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Medicaid and Fulfillment of Desired Postpartum Sterilization

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Abstract

Objective—We sought to assess fulfillment of sterilization requests while accounting for the complex interplay between insurance, clinical, and social factors in a contemporary context that included both inpatient and outpatient postpartum sterilization procedures.

Study Design—This is a retrospective single-center cohort chart review study of 1,331 women with a documented contraceptive plan at time of postpartum discharge of sterilization. We compared sterilization fulfillment within 90 days of delivery, time to sterilization, and rate of subsequent pregnancy after non-fulfillment between women with Medicaid and women with private insurance.

Results—475 of 1,030 Medicaid-insured and 100 of 154 privately insured women received postpartum sterilization (46.1% vs 64.9%, $p<0.001$). Women with Medicaid had a longer time from delivery to completion of the sterilization request ($p<0.001$). After adjusting for age, parity, gestational age, mode of delivery, adequacy of prenatal care, race/ethnicity, marital status, and education level, private insurance status was not associated with either sterilization fulfillment (OR 0.94, 95% C.I. 0.54–1.64) or time to sterilization (HR 1.03, 95% C.I. 0.73–1.34). Of the 555 Medicaid-insured women who did not receive a postpartum sterilization, 267 (48.1%) had valid Title XIX sterilization consent forms at time of delivery. Of women who did not receive sterilization, 132 of 555 Medicaid patients and 5 of 54 privately insured patients became pregnant within one year (23.8% vs 9.3%, $p=0.023$).

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Conclusion—Differences in fulfillment rates of postpartum sterilization and time to sterilization between women with Medicaid versus private insurance are similar after adjusting for relevant clinical and demographic factors. Women with Medicaid are more likely than women with private insurance to have a short interval repeat pregnancy after an unfulfilled sterilization request.

Implications—Efforts are needed to ensure that Medicaid recipients who desire sterilization receive timely services.

Keywords

sterilization; postpartum contraception; disparity

Introduction

Approximately 50 percent of women requesting a postpartum sterilization do not undergo the desired procedure, and approximately 50% of these women become pregnant within a year of delivery [1–3]. Compared with women who did not request postpartum sterilization, women with unfulfilled sterilization requests experience twice the rate of pregnancy within one year of delivery [4]. The short interval pregnancies (less than 18 months between pregnancies) that result are associated with maternal and neonatal morbidity and mortality [5–8].

Furthermore, women with Medicaid are disproportionately impacted by both sterilization non-fulfillment and unintended pregnancy compared to women with private insurance [3,5]. One potential cause of this disparity is the federal policy surrounding sterilization for Medicaid patients that arose in response to a eugenics movement in the 1970s. This federal policy mandates that a specific Title XIX sterilization consent form be signed by both the patient and the provider as well as requires a waiting period between when the form is signed and when sterilization can occur [2]. Prior work has identified the requirement for this form and the associated waiting period as a barrier to sterilization fulfillment for the Medicaid population [3,9–11].

However, these prior studies focused narrowly on either sterilization fulfillment or subsequent unintended pregnancy alone [9,12,13], excluded women on the basis of pregnancy outcomes such as preterm birth or multiple gestation [4,9,12–14], evaluated only those sterilization procedures occurring prior to discharge after delivery [4,9,12,13], and/or encompassed a smaller number of women (range 87–927) [4,9,12–14]. Recent policy changes resulting from Medicaid expansion as well as an increased focus on the availability of long-acting reversible contraception may also impact the desire for and availability of permanent sterilization.

Our goal was to assess fulfillment of sterilization requests, timing of completion, and impact of non-fulfillment on the occurrence of subsequent short interval pregnancy while accounting for the complex interplay between insurance, clinical, and social factors in a contemporary context that included both inpatient and outpatient postpartum sterilization procedures. We felt inclusion of both inpatient and outpatient postpartum sterilization was crucial to account for the full range of contraceptive counseling and decision-making

between a patient and physician, especially given the rise in popularity of minimally-invasive outpatient sterilization [9,13–15]. We hypothesized that women with Medicaid insurance would have lower rates of sterilization fulfillment and longer times to sterilization fulfillment, despite controlling for other demographic and clinical factors, as well as increased rates of subsequent short interval repeat pregnancy than those with private insurance.

Materials and Methods

Sample

This is a retrospective cohort study of women delivered at or beyond 20 weeks of gestation from January 1, 2012 through December 31, 2014 at our urban, tertiary-care teaching hospital. We reviewed each subject's electronic medical record for demographic and clinical characteristics as well as for documentation of contraceptive counseling and plan achievement up to one year after delivery. We reviewed both the outpatient and inpatient medical records as these are linked in one electronic medical record in our healthcare system. Approximately 10% of patients either are seen antenatally but do not deliver at our hospital or deliver at our hospital but did not receive antenatal care within our system.

For this analysis, we included only women with sterilization as the documented contraceptive plan. We defined documented contraceptive plan as the plan documented in the discharge summary or the last inpatient postpartum progress note if not documented in the discharge summary. Contraceptive plan is a required field in our discharge summary. Rarely, the physician completing the discharge summary erased this field from the note and therefore, the last inpatient postpartum progress note was utilized to abstract the documented contraceptive plan. All study subjects had a contraceptive plan documented in one of these two places in the electronic medical record.

For women with more than one delivery in the study timeframe with sterilization as the contraceptive plan, only the first pregnancy was included. We excluded patients who suffered peripartum mortality as well as any that were sterilized prior to the study (but utilized in vitro fertilization for the delivery within the study timeframe) as their sterilization requests did not need to be fulfilled.

Women with Medicaid due to pregnancy are eligible for Medicaid coverage for up to six weeks after delivery in our state of Ohio. This coverage includes comprehensive contraceptive coverage, including long-acting reversible contraception and sterilization. Inpatient postpartum long-acting reversible contraception was not available at our hospital (or any other hospital in our region) at time of this study.

Outcomes

We recorded sterilization fulfillment as a binary outcome if it occurred within 90 days of delivery. We abstracted time from delivery to sterilization as a continuous outcome for up to 90 days of delivery. We also calculated rates of sterilization fulfillment same-day as delivery, prior to discharge, and within 6 weeks of delivery given the clinical relevance. However, 90 days was used as the primary endpoint given our hospital's policy at that time to schedule

outpatient postpartum visits at 6 weeks postpartum. This extended timeframe allows for service recovery of patients who missed their initial postpartum visit as well as those patients whose sterilization was not scheduled until after the postpartum visit.

We determined validity of Title XIX Medicaid sterilization consent forms for patients with Medicaid insurance. We judged forms to be valid if: (1) a waiting period of 30 days had elapsed for women delivering after 37 weeks gestation between when the forms were signed and when delivery occurred, (2) a waiting period of 72 hours was permitted if delivery occurred prior to 37 weeks gestation, and (3) both the patient and a healthcare provider had signed the consent form, as per our hospital's policy. There are no similar waiting periods for sterilization in the privately insured population in the state of Ohio.

Finally, we calculated the rate of subsequent pregnancy within 365 days of delivery based on documentation in our electronic medical record by either positive urine or serum pregnancy test, presentation for prenatal care, or notation of pregnancy care at an outside hospital in our hospital's clinical documentation.

Key Independent Predictors

We descriptively analyzed women whose documented contraceptive plan was sterilization as documented at time of postpartum hospital discharge according to insurance type (as determined by billing records). We conducted analyses between the Medicaid and private insurance categories given the study's hypothesis.

Covariates

We recorded maternal age at delivery in years, parity prior to delivery, gestational age at delivery in weeks, and delivery type. We defined adequate prenatal care as six or more prenatal visits [16]. A labor and delivery nurse recorded self-reported race/ethnicity during the admission process. We abstracted education level as a factor with eight possible levels but collapsed into two levels for purposes of this analysis (no college versus at least some college).

Methodology

Four researchers who were trained prior to chart abstraction abstracted records and coded in an iterative process to clarify interpretation of chart documentation. We directly obtained select clinical information from our institution's perinatal database and verified this data during chart review. Finally, we matched each subject's record to billing records to determine insurance status at delivery. One hundred charts were coded by all four coders in order to calculate a Fleiss' kappa for concordance. Concordance statistics for the primary predictor (insurance status) was not performed given this data was obtained directly from billing records. The Fleiss' Kappa statistic between all four abstracters was 0.91 for sterilization as the documented contraceptive plan and 0.91 for concordance on whether sterilization had been achieved.

Analyses

We calculated tests for differences in demographic and clinical variables across Medicaid and private insurance categories using t-tests and χ^2 tests for continuous and proportional outcomes, respectively. We compared sterilization fulfillment via χ^2 test, relative risk (RR), and multivariable logistic regression comparing women who were privately insured and those covered by Medicaid. We prespecified all covariates for multivariable analyses except for the consolidation of two categorical variables with fewer than five observations (forceps and vacuum-assisted deliveries were collapsed into operative vaginal deliveries and education level as noted previously) in any predictor-outcome combination. We calculated variance inflation factors for each predictor to assess collinearity. There was no meaningful collinearity between factors given the variance inflation factor was less than 1.3 for each factor.

We compared time from delivery to sterilization, in days, between Medicaid and privately insured subjects by the Wilcoxon rank-sum test and multivariable Cox proportional hazards modeling. The multivariable model was prespecified as above. Patients whose partners received a vasectomy within 90 days of delivery were included in the logistic calculations, but excluded from the linear tests analyzing time to sterilization fulfillment as the timing of the vasectomy was not dependent on the same patient-physician relationship as a postpartum sterilization as well as the exact date could not be confirmed by our chart review.

Finally, we compared the rate of subsequent pregnancy within 365 days of delivery between groups using χ^2 and RR. Multivariable analysis for this outcome was not completed given the small number of subsequent pregnancies, particularly in the privately-insured group. We performed statistical analyses using R Version 3.3.0 [17]. All tests were two-tailed and an α of 0.05 was used to define statistical significance. Based on the known delivery volume and insurance mix (approximately 70% Medicaid) at our hospital over the study timeframe, a sample size determination was conducted. Estimating a 17% rate of sterilization as reported in the literature, it was predicted that 1,030 patients with Medicaid would have a contraceptive plan of sterilization during the study timeframe [18]. Using a Cohen's h value of 0.266 for estimation of sample size requirement of unequal-sized groups and an alpha of 0.05, we estimated that 125 privately insured women would be needed to have 80% power to compare the difference between fulfillment of sterilization requests between Medicaid and privately insured women [19]. This study was approved by the institutional review board of MetroHealth Medical Center.

Results

We identified 8,654 deliveries during the study period. In our cohort, 16.2% of patients with Medicaid and 11.3% of privately-insured patients had a documented plan of sterilization at time of postpartum hospital discharge. After accounting for exclusions ($n=8$), 1,030 women with Medicaid and 154 privately-insured women had a documented plan of sterilization (Table 1). Patients with Medicaid versus private insurance tended to be younger, more likely to have a parity of two or greater prior to delivery, not have received adequate prenatal care, and have had a spontaneous vaginal delivery.

Women with Medicaid were less likely to be sterilized on the day of delivery (29.7% vs. 48.7%, $p<0.0001$), prior to hospital discharge (33.8% vs. 51.9%, $p=0.0001$), and within 42 days (six weeks) postpartum (34.6% vs 53.2%, $p<0.0001$). By 90 days postpartum, 475 of 1,030 (46.1%) women with Medicaid and 100 of 154 (64.9%) privately insured women received postpartum sterilization within 90 days of delivery ($p<0.001$). The RR for sterilization fulfillment by 42 and 90 days postpartum was 1.02 (95% confidence interval [CI] 0.91–1.07) and 1.40 (95% CI 1.23–1.60), respectively, for patients insured by private insurance versus Medicaid. Multivariable logistic regression analysis revealed that the association between Medicaid status and sterilization non-fulfillment by 90 days of delivery was no longer significant after adjusting for age, parity, gestational age, mode of delivery, adequacy of prenatal care, race/ethnicity, marital status, and education level (Table 2).

Of the 575 women who did successfully obtain sterilization as a method of contraception, eight were excluded from analyses regarding time to sterilization as the sterilization was of their partner (vasectomy within the postpartum period). Of the remaining 567, women with Medicaid had an increased time from delivery to completion of the sterilization request ($p<0.001$) (Figure 1). Again, after adjusting for the listed covariates, the relationship between insurance type and time until sterilization fulfillment was no longer significant (Table 3).

Of the 555 Medicaid-insured women who did not receive a desired postpartum sterilization, 267 (48.1%) had valid Title XIX sterilization consent forms at the time of delivery, 208 (37.5%) did not have a form signed prior to delivery, and 80 (14.4%) had forms signed prior to delivery but the required waiting period had not elapsed. Eleven patients (2.0%) did not have a valid form by 90 days after delivery.

The rate of subsequent pregnancy within 365 days of delivery was compared between the two groups. One hundred thirty-two of 555 (23.8%) Medicaid patients who did not receive sterilization and 5 of 54 (9.3%) privately insured patients were diagnosed with subsequent pregnancy in this timeframe (RR 2.57, 95% CI 1.10–6.00) (Figure 2).

Discussion

We have found a difference in both postpartum sterilization fulfillment and time to fulfillment between women with Medicaid and those with private insurance. Additionally, women with Medicaid who did not receive a postpartum sterilization had a higher rate of subsequent pregnancy in the year following delivery versus women who were privately insured. However, when we controlled for the listed demographic and clinical factors, Medicaid insurance did not serve as a barrier to sterilization completion or impact time to completion of sterilization requests, contrary to our hypothesis and the published literature. Thus, it is likely that Medicaid insurance partly reflects these other factors. Clinical differences in age, parity, gestational age at delivery, and cesarean delivery rates suggest both disparate populations at baseline and differences in terms of preterm birth and access to contraceptive services.

Delivery by cesarean section was the strongest predictor of sterilization fulfillment in our study. This suggests that a major barrier to sterilization fulfillment is the logistical need for a separate procedure for women who give birth vaginally. Given the disparate rate of cesarean delivery between Medicaid and privately-insured patients in our study, further analysis into the interplay between decision-making of route of delivery and postpartum contraception is needed. Treating postpartum sterilization as an urgent, rather than a routine, procedure and having hospital policies in place to coordinate postpartum sterilization care may help alleviate these barriers at the provider and hospital level [1,20]. Adequacy of prenatal care was the second strongest predictor. Thus, larger social and economic inequities that prevent access to care may partially be the driving forces behind this disparity in postpartum sterilization. Therefore, while these clinical and demographic differences in these two populations serve as barriers at the individual patient-level, systemic inequality and social justice issues must be considered in order to address the reproductive justice issues surrounding postpartum sterilization.

In our study, less than half of women with Medicaid had valid Title XIX Medicaid sterilization forms at time of delivery, though most forms were valid by 90 days after delivery. The lack of a valid Medicaid sterilization form has been shown to be a barrier to inpatient postpartum sterilization [3,9–11,20]. We are not able to determine the extent to which the lack of a valid signed consent form served as the sole barrier to sterilization fulfillment in our current study as additional factors in fulfillment include the clinical complexity of patient decision-making, surgeon and operating room availability, plan for outpatient sterilization via minimally-invasive surgery, among other factors.

As a retrospective chart review, our study is subject to the limitation of the potential loss to follow-up. It is unclear whether women who did not follow-up did not access care at all or accessed care elsewhere. However, this potentially disproportionately impacts women with Medicaid due to the need for the signed Title XIX sterilization consent forms transferred to obtain a sterilization in a timely fashion. Similarly, lack of follow-up of women seeking care elsewhere would likely lead to an underdiagnosis of subsequent pregnancy after sterilization non-fulfillment, especially as our institution does not provide pregnancy termination services.

As a single-center study, sterilization practices and barriers related to our hospital's culture, policies, and procedures may limit generalizability. While we included multifetal gestations in the study cohort, we did not abstract this as a specific covariate for analysis. Additionally, given the inclusion criteria of plan for sterilization at time of postpartum discharge, some women had already received their sterilization and others may have changed their mind after not receiving an inpatient sterilization. A prospective, multi-center study that interviews women regarding contraceptive plan at several points in their antenatal, delivery, and postpartum course is needed to better understand the complexities of contraceptive decision-making.

Previous studies excluded patients on the basis of current pregnancy outcomes such as preterm birth [9]. Inclusion of this population accounts for the totality of the postpartum experience, potential differential desire for and/or fulfillment of sterilization in these

scenarios, and shorter waiting period permitted by the Title XIX sterilization form for premature deliveries. Our study also captures the clinical context of individual patients that cannot be studied in statewide or national database studies [15,21]. Finally, given the variety of both inpatient and outpatient interval sterilization procedures available, our study includes the outpatient postpartum period rather than analyzing only those sterilizations occurring prior to discharge as previously reported [9,13–15].

In conclusion, differences in fulfillment rates of postpartum sterilization and time to sterilization between women with Medicaid versus private insurance are not significant after adjusting for relevant clinical and demographic factors. However, women with Medicaid are more likely to have a subsequent short interval pregnancy after an unfulfilled sterilization request than women with private insurance. While the Medicaid-specific sterilization consent form was a barrier in our study, any policy-level change aiming to ameliorate the disparity in postpartum sterilization will need to account for the complex and multifactorial causes of sterilization non-fulfillment.

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References

1. American College of Obstetricians and Gynecologists. Committee opinion no. 530: Access to postpartum sterilization. *Obstet Gynecol.* 2012; 120(1):212–215. [PubMed: 22914423]
2. Block-Abraham D, Arora KS, Tate D, Gee RE. Medicaid consent to sterilization forms: Historical, practical, ethical, and advocacy considerations. *Clinical Obstetrics and Gynecology.* 2015; 58(2): 409–17. [PubMed: 25811128]
3. Borrero S, Zite N, Potter JE, et al. Medicaid policy on sterilization—anachronistic or still relevant? *N Engl J Med.* 2014; 370:102–104. [PubMed: 24401047]
4. Thurman AR, Janecek T. One-year follow-up of women with unfulfilled postpartum sterilization requests. *Obstet Gynecol.* 2010; 116(5):1071–1077. [PubMed: 20966691]
5. American College of Obstetricians and Gynecologists. Committee opinion no. 654: Reproductive life planning to reduce unintended pregnancy. *Obstet Gynecol.* 2016; 127:e66–9. [PubMed: 26942389]
6. Cleland J, Conde-Agudelo A, Peterson H, Ross J, Tsui A. Contraception and health. *Lancet.* 2012; 380(9837):149–56. [PubMed: 22784533]
7. Gilliam M, Davis SD, Berlin A, et al. A qualitative study of barriers to postpartum sterilization and women's attitudes toward unfulfilled sterilization requests. *Contraception.* 2008; 77(1):44–49. [PubMed: 18082666]
8. Potter JE, White K, Hopkins K, et al. Frustrated demand for sterilization among low-income Latinas in El Paso, Texas. *Perspect Sex Reprod Health.* 2012; 44:228–235. [PubMed: 23231330]
9. Zite N, Wuellner S, Gilliam M. Barriers to obtaining a desired postpartum tubal sterilization. *Contraception.* 2006; 73(4):404–407. [PubMed: 16531176]
10. White K, Potter JE. Reconsidering racial/ethnic differences in sterilization in the United States. *Contraception.* 2014; 89(6):550–556. [PubMed: 24439673]
11. Committee Opinion No. 695. American College of Obstetricians and Gynecologists. Sterilization of women: ethical issues and considerations. *Obstet Gynecol.* 2017; 129:e109. [PubMed: 28333823]
12. Allen RH, Desimone M, Boardman LA. Barriers to completion of desired postpartum sterilization. *Rhode Island Med J.* 2013; 96(2):32–4.

13. Zite N, Wuellner S, Gilliam M. Failure to obtain desired postpartum sterilization: Risk and predictors. *Obstet Gynecol.* 2005; 105(4):794–9. [PubMed: 15802407]
14. Albanese A, French M, Gossett DR. Request and fulfillment of postpartum tubal ligation in patients after high-risk pregnancy. *Contraception.* 2017; 95(3):234–8. [PubMed: 27570140]
15. Potter JE, Stevenson AJ, White K, Hopkins K, Grossman D. Hospital variation in postpartum tubal sterilization rates in California and Texas. *Obstet Gynecol.* 2013; 121(1):152–8. [PubMed: 23262940]
16. Santos NET, Oliveira AE, Zandonade E, Leal MC. Access to prenatal care: Assessment of the adequacy of different indices. *Cad Saude Publica.* 2013; 29(8):1664–74. [PubMed: 24005931]
17. R Core Team. R: A language and environment for statistical computing. R Foundation for Statistical Computing; Vienna, Austria: 2017. <https://R-project.org>
18. Potter JE, et al. Unmet demand for highly effective postpartum contraception in Texas. *Contraception.* 2014; 90(5):488–95. [PubMed: 25129329]
19. Cohen J. A power primer. *Psychol Bull.* 1992; 112(1):155–9. [PubMed: 19565683]
20. Wolfe KK, Wilson MD, Hou MY, Creinin MD. An updated assessment of postpartum sterilization fulfillment after vaginal delivery. *Contraception.* 2017; 96(1):41–46. [PubMed: 28578151]
21. Moniz MH, et al. Inpatient Postpartum Long-Acting Reversible Contraception and Sterilization in the United States, 2008–2013. *Obstet Gynecol.* 2017 Epub ahead of print.

Figure 1.

Kaplan-Meier survival analysis curves for time to sterilization fulfillment for Medicaid vs. privately insured postpartum women. The dashed line represents patients with Medicaid whereas the solid line represents women with private insurance.

Figure 2.

Stacked column chart of proportion of patients with documented plan for sterilization who achieve sterilization within ninety days of delivery, do not achieve sterilization but do not have a subsequent pregnancy within 365 days of delivery, and women who have a subsequent pregnancy.

Table 1

Demographic and clinical characteristics by insurance status for patients who desired postpartum sterilization at MetroHealth Medical Center

	Medicaid	Private	p-value
Number of subjects	1030	154	
Mean maternal age at delivery (years)	29.54 (5.30)	33.32 (5.00)	<0.001
Parity at admission			<0.001
0	20 (1.9%)	4 (2.6 %)	
1	195 (18.9%)	57 (37.0%)	
2+	815 (79.1%)	93 (60.4%)	
Gestational age at delivery (weeks)	37.72 (2.69)	38.26 (1.52)	0.02
Preterm delivery	205 (19.9)	19 (12.3)	0.03
Not adequate prenatal care	228 (22.5%)	6 (3.9%)	<0.001
Delivery Type			<0.001
Spontaneous Vaginal	609 (59.1%)	64 (41.6%)	
Operative Vaginal	22 (2.1%)	3 (1.9%)	
Cesarean Section	399 (38.7%)	87 (56.5%)	
Race			<0.001
Black/African American	552 (53.6%)	40 (26.0%)	
White	286 (27.8%)	77 (50.0%)	
Hispanic	160 (15.5%)	26 (16.9%)	
Asian	6 (0.6%)	4 (2.6%)	
Other	26 (2.5%)	7 (4.5%)	
Married	166 (16.6%)	99 (64.3%)	<0.001
No history of college	744 (75.5%)	41 (27.5%)	<0.001

Presented as n(%) or mean(SD)

Outcome of sterilization fulfillment by 42 days postpartum: 355 of 1,030 (34.65%) women with Medicaid and 82 of 154 (53.2%) with private insurance

Outcome of sterilization fulfillment by 90 days postpartum: 475 of 1,030 (46.1%) women with Medicaid and 100 of 154 (64.9%) with private insurance

Table 2

Univariable and multivariable logistic regression results of sterilization fulfillment within 42 days and 90 days postpartum predicted by clinical and demographic characteristics.

	90 Day Univariable Odds Ratio	Confidence Interval	42 Day Multivariable Odds Ratio	Confidence Interval	90 Day Multivariable Odds Ratio	Confidence Interval
Private Insurance ^a	2.16	1.51 – 3.07	1.35	0.70 – 2.62	0.94	0.54 – 1.64
Mean maternal Age at Delivery ^b	N/A	N/A	1.01	0.97 – 1.05	1.02	0.99 – 1.06
Parity 2 ^c	0.99	0.75 – 1.29	2.27	1.38 – 3.78	1.71	1.15 – 2.58
Gestational Age at Delivery ^b	N/A	N/A	1.09	0.99 – 1.19	1.13	1.05 – 1.22
Cesarean Section ^d	13.38	10.04 – 17.83	64.74	41.76 – 103.60	16.64	11.53 – 24.49
Adequate Prenatal Care ^e	2.87	2.11 – 3.92	1.89	1.06 – 3.41	2.30	1.47 – 3.66
Black/African American ^f	0.67	0.53 – 0.84	1.00	0.62 – 1.62	0.86	0.59 – 1.27
Hispanic ^f	1.24	0.91 – 1.70	1.78	0.96 – 3.32	1.21	0.74 – 1.98
Asian/Other Race ^f	1.12	0.56 – 2.25	0.67	0.23 – 1.97	0.79	0.33 – 1.92
Married ^g	2.50	1.88 – 3.34	2.33	1.37 – 4.00	1.53	0.99 – 2.38
College Education ^h	1.37	1.06 – 1.76	1.20	0.74 – 1.92	1.06	0.73 – 1.55

All variables shown in the table were included in the multivariable model

^aReferent group – Medicaid insurance

^bAnalyzed continuously

^cReferent group – Parity <2

^dReferent group – Spontaneous or operative vaginal delivery

^eReferent group – Inadequate prenatal care (fewer than 6 prenatal visits)

^fReferent group – White

^gReferent group – Unmarried

^hReferent group – No college education

Table 3

Univariable and multivariable Cox proportional hazards results of time to sterilization fulfillment within 90 days postpartum predicted by clinical and demographic characteristics.

	Univariable Hazard Ratio	Confidence Interval	Multivariable Hazard Ratio	Confidence Interval
Private Insurance ^a	1.71	1.38 – 2.12	1.03	0.79 – 1.34
Mean maternal Age at Delivery ^b	1.03	1.01 – 1.04	1.02	1.00 – 1.03
Parity ≥ 2 ^c	0.97	0.80 – 1.18	1.43	1.16 – 1.76
Gestational Age at Delivery ^b	1.04	1.00 – 1.07	1.06	1.02 – 1.11
Cesarean Section ^d	7.83	6.52 – 9.39	9.19	7.55 – 11.19
Adequate Prenatal Care ^e	2.24	1.74 – 2.89	2.23	1.69 – 2.95
Black/African American ^f	0.76	0.64 – 0.89	0.83	0.67 – 1.02
Hispanic ^f	1.16	0.93 – 1.44	1.19	0.93 – 1.53
Asian/Other Race ^f	1.02	0.63 – 1.65	0.77	0.49 – 1.21
Married ^g	1.87	1.56 – 2.24	1.33	1.07 – 1.65
College Education ^h	1.24	1.04 – 1.48	1.09	0.89 – 1.33

All variables shown in the table were included in the multivariable model

^aReferent group – Medicaid insurance

^bAnalyzed continuously

^cReferent group – Parity <2

^dReferent group – Spontaneous or operative vaginal delivery

^eReferent group – Inadequate prenatal care (fewer than 6 prenatal visits)

^fReferent group – White

^gReferent group – Unmarried

^hReferent group – No college education