.4)	6 (2.8)
None	1 (0.4)	0	0	1 (9.1)	2 (1.3)	0	25 (28.4)	12 (5.6)
Undecided	0	1 (0.4)	1 (2.9)	0	0	0	2 (2.2)	5 (2.3)

Data presented as n (%).

Bolded text highlights a pattern of maintaining a plan for contraceptive methods with similar efficacy as the choice specified at the time of the telephone encounter.

*Plan documented at the end of encounter.

† Includes ring, patch, oral or injectable contraception.

‡ Includes condoms and fertility-based awareness methods.

Table 3

Proportion of patients with a method plan at telephone intake who changed their contraceptive method postsurgical abortion during 2015–2016 at the University of California, Davis

Contraceptive Method Plan at Telephone Intake	Number of subjects	Changed Contraception Plan* n (%)
Tier 1 [†]	284	15 (5.3)
Tier 2 [‡]	151	56 (37.1)
Tier 3 [#]	9	4 (44.4)
None	88	63 (71.6)

* Changed to a different tier or none.

[†] Includes intrauterine device, implant or permanent contraception.

[‡] Includes ring, patch, oral or injectable contraception.

[#] Includes condoms and fertility-based awareness methods.

even larger dataset, as such an outcome could be beneficial for future policy decisions.

Overall, 65% of the total population received a reversible tier 1 method (39% IUD and 26% implant). Patients had a procedure in the operating room with deep sedation which may influence contraceptive decisions, especially related to IUD uptake; with anesthesia, patients may have been more amenable to consider IUD placement. With this in mind, we expected significantly more IUD than implant uptake yet only 60% of tier 1 methods placed were IUDs. These patient choices demonstrate the importance of offering all tier 1 methods at the time of an abortion in an operating room setting.

The 65% IUD and implant (tier 1) uptake in our population, which mostly had no insurance restrictions for method choice, is similar to the 64.5% rate reported among 1662 first trimester abortion patients eligible for no cost contraception at a Colorado university-based clinic from 2009 to 2013 [11]. A prior study from 25 clinical facilities in Northern California from 2007 to 2013, which included 19,673 first trimester abortion patients with insurance limitations, demonstrated 21% tier 1 method uptake [12]. A study of 26,858 procedures from 2012–2017 at Planned Parenthood League of Massachusetts clinics through 21 weeks, most with full access to no-cost contraception, reported 25.4% LARC uptake; however, the authors did not clarify the gestational age proportions for the study population [13]. Our study analyzed patient data from 2015–2016; this time frame still reflects current practice. These studies, taken together, show a wide variation in uptake, even when contraception is available at no cost. None of these prior trials accounted for baseline contraceptive plans when evaluating uptake, which may be the reason for the differences between outcomes.

Our study is limited by its retrospective design which used free-text medical notes to identify relevant data. However, we used standardized templates for telephone intake, clinic visit and procedure notes which include sections for obtaining the contraceptive information used in this analysis. As a retrospective study, we lack information on the influence of prior method use on contraceptive decision-making at the time of abortion. Also, we could not discern if any changed their minds between the telephone intake and the appointment or why people changed their minds; for example, the few women who planned an IUD initially and did not get one may have been influenced by insurance coverage, or just opted for a different method. Similarly, we did not identify how many changed their planned method due to a medical contraindication recognized during the visit. Importantly, since we are a referral center, it is possible that some patients may have received some counseling from health care providers before talking to our intake coordinator. Another limitation is that we could not confirm method initiation for persons planning pills, patches, rings or tier 3 methods. Additionally, our method of counseling was rou-

tine, but not strictly scripted, meaning we could not evaluate how variations in length of time spent, depth of information provided, and interpersonal interactions that may have influenced individuals' contraception plans. Lastly, our study population included patients with an average age of 27.4 years and gestational age of approximately 17 weeks having abortions in an operating room setting; most (89%) patients had public insurance and most (89%) did not need additional authorization for LARC. Our findings may only reflect the outcomes in populations with similar characteristics.

Our key findings are that the majority of those who identified a plan for LARC at the time of telephone intake received LARC post-operatively, patients who plan a less effective method at telephone intake are more likely to change to a different method than patients who plan a tier 1 method, and that patients who are undecided or do not initially plan contraception are frequently open to discussing options and commonly choose highly effective options when made readily available. Importantly, only about half of LARC method use after a surgical abortion is related to counseling as half already wanted a LARC method. When we evaluate programs aimed at improving contraceptive uptake after abortion, we must consider that patients commonly have a contraception plan, so counseling is not always the primary factor related to method uptake.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:[10.1016/j.contraception.2021.10.008](https://doi.org/10.1016/j.contraception.2021.10.008).

References

- [1] Ricketts S, Klingler G, Schwalberg R. Game change in Colorado: widespread use of long-acting reversible contraceptives and rapid decline in births among young, low-income women. *Perspect Sex Reprod Health* 2014;46(3):125–32. doi:[10.1363/46e1714](https://doi.org/10.1363/46e1714).
- [2] Birgisson NE, Zhao Q, Secura GM, Madden T, Peipert JF. Preventing unintended pregnancy: the contraceptive CHOICE project in review. *J Womens Health (Larchmt)* 2015;24(5):349–53. doi:[10.1089/jwh.2015.5191](https://doi.org/10.1089/jwh.2015.5191).
- [3] Gyllenberg F, Juselius M, Gissler M, Heikinheimo O. Long-acting reversible contraception free of charge, method initiation, and abortion rates in Finland. *Am J Public Health* 2018;108(4):538–43. doi:[10.2105/AJPH.2017.304280](https://doi.org/10.2105/AJPH.2017.304280).
- [4] Kavanaugh ML, Carlin EE, Jones RK. Patients' attitudes and experiences related to receiving contraception during abortion care. *Contraception* 2011;84(6):585–93. doi:[10.1016/j.contraception.2011.03.009](https://doi.org/10.1016/j.contraception.2011.03.009).
- [5] Matulich M, Cansino C, Culwell KR, Creinin MD. Understanding women's desires for contraceptive counseling at the time of first-trimester surgical abortion. *Contraception* 2014;89(1):36–41. doi:[10.1016/j.contraception.2013.09.013](https://doi.org/10.1016/j.contraception.2013.09.013).
- [6] Cansino C, Lichtenberg ES, Perriera LK, Hou MY, Melo J, Creinin MD. Do women want to talk about birth control at the time of a first-trimester abortion? *Contraception* 2018;98(6):535–40. doi:[10.1016/j.contraception.2018.08.005](https://doi.org/10.1016/j.contraception.2018.08.005).
- [7] Purcell C, Cameron S, Lawton J, Glasier A, Harden J. Contraceptive care at the time of medical abortion: experiences of women and health professionals in a hospital or community sexual and reproductive health context. *Contraception* 2016;93(2):170–7. doi:[10.1016/j.contraception.2015.09.016](https://doi.org/10.1016/j.contraception.2015.09.016).
- [8] Steiner MJ, Trussell J, Johnson S. Communicating contraceptive effectiveness: an updated counseling chart. *Am J Obstet Gynecol* 2007;197(1):118. doi:[10.1016/j.ajog.2007.03.049](https://doi.org/10.1016/j.ajog.2007.03.049).
- [9] Organization World Health. Family planning: a global handbook for providers. World Health Organization, Department of Reproductive Health and Research. Center for Communication programs, Knowledge for Health Project, Baltimore: John Hopkins Bloomberg School of Public Health; 2018. Available from <https://www.fphandbook.org>. Accessed June 29, 2021.
- [10] Curtis KM, Jatlaoui TC, Tepper NK, Zapata LB, Horton LG, Jamieson DJ, et al. U.S. selected practice recommendations for contraceptive use. *MMWR Recomm Rep* 2016;65(RR-4):1–66. doi:[10.15585/mmwr.r6504a1](https://doi.org/10.15585/mmwr.r6504a1).
- [11] Fang NZ, Sheeder J, Teal SB. Factors associated with initiating long-acting reversible contraception immediately after first-trimester abortion. *Contraception* 2018;98(4):292–5. doi:[10.1016/j.contraception.2018.06.001](https://doi.org/10.1016/j.contraception.2018.06.001).
- [12] Biggs MA, Taylor D, Upadhyay UD. Role of insurance coverage in contraceptive use after abortion. *Obstet Gynecol* 2017;130(6):1338–46. doi:[10.1097/AOG.0000000000002361](https://doi.org/10.1097/AOG.0000000000002361).
- [13] Roe AH, Fortin J, Janiak E, Maurer R, Goldberg AB. Prevalence and predictors of initiation of intrauterine devices and subdermal implants immediately after surgical abortion. *Contraception* 2019;100(2):89–95. doi:[10.1016/j.contraception.2019.05.001](https://doi.org/10.1016/j.contraception.2019.05.001).