Post-*Roe* Planning: The Effect of *Dobbs v. Jackson* on Contraceptive and Sterilization Choices[*]

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Abstract

This study examines the impact of the *Dobbs v. Jackson Women's Health Organization* ruling which removed federal protections for abortion on contraceptive and sterilization decisions. Using health insurance records of millions of Americans, we find that the ruling led to an increase of 20% in the monthly rate of female sterilization procedures, 17% increase in male sterilization procedures, and a 15% increase in LARC insertions in states hostile to abortion compared to other states in the months immediately following the ruling. For most sub-groups we study, effects fade by 2023. However, we find lasting effects on sterilization rates for individuals aged 18-25.

Keywords: abortion; contraception; family planning

JEL Codes: J13, I18

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1 Introduction

Despite major changes in contraception since *Roe v. Wade* (1973), including greater acceptance of long-acting reversible contraceptives (Watkins, 2021) and falling contraceptive prices (Snyder et al., 2018), these improvements have translated only weakly into long-run reductions in abortion (Chiu et al., 2024). One possible reason for the persistence of abortion despite major improvements in contraceptive access and quality is that abortion provides insurance in the case of unwanted pregnancy, and so leads to moral hazard in other precautions against unwanted pregnancy. To better understand the relationship between abortion and contraceptive choices, we study a natural experiment following the Supreme Court's decision in *Dobbs v. Jackson Women's Health Organization* (2022).

We compare states hostile and non-hostile to abortion before and after *Dobbs* to estimate how this change in abortion policy affects take-up of short-acting and long-acting reversible contraceptives (SARCs and LARCs), as well as sterilization procedures. We find that states hostile to abortion diverge from others in July 2022, immediately after the *Dobbs* decision was officially released. Both women and men are more likely to undergo sterilization procedures and women are more likely to initiate LARC use. In the months immediately following the ruling, we see a 15% and 20% rise in the monthly rate of LARC initiation and sterilization, respectively. However, these effects are short-lived: cumulating over 18 months post-*Dobbs*, our estimates imply that around 570 more women in our sample, and—if we extrapolate—about 17,000 more women with access to private insurance living in states hostile to abortion were sterilized or received a LARC as a result of the *Dobbs* ruling by the end of 2023.[1]

We next ask whether the contraceptive response concentrates among individuals who face the highest risk of an unintended pregnancy using a unique dataset with historical information on contraceptive choice and demographic information: the Merative$^{\text{TM}}$ MarketScan$^{\circledR}$ Commercial Database. We use this dataset to create a balanced panel of millions of individuals enrolled in employer-sponsored health insurance (ESI).[2] We find that the response to *Dobbs* in abortion-hostile states is driven by women without children and young men age 18 to 25 years. Among women, responses are larger for those who used SARCs in the past year (2021), likely indicating sexual activity. Among contraceptive pill users based on usage in 2021, the effect is concentrated among women with irregular pill use, measured by the share of calendar days covered by their prescriptions. These patterns are consistent with *Dobbs* triggering the largest behavioral response among women who were most exposed to pregnancy risk before the ruling.

One limitation when studying the effect of *Dobbs* is that the abortion rate rose nationally in 2022–

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[1] There are 625,898 women in our sample that live in states hostile to abortion. This estimate is based on the short-term and long-term estimates in changes to monthly procedure rates. A more detailed explanation follows in Section 5.3.

[2] The sample covers a large fraction of the privately insured U.S. population and has wide geographic coverage (Bae et al., 2025).

2023 relative to past years, donations to Planned Parenthood and related charities peaked, and telehealth increased the prevalence and availability of abortion via medication (Guttmacher Institute, 2025).[3] Given this, it is likely that the monetary cost of abortion fell rather than rose following *Dobbs*, making it challenging to make inference about the impact of the policy on direct outcomes of abortions—for example, birth rates. Interestingly, *perceptions* of the difficulty of getting an abortion changed substantially in states hostile to abortion compared to others. Polling by PEW research suggests that in states where abortion is legal, the percentage of individuals who say it would be difficult to get an abortion where they live is similar in 2023 to its 2019 level (22 vs. 19 percent), but is 21 percentage points higher in places where abortion is prohibited (50 vs. 71 percent) (Pew Research Center, 2023). Combining estimates of the response that we see in contraceptive access with the price elasticities of contraceptives through an economic model of choice, we can estimate the perceived increase in the cost of abortion following *Dobbs*. Our estimates suggest a rise in the perceived cost of approximately 45 dollars, on average.

Our paper complements emerging work on the determinants of take-up of effective contraception. A recent review, Bailey (2025), summarizes the role of contraceptive access and abortion access on demographic trends in the US over the past century. Buckles et al. (2022) focus on more recent cohorts and argues that since the Great Recession, there has been a substantial decline in unintended pregnancy driven in part by shifts to more effective contraception. Pennington and Venator (2024) examine the impact of elections which threatened abortion access on women's contraception choices, finding that reproductive policy uncertainty caused women who visit Planned Parenthood to switch to IUDs. Combining the anticipation results of Pennington and Venator (2024) with the context that changing contraceptive methods takes time, we focus on expected policy changes following the *Dobbs* leak, not on the dates of law changes in hostile states.[4] Bailey et al. (2023) offer a randomized subset of women in a low-income, uninsured population vouchers to subsidize the cost of IUDs and finds that this has a large effect on take-up. Using Texas hospital claims, Crowe et al. (2024) show that the 2013 closure of abortion clinics increased LARC use but did not affect male sterilization. In contrast, Pierson et al. (2024), using military health system data, find that male sterilization rose more after *Dobbs* in Texas than in Vermont.[5] Finally, Strasser et al. (2025) document increased sterilization among young adults after *Dobbs* in a difference-in-differences design, consistent with our findings.

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[3] See Appendix Figure A1 for data on Planned Parenthood funds.

[4] Indeed, we find similar effects when we consider all states perceived as hostile to abortion in our treatment group as when we include only the thirteen states with trigger laws (see Appendix Figure A2). This suggests that perceptions of abortion access affect behavior, consistent with Pennington and Venator (2024). When we use a Callaway and Sant'Anna (2021) event study focused on the impact of abortion bans, we find muted and mis-timed effects, also consistent with the leak being the more salient and relevant information for contraceptive choice.

[5] Texas had already implemented a six-week ban by mid-2021, complicating post-*Dobbs* interpretation. Our results are robust to excluding Texas.

Our study contributes to this literature in three key ways. First, we analyze a privately insured, nationwide population, complementing the literature focused on individuals already engaged with family planning providers like Planned Parenthood.[6] Second, we study effects up to 18 months following the *Dobbs* ruling, finding an important difference between short-term and long-term responses. Finally, we discuss heterogeneity by age, past birth control use, and presence of children, tying treatment effects to the likelihood of unplanned pregnancy and future fertility.

Much of the past literature on the impacts of abortion policy has focused on fertility and other downstream outcomes.[7] However, contraceptive choice and abortion choice interact dynamically to determine fertility. In light of the dynamic nature of abortion on future fertility, we focus on the question: "whose contraceptive choices respond most to abortion restrictions?" and discuss the potential long-term fertility impacts of changes in contraceptive choices. Overall, Dench et al. (2024) find that birth rates increased by 2.3 percent as a result of abortion bans post-*Dobbs.* But this effect is about half the size of the fertility effect in studies of abortion legalization in *Roe v. Wade*: Levine et al. (1999) find an overall 4.1 percent reduction in the birth rate as a result of abortion legalization. [8] Given changes in the type of contraception women use today relative to the past, our results may help to reconcile the larger estimates of the impact of abortion policy on fertility in Levine et al. (1999) with the result of Dench et al. (2024): following *Dobbs*, some women take greater precaution through contraceptive choice to avoid unplanned pregnancy.

2 Institutional Background

2.1 Reproductive Policies

Before *Dobbs v. Jackson Women's Health Organization* (2022), abortion law rested primarily on *Roe v. Wade* (1973) and *Planned Parenthood v. Casey* (1992). *Roe* recognized a constitutional right to pre-viability abortion, and *Casey* preserved that right while allowing state regulation short of an "undue burden." Anticipating the possible loss of federal protection, many states prepared to restrict abortion once legally permitted. By 2022, thirteen states had enacted "trigger laws" and others stood ready to impose bans following *Dobbs* (Nash and Guarnieri, 2022). Although the Court released the decision on June 24, 2022,

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[6] As the risks of genetic defects and miscarriage increase with age (Magnus et al., 2019; Frederiksen et al., 2018), restricted abortion access might have a salient effect among older couples.

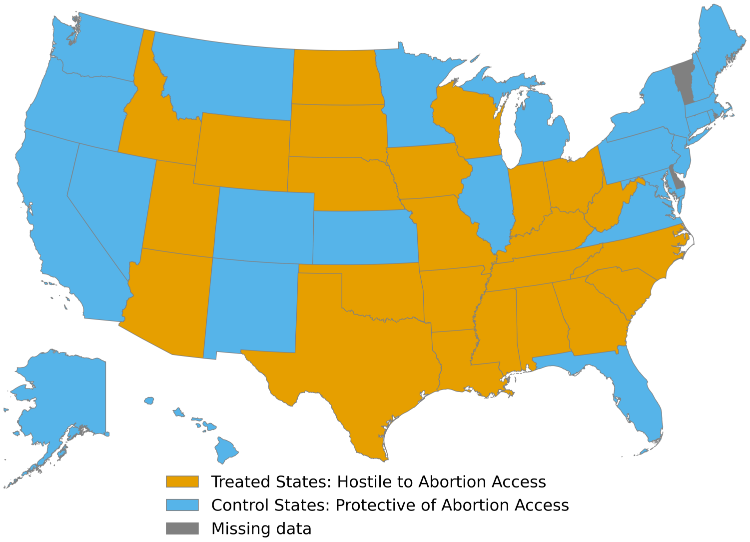
[7] Exceptions studying the impact of abortion legalization in the context of contraceptive choice are Goldin and Katz (2002) and Bailey (2006), which focus on ruling out abortion legalization as a driver of employment, education and marriage patterns when studying the impact of birth control access on these outcomes.

[8] Other work on the relationship between abortion and fertility includes Lahey (2014), Levine and Staiger (2004), and González et al. (2018) who find abortion access reduces fertility. Mølland (2016) find no decline in fertility over the life course. Londoño Vélez and Saravia (2025) find that women in Colombia quasi-randomly permitted to have an abortion have higher earnings and fewer children in the long-term. Work by Gruber et al. (1999), Donohue III and Levitt (2001), Pop-Eleches (2006), and Ananat et al. (2009) find that children on the margin of being aborted do not fare well later in life on a variety of outcomes.

Politico leaked a draft majority opinion on May 2, 2022 (Gerstein and Ward, 2022).

Following the Center for Reproductive Rights' classifications—archived via the Wayback Machine two months after the decision—we define a broader set of states where abortion access was likely to be substantially reduced. This includes states with pre-*Roe* bans, previously enjoined laws that could now be enforced, or legislatures with demonstrated intent to pass new restrictions. With the *Dobbs* decision, twenty-four states had policies in place that were hostile to abortion, detailed in Figure 1. [9]

Figure 1: Map of Treated and Control States



Note: We define states hostile to and protective of abortion access following data on abortion policies gathered by the *Center for Reproductive Rights*. We used the Wayback Machine to view their classification of states in 2022, two months after the *Dobbs* decision passed. A full list of treated and control states are listed in Appendix Table A1.

3 Data

We use proprietary healthcare claims data from the MarketScan Databases covering May 1, 2021 to December 31, 2023 to identify contraceptive and sterilization choices. The data contain de-identified, person-level records on privately insured paid medical and prescription drug claims for about 23 million individuals each year contributed by employers and health plans that have business relationships with Merative. These private-sector health data are drawn from a group of around 350 payers, including large employers, health insurance companies, and public sector organizations. For each year of our study period, the MarketScan

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[9] For our analysis, we consider three different definitions of treated and control states. Our main specification defines treated states following Figure 1. We also define treated states based on the thirteen states that had trigger laws in place, as listed in Nash and Guarnieri (2022). Third, because not all states with trigger laws in place ultimately enacted abortion bans, we define treated states as those with bans enacted as listed in Appendix Table A1.

databases include over 150 million records of either mail-order or retail pharmacy prescription drug claims.

Our primary study sample consists of female enrollees aged 18 to 45 years and male enrollees aged 18 years or older, who have had continuous healthcare coverage and have not moved throughout our study period. We have complete data for all states in our study period with the exception of Vermont and Delaware (the MarketScan data do not have any enrollees for these states beginning in 2022). To ensure that enrollee characteristics are balanced over our time period and that results are not driven by compositional changes, we restrict in our main specification to a balanced panel of enrollees who have not moved in our sample period. Appendix Figure A3 shows robustness to alternative samples.

3.1 Contraception

Long-Acting Reversible Contraception

For our analysis, we consider intrauterine devices (IUDs) and contraceptive implants which are over 99% effective in preventing pregnancy. In the MarketScan data, we observe the inpatient or outpatient procedure associated with the LARC insertion. We selected codes associated with the insertion procedure for IUDs or the implantation procedure for contraceptive implants which can be found in Appendix Table A2. We search across all diagnosis and procedure codes (up to five) for inpatient and outpatient services provided by the MarketScan data for a match.

We then construct a procedure rate for a given state-month by calculating the total number of female enrollees aged 18 to 45 years that have gotten a LARC divided by the total number of female enrollees aged 18 to 45 years. For both LARCs and sterilization procedures, we choose the earliest service date for each enrollee associated with a procedure as the date of the procedure and do not double count follow-ups.

Short-Acting Reversible Contraception

In addition to LARCs, we also consider short-acting reversible contraception. This includes injectable contraception, oral contraceptive pills, contraceptive patches, and vaginal rings. Appendix Table A2 lists the prescription codes we use to identify SARCs. We then construct a measure of total SARC prescriptions in a given state-month divided by the total number of female enrollees aged 18 to 45 years in that state-month.

Permanent Contraception

For female sterilization, we consider tubal ligation procedures and hysterectomies and for male sterilization, we consider vasectomies.

3.2 Summary Statistics

Table 1 shows summary statistics comparing "All MarketScan," which is all enrollees in the MarketScan data for the entire study period, regardless of age, to the "Study Sample" which is the subset of continuously-enrolled female enrollees aged 18 to 45 years and male enrollees aged 18 years and older which did not move at any point during our study period. We aggregate the enrollee-level data to state-months from May 2021 to December 2023, across forty-eight states and Washington, D.C.

Table 1: Summary Statistics

	All MarketScan		**Study Sample (W18-45, M18+)**	
Total Enrollees	34,408,048		3,953,428	
Age (Mean)	34.14		39.40	
Age (SD)	18.09		12.41	
	Count	*% of Total*	*Count*	*% of Total*
Total Men	16,786,618	48.79%	2,584,196	65.37%
Total Women	17,621,430	51.21%	1,369,232	34.63%
Total Women with Prescription Coverage	15,896,322		1,286,840	
	Count	*% of Total*	*Count*	*% of Total*
Enrollees with LARC insertions	290,041	1.65%	116,214	8.49%
Enrollees with Sterilizations (F)	36,768	0.21%	18,595	1.36%
Enrollees with Sterilizations (M)	78,778	0.47%	50,062	1.94%
Total SARC prescriptions	8,855,372		3,592,940	

Note: This table presents the summary statistics of the MarketScan data for May 1, 2021 to December 31, 2023. "All MarketScan" refers to all enrollees in the data for the entire study period, regardless of age. "Study Sample" refers to the subset of continuously-enrolled female enrollees age 18 to 45 years and male enrollees age 18 years and older (relative to 2021) who did not move. "Total Women with Prescription Coverage" refers to women with both medical and prescription coverage. The "count" column is the total number of enrollees who meet the given criteria on the left, while the "% of total" column is the percentage of enrollees who meet the criteria on the left divided by the total number of enrollees in the data. The percentages reported for enrollees with LARCs and sterilization are relative to total women (or men for male sterilizations) in the data.

4 Empirical Strategy

For our analysis, we create a panel dataset aggregating individual claims to a state and month-year level. Because we want to capture individuals' decisions in anticipation of likely reproductive changes, our treatment date is the date of the *leaked Dobbs* decision, May 2, 2022. The official Supreme Court decision was on June 24, 2022 (the end of month one in event time).

To estimate the causal effect of the *Dobbs* decision leak on contraception and sterilization choices, we use a difference-in-differences (DID) event study:

$$y_{st} = \sum_{\tau \neq -1} \delta_\tau D_s \times \lambda_\tau + \alpha_s + \beta_t + \varepsilon_{st} \tag{1}$$

where y_{st} is the outcome of interest for state s at month-year t, D_s is an indicator variable for state s having policies that are hostile to abortion rights, and λ_τ are indicators of months since May, 2022. In this specification, δ_τ captures the effect of the Dobbs decision leak on the outcome τ months from the treatment. The treatment time is normalized to $\tau = 0$ and we exclude $\tau = -1$ as the base period. We include state and month-year fixed effects, α_s and β_t respectively, and cluster by state.

For this specification to capture the causal impact of hostility to abortion post-*Dobbs* on behavior, we must assume that (1) individuals do not anticipate the decision before the leak and (2) that were it not for the *Dobbs* decision leak, hostile and non-hostile states would have followed the same path over time (with perhaps different levels).

We also estimate a difference-in-difference specification to compare the short-term and long-term effects of the leaked *Dobbs* decision on our outcomes of interest:

$$y_{st} = \delta_{\text{short}} D_s \times \lambda_{\text{short}} + \delta_{\text{long}} D_s \times \lambda_{\text{long}} + \alpha_s + \beta_t + \varepsilon_{st} \tag{2}$$

where y_{st} is the outcome of interest for state s at month-year t, D_s is an indicator variable for state s having policies that are hostile to abortion rights, λ_{short} is a time indicator for the "short-term" post-period of May, 2022 to December, 2022, and λ_{long} is a time indicator for the "long-term" post-period of January, 2023 to December, 2023. As before, we include state and month-year fixed effects, and cluster our standard errors by state.

Lastly, we estimate a Poisson regression, using the model below:

$$\log(E(Y_{st})) = \Delta_{\text{short}} D_s \times \lambda_{\text{short}} + \Delta_{\text{long}} D_s \times \lambda_{\text{long}} + \alpha_s + \beta_t \tag{3}$$

where Y_{st} is the count of procedures for state s at month-year t, which we assume are distributed Poisson. The coefficients of interest are Δ_{short} and Δ_{long}, which after applying the transformation, $(exp(\Delta) - 1) \times 100$, provide the percentage change in procedures relative to the pre-treatment rate. For LARCs and sterilizations, we account for the fact that a person who obtains effective contraception will not need to do so later. We set the exposure equal to the "at-risk" population, defined as the total number of enrollees at time t minus the cumulative number of procedures performed up to period $t - 1$. Standard errors are clustered by state.

We note that Appendix Table A3 presents mean procedure rates over time in the control states for all women age 18 to 45 and men age 18 years and older, regardless of whether we observe them for the entire study period. We do not see a substantial increase in the rate of LARC insertions or female sterilizations post-*Dobbs* in our population, so we interpret our effects as the effect of *Dobbs*, not the effect of *Dobbs* in hostile vs. non-hostile states. We do see a rise in male sterilization in non-hostile states, which suggests some caution in interpreting our results as the total effect of *Dobbs* for male sterilizations—they are an underestimate.

5 Results and Discussion

The event study in Figure 2 reveals approximately a 0.04 percentage point increase in the rate of LARC insertions two months after the *Dobbs* leak, relative to a pre-leak monthly average rate of 0.26 percent in treated states in April, 2022 (see Appendix Figure A4 for rates over time in treated vs. control states).[10] We detect no changes in SARC prescription rates in any month around the *Dobbs* leak. We see flat trends six months before the leak and eight to nine months after, but outside of this window treatment states are declining in their use of SARCs more than control states. This complicates the interpretation of an event study and suggests that a different research design may be better suited to understand the effect of *Dobbs* on SARC use.[11] Turning to sterilizations, we see a 0.01 percentage point increase in the rate of female and male sterilization two months after the *Dobbs* leak, on base rates of 0.05 percent and 0.06 percent, respectively. Impacts on sterilization are sizable (around 20% in those months), though estimates are noisy. This difference between hostile and non-hostile states in the monthly LARC initiation rate and the sterilization rate persists for two months, while a difference in the monthly male sterilization rate persists for six months. Combining male sterilization, female sterilization, and female LARC insertion into one indicator, our point estimates allow us to rule out long term effects greater than 0.0036 percentage points or 2.5 percent increase in the use of effective methods (see Appendix Figure A5).

5.1 Heterogeneity

Whose birth control choices are most responsive to changes in abortion law? In Table 2, we see a similar LARC response for women age 18 to 35, and a smaller response for older women. Male sterilization increases in the short run for all men age 18 and older, with the largest percentage increases occurring among the

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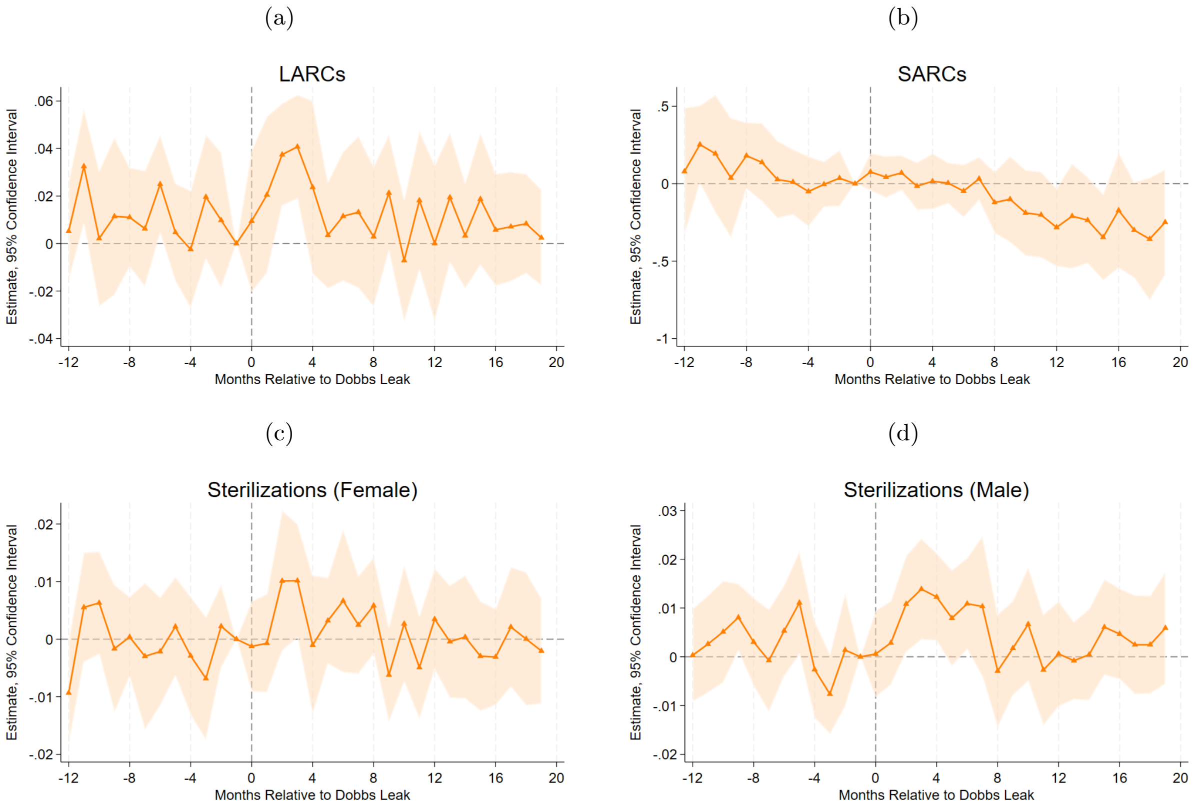
[10] Note that the rates reported in Table 1 are LARC insertions over the whole time period for our enrollee sample, while the rates here are monthly. There are 32 months in our sample.

[11] However, when we restrict to only the 13 states who had bans ready to take effect upon the overturning of *Roe v. Wade*, we see flat pretrends and no effect of the bans on SARC use (see Appendix Figure A3).

Figure 2: Event Study Estimates, Main Effects



Note: This figure displays the impact of the Dobbs decision leak, or May, 2022, on procedure rates (y-axis) by time since the leak (x-axis). The vertical dashed line marks the Dobbs leak ($t = 0$). The graphs report the estimate of the coefficient of interest, δ_τ, which is the effect (in percentage points) of the Dobbs decision leak on states hostile to abortion for time τ, from Equation 1. The regressions are weighted by number of enrollees. Standard errors are clustered on the state level. Both state and month-year fixed effects are included. Sample: Women age 18 to 45 years relative to 2021 for LARCs, SARCs, and female sterilizations; men age 18 and older relative to 2021 for male sterilizations.

oldest and youngest groups, where sterilization is least common. Among the youngest men, sterilization rates are 40% higher in 2023 (the last year of our data) relative to pre-*Dobbs*, but the baseline rate is extremely low. Female sterilization rates also increase the most for the youngest women: there is an 84% increase in 2022 and a 84% increase in 2023 in the rate of sterilization for hostile compared to non-hostile states, relative to their pre-*Dobbs* mean for women age 18 to 25. Event study estimates by age are available in Appendix Figure A6 and the point estimates do not suggest fading effects throughout 2023.[12]

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[12] There may be some worry that individuals are dis-enrolled from their parent's insurance at age 26, so the older women in this subgroup are selected. Appendix Figure A7 shows estimates for women age 18-23 in 2021, and the results are similar.

Table 2: Difference-in-Differences Estimates, Heterogeneity by Age

Panel (A)

	LARCs				SARCs			
	All	18-25	26-35	36-45	All	18-25	26-35	36-45
Short-Term Post × Treated	0.0096*	0.0110	0.0155**	0.0021	-0.0529	-0.0854	0.0024	-0.0444
	(0.0053)	(0.0092)	(0.0075)	(0.0071)	(0.1030)	(0.1875)	(0.1063)	(0.0532)
Long-Term Post × Treated	-0.0021	-0.0055	-0.0042	0.0020	-0.3052	-0.4708	-0.1959	-0.1970**
	(0.0059)	(0.0082)	(0.0094)	(0.0064)	(0.1933)	(0.3456)	(0.1911)	(0.0865)
Treated Mean at $t = -1$	0.263	0.317	0.310	0.182	9.309	14.318	8.961	5.922
Percent Change, Short-Term	3.6%	3.5%	5.0%	1.2%	-0.6%	-0.6%	0.0%	-0.7%
Percent Change, Long-Term	-0.8%	-1.7%	-1.4%	1.1%	-3.3%	-3.3%	-2.2%	-3.3%
State-Month Observations	1,568	1,568	1,568	1,568	1,568	1,568	1,568	1,568
Total Enrollees	1,369,232	374,815	464,679	529,738	1,286,840	351,213	436,778	498,849
R-Squared	0.74	0.57	0.52	0.50	0.97	0.97	0.95	0.94

Panel (B)

	Sterilizations (Female)				Sterilizations (Male)				
	All	18-25	26-35	36-45	All	18-25	26-35	36-45	46 and over
Short-Term Post × Treated	0.0045**	0.0061***	0.0017	0.0057*	0.0065***	0.0045***	0.0210***	0.0058	0.0022**
	(0.0022)	(0.0019)	(0.0037)	(0.0030)	(0.0018)	(0.0012)	(0.0061)	(0.0048)	(0.0009)
Long-Term Post × Treated	0.0003	0.0062***	-0.0062*	0.0017	-0.0001	0.0031*	0.0034	-0.0056	0.0004
	(0.0016)	(0.0022)	(0.0033)	(0.0021)	(0.0020)	(0.0016)	(0.0058)	(0.0044)	(0.0011)
Treated Mean at $t = -1$	0.047	0.007	0.082	0.046	0.059	0.008	0.138	0.121	0.013
Percent Change, Short-Term	9.5%	83.5%	2.1%	12.5%	11.1%	57.9%	15.2%	4.8%	17.2%
Percent Change, Long-Term	0.7%	84.1%	-7.6%	3.7%	-0.2%	40.0%	2.4%	-4.6%	3.1%
State-Month Observations	1,568	1,568	1,568	1,568	1,568	1,568	1,568	1,568	1,568
Total Enrollees	1,369,232	374,815	464,679	529,738	2,584,196	386,588	442,257	607,092	1,148,259
R-Squared	0.54	0.30	0.47	0.21	0.58	0.21	0.57	0.39	0.15

Note: This table reports the impact of the *Dobbs* decision leak on procedure rates in the "short-term" and "long-term" post-periods. The standard difference-in-difference estimates (in percentage points) of the coefficients of interest δ_{short} and δ_{long} from Equation 2 are displayed as "Short-Term Post × Treated" and "Long-Term Post × Treated." The pre-treatment period is May, 2021 to April, 2022. The short-term post-treatment period is May, 2022 to December, 2022. And finally, the long-term post period is January, 2023 to December, 2023. The regressions are weighted by number of enrollees and the standard errors are clustered on the state level and both state and month-year fixed effects are included. The treated mean at $t = -1$ reported reflects the mean procedure rate in the treated states in April, 2022 in percentage points. Sample: Women by age group ("all" represents age 18 to 45) relative to 2021 for LARCs, SARCs, and female sterilizations; men by age group ("all" represents age 18 and older) relative to 2021 for male sterilizations.

We make use of the panel nature of our dataset to shed more light on whether shifts in use of permanent or long-term contraception are driven by women at relatively high risk of pregnancy. To do this, we split female enrollees by whether they had ever filled a SARC prescription in 2021 (before *Dobbs*).

In Table 3 (and Figure A8), we see that effect of *Dobbs* in hostile states on LARC insertion is similar by past SARC use. In contrast, and parallel to the age-heterogeneity, the sterilization effect is driven by women who were taking some form of short-acting birth control in 2021. These women were likely sexually active but preferred to avoid pregnancy, and thus faced a risk of an unintended pregnancy. Using our detailed prescription data, we can further probe whether women who have the highest risk of an unplanned pregnancy based on their pill use are the ones driving the sterilization response. We construct a measure of irregularity in pill use by measuring, for each woman in the data,

$$C = \frac{\sum_{j=1}^{N-1} \text{prescription length}_j}{d_N - d_1}$$

where the denominator measures the number of calendar days between their first and last prescription of 2021, and the numerator adds the total days covered by their first through penultimate prescription of 2021. We compare individuals who are "fully covered"—they have enough pill prescriptions to take a pill everyday—to those who are not and who we infer are not regularly on birth control ($C < 1$). We see that women who are not fully covered by their pill prescriptions—who may be at higher risk of unplanned pregnancy—have a large response in the probability of getting sterilized in both the short and long run.

Table 3: Difference-in-Differences Estimates, Heterogeneity by Past SARC Use

Panel (A) - Outcome: LARCs

	No SARCs in 2021	SARCs in 2021		
	All	All	Pill ($C \geq 1$)	Pill ($C < 1$)
Short-Term Post × Treated	0.0106**	0.0091	0.0181	0.0043
	(0.0050)	(0.0101)	(0.0112)	(0.0153)
Long-Term Post × Treated	-0.0051	0.0072	0.0063	-0.0018
	(0.0057)	(0.0101)	(0.0131)	(0.0133)
Treated Mean at $t = -1$	0.256	0.270	0.236	0.271
Percent Change, Short-Term	4.1%	3.4%	7.7%	1.6%
Percent Change, Long-Term	-2.0%	2.7%	2.6%	-0.7%
State-Month Observations	1,568	1,568	1,568	1,568
Total Enrollees	952,847	333,993	138,532	119,327
R-Squared	0.69	0.37	0.21	0.23

Panel (B) - Outcome: Sterilization (Female)

	No SARCs in 2021	SARCs in 2021		
	All	All	Pill ($C \geq 1$)	Pill ($C < 1$)
Short-Term Post × Treated	0.0017	0.0139***	0.0058	0.0231***
	(0.0024)	(0.0049)	(0.0051)	(0.0058)
Long-Term Post × Treated	-0.0012	0.0063	0.0066	0.0140**
	(0.0017)	(0.0042)	(0.0041)	(0.0052)
Treated Mean at $t = -1$	0.047	0.050	0.045	0.034
Percent Change, Short-Term	3.7%	27.7%	13.0%	67.4%
Percent Change, Long-Term	-2.6%	12.6%	14.7%	40.9%
State-Month Observations	1,568	1,568	1,568	1,568
Total Enrollees	952,847	333,993	138,532	119,327
R-Squared	0.43	0.39	0.22	0.24

Note: This table reports the impact of the *Dobbs* decision leak on procedure rates in the "short-term" and "long-term" post-periods. The standard difference-in-difference estimates (in percentage points) of the coefficients of interest δ_{short} and δ_{long} from Equation 2 are displayed as "Short-Term Post × Treated" and "Long-Term Post × Treated." The pre-treatment period is May, 2021 to April, 2022. The short-term post-treatment period is May, 2022 to December, 2022. And finally, the long-term post period is January, 2023 to December, 2023. The regressions are weighted by number of enrollees and the standard errors are clustered on the state level and both state and month-year fixed effects are included. The treated mean at $t = -1$ reported reflects the mean procedure rate in the treated states in April, 2022 in percentage points. Sample: women, stratified by SARC use history. The sample is split into women who did versus did not have at least one prescription for a SARC at any point in 2021. Among women with at least one SARC prescription in 2021, we additionally report estimates for the subset with birth control pill prescriptions in 2021. Based on our pill coverage ratio C, "Pill ($C \geq 1$)" denotes women who are fully covered (i.e., have enough prescribed pill days to take a pill every day over the interval between their first and last pill prescriptions in 2021), while "Pill ($C < 1$)" denotes women who are not fully covered (i.e., have gaps in pill coverage/irregular pill use).

Finally, we examine heterogeneity by whether women were on plans that included dependents under age 18, which we use as a proxy for having children. Appendix Table A4 suggests that the increase is driven by women without children, both for LARC use and sterilization, despite the fact that sterilization is five times more common among women with a child on the plan. This result, combined with the fact that younger women have a large response in relative terms, suggests the potential for long-term effects on fertility.

5.2 Robustness

Our main specification studies the average monthly procedure rate across states in a linear regression framework, which gives a fairly transparent comparison of state-level means. Appendix Table A5 implements a Poisson regression for our main outcomes. We find similar effects relative to the OLS specification, with the exception of the female sterilization result, which is directionally the same but about a third of the size in the short-term and no longer significant. In addition, Appendix Figure A3 shows that the results are robust to including movers, and Appendix Figure A9 shows that the results are robust to excluding states which already had effective bans or for which the expected response to *Dobbs* was extremely uncertain. Appendix Figure A10 presents the Callaway and Sant'Anna (2021) estimates of the effect of abortion ban enactment (see Appendix Table A1 for treatment definitions). When we use the date on which state-level abortion legislation actually changed, we find a more muted response that is less well aligned with the timing of the change than in our main specification. We interpret this as evidence that national news coverage of the *Dobbs* decision made the possibility of abortion law changes salient for individuals in these states, relative to the laws actually in force at a given time.

5.3 Interpretation

If we are willing to extrapolate from these numbers to all individuals with private health insurance, from Equation 2, we estimate a total of 16,920 excess LARC insertions and sterilizations among women and an additional 18,522 sterilizations among men as a result of the *Dobbs* ruling in hostile states compared to non-hostile states.[13] Focusing on sterilization rates among young women, where we see a large, persistent response, we estimate that there are an additional 3,783 sterilizations per year in these states.[14]

Has the switch to effective contraception following *Dobbs* reduced the birth rate in states hostile to abortion? Even a temporary increase may have long-term effects, especially if the change occurs among young nulliparous women. For comparison, the annual number of births in these states is 1,638,190, per the CDC Wonder database (Centers for Disease Control and Prevention, 2025). Even if we assume that all sterilizations are among young people who would have counterfactually had two children in their lifetimes, the rates we see among young women imply a 0.46 percent reduction in annual births.

Finally, we infer the perceived increase in abortion costs generated by *Dobbs* in abortion-hostile states by

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[13] Using the 2023 ACS, we estimate 18,552,852(36,461,478) women(men) living in hostile states between age 18 and 45(over age 18) with private health insurance (Ruggles et al., 2025). We calculate the excess procedures in the short-term by multiplying the ACS population with the short-term coefficient and the length of the short-term post period (8 months). We repeat this calculation for the long-term post period (12 months). The total excess procedures for our entire study period are the sum of the short-term and long-term excess procedures.

[14] There are 5,085,516 women age 18-25 in hostile states in 2023 with access to private insurance (Ruggles et al., 2025).

equating the observed shift into LARCs to the response from a literal change in the price of contraception.[15] A woman choosing between a SARC and a LARC weighs two cost components: (i) the expected cost of an unintended pregnancy, $p \cdot \phi$ where p is the risk of unplanned pregnancy (which we assume is equal to the risk of abortion), and ϕ is the perceived cost of abortion; and (ii) the literal out-of-pocket price of the method, P. A rise in ϕ increases the expected cost of remaining on a SARC by $\Delta p \cdot \Delta\phi$, where Δp is the drop in pregnancy risk from switching. To find the change in perceived cost of abortion based on the observed number of individuals switching from a SARC to a LARC, we solve for $\Delta\phi$ in $-\Delta P = \Delta p \cdot \Delta\phi$. Pace et al. (2013) estimate that a $1 increase in out-of-pocket IUD cost reduces IUD use by 0.34 percent in MarketScan data in 2010. In our sample, LARC use rises by about 0.5 percent, which corresponds to a $1.91 decrease in the effective, 2022 price of a LARC.[16] Using a one-year horizon and "typical use" failure rates, moving from a SARC to a LARC lowers the risk of unintended pregnancy from about 4.55 percent to 0.27 percent, a drop of $\Delta p = 0.0428$ (Winner et al., 2012).[17] Solving for $\Delta\phi$, we infer that individuals behave as though the cost of abortion increased by $45 in 2022 USD. Taken together, our findings show that *Dobbs* increased the perceived cost of abortion, inducing greater precaution against unintended pregnancy.

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[15] We interpret the post-*Dobbs* rise in LARC uptake as a response to a higher perceived cost of abortion rather than changes in the actual difficulty of getting an abortion: Appendix Table A6 shows no systematic heterogeneity by distance to a control state.

[16] Price semi-elasticities are only available for LARCs, not sterilizations. We therefore focus on LARC switching. This calculation assumes that about one tenth of privately insured women in hostile states use LARCs (1,855,285 women in our age range), and our estimates imply a cumulative increase of 9,573 LARC initiations in the same population. Additionally, inflation-adjusted dollars were calculated using the Bureau of Labor Statistics CPI Inflation Calculator, based on Jan 2010 to Jan 2022 estimates.

[17] Over longer horizons, the cumulative pregnancy-risk gap is larger, which makes the one-year calculation an upper bound for the change in perceived cost of abortion.

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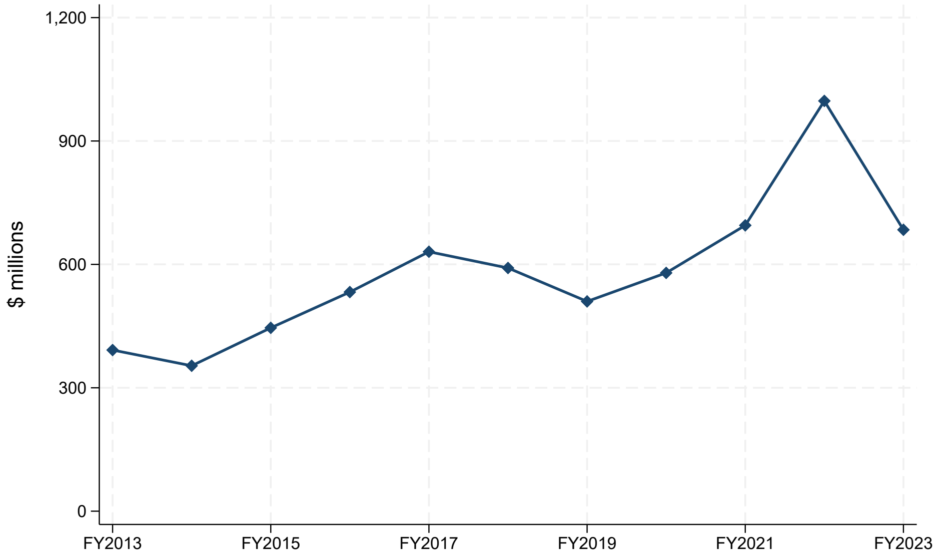
Appendix for:

Post-*Roe* Planning: The Effect of *Dobbs v. Jackson* on Contraceptive and Sterilization Choices

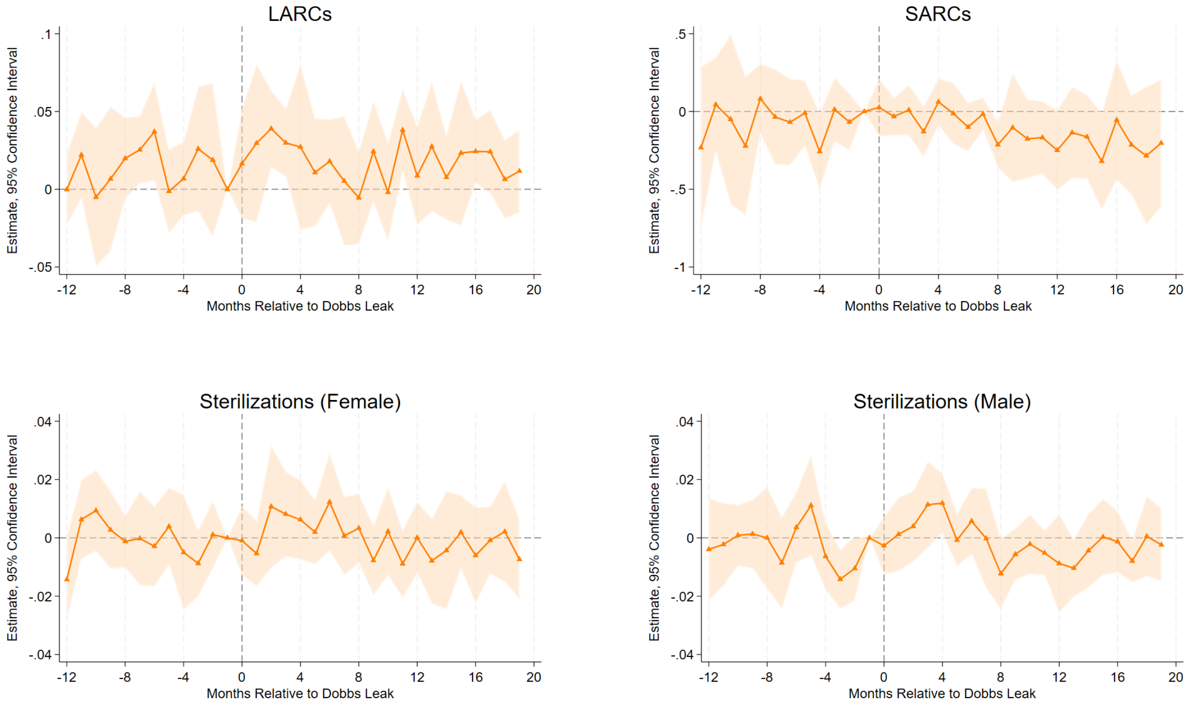
A Appendix Figures and Tables

Appendix Figure A1: Donations to the Planned Parenthood Federation of America



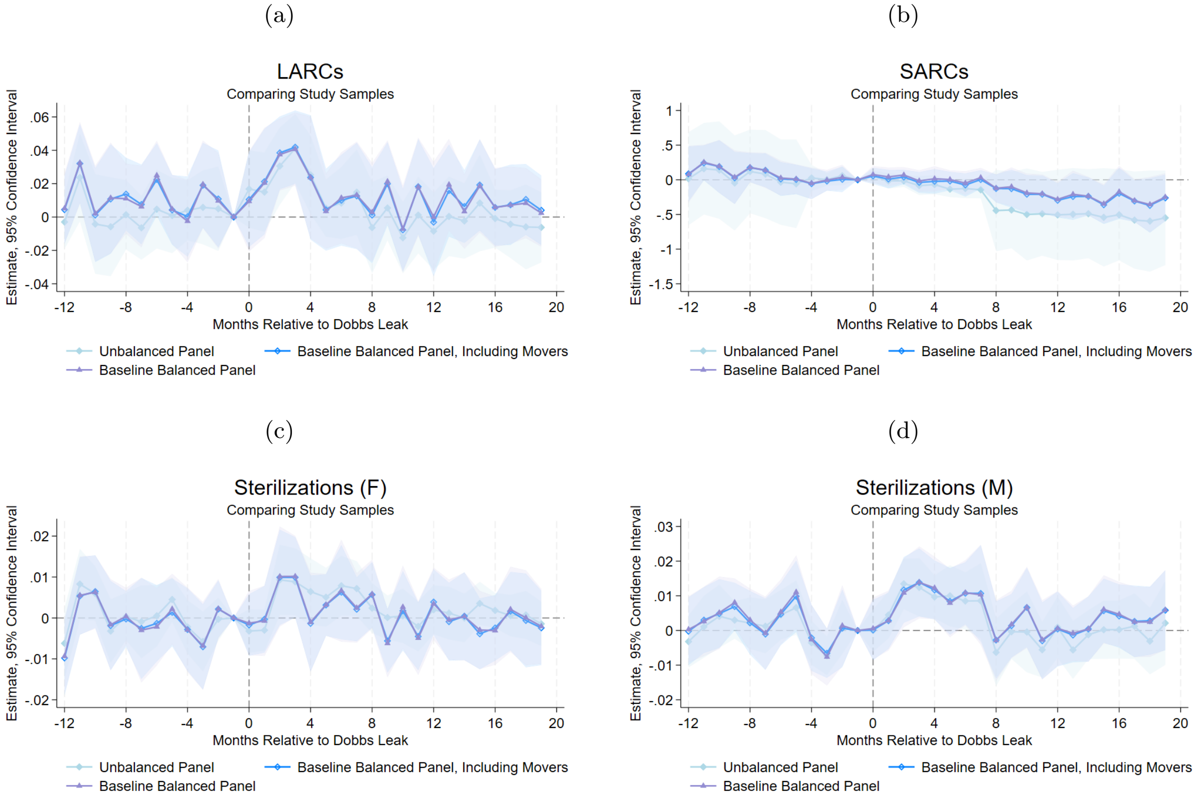
Note: This figure reports total donations to the Planned Parenthood Federation of America, in millions of U.S. dollars. Data are drawn from the revenue table in the organization's annual reports for fiscal years 2013–2023. Donations include private contributions and bequests to Planned Parenthood Federation of America, Planned Parenthood Global, and affiliates. The fiscal year begins on July 1 of calendar year t and ends on June 30 of year $t + 1$ (e.g., FY2023 ends June 30, 2024).

Appendix Figure A2: Event Study Estimates, 13 Ban States



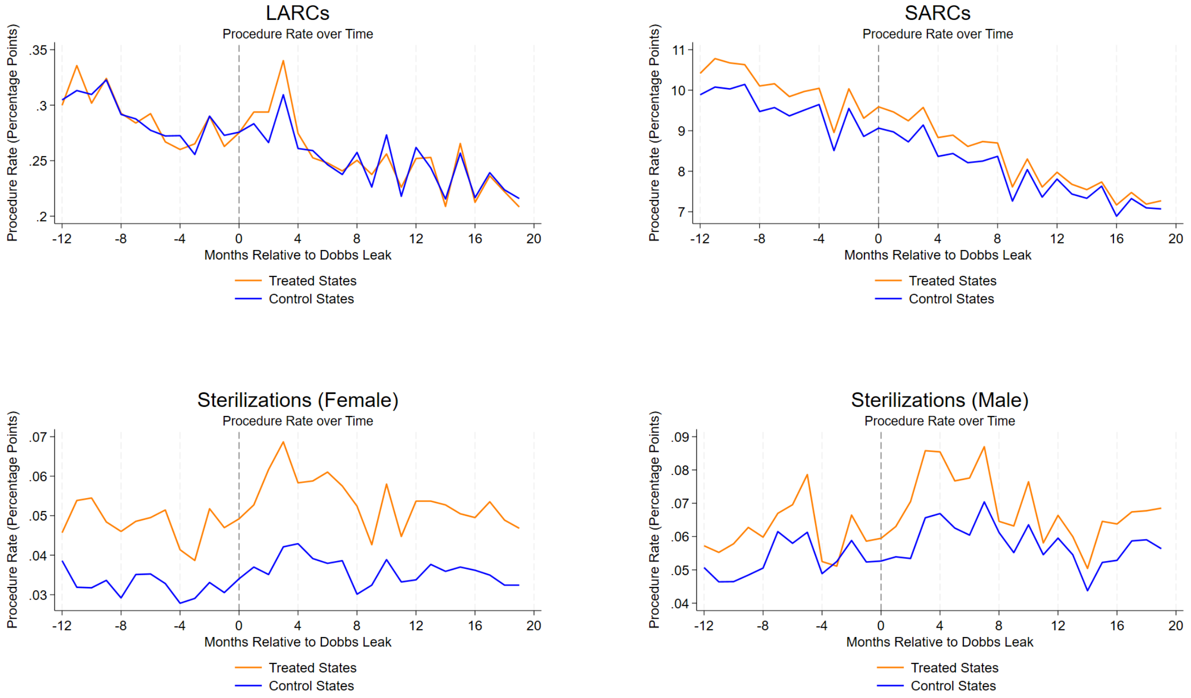
Note: This figure displays the impact of the Dobbs decision leak, or May, 2022, on procedure rates (y-axis) by time since the leak (x-axis). The vertical dashed line marks the Dobbs leak ($t = 0$). The graphs report the estimate of the coefficient of interest, δ_τ, which is the effect (in percentage points) of the Dobbs decision leak on the states that had bans ready to take effect upon the overturning of *Roe v. Wade* for time τ, from Equation 1. These treated states are the thirteen states with trigger bans listed in Nash and Guarnieri (2022). The control states are identical to the ones used for the main specification, listed in Appendix Table A1. The regressions are weighted by number of enrollees. Standard errors are clustered on the state level. Both state and month-year fixed effects are included. Sample: Women age 18 to 45 years relative to 2021 for LARCs, SARCs, and female sterilizations; men age 18 and older relative to 2021 for male sterilizations.

Appendix Figure A3: Event Study Estimates, Comparing Study Samples


(a) (b) (c) (d)

Note: This figure displays the impact of the Dobbs decision leak, or May, 2022, on procedure rates (y-axis) by time since the leak (x-axis). The vertical dashed line marks the Dobbs leak ($t = 0$). The graphs report the estimate of the coefficient of interest, δ_τ, which is the effect (in percentage points) of the Dobbs decision leak on states hostile to abortion for time τ, from Equation 1. Our baseline model for our main specification is the "baseline balanced panel" which is composed of women age 18 to 45 years relative to 2021 (men age 18 and older for male sterilizations), who have been continuously enrolled and did not move between states during the study period of May 1, 2021 to December 31, 2023. The "baseline balanced panel, including movers" includes women (men) who have moved at any point during the study period. Finally, the "unbalanced panel" includes women age 18 to 45 years relative to 2021 (men age 18 and older) regardless of whether they were continuously enrolled or moved. The regressions are weighted by number of enrollees. Standard errors are clustered on the state level. Both state and month-year fixed effects are included.

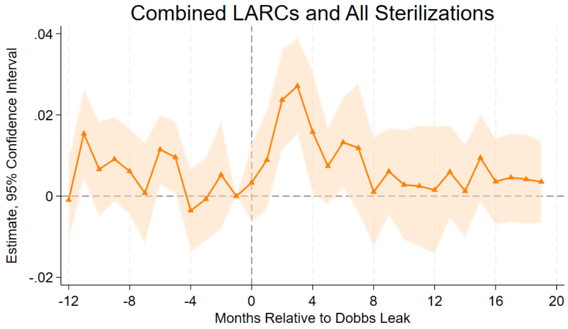
Appendix Figure A4: Procedure Rates Over Time



Note: This figure displays the raw monthly procedure rates in percentage points for treated and control states. The vertical dashed line marks the Dobbs leak, or May, 2022 ($t = 0$). For LARCs and sterilizations, the procedure rate is the number of enrollees who have gotten the procedure divided by the total female (male for male sterilizations) enrollees in a given month. For SARCs, the procedure rate is the number of prescriptions divided by the total number of female enrollees in that given month. Sample: Women age 18 to 45 years relative to 2021 for LARCs, SARCs, and female sterilizations; men age 18 and older relative to 2021 for male sterilizations.

Appendix Figure A5: Combined LARCs and All Sterilizations

(a)

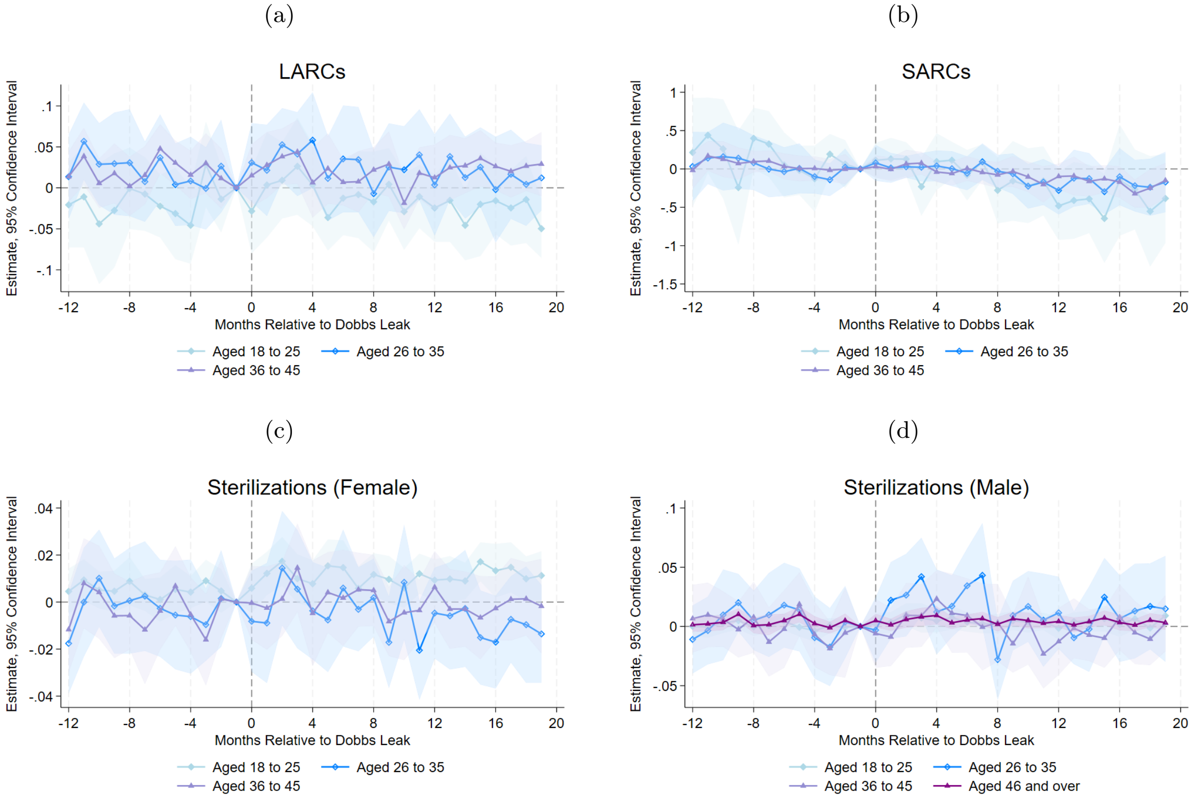


(b)

	LARCs and All Sterilizations
Short-Term Post × Treated	0.0090***
	(0.0027)
Long-Term Post × Treated	-0.0011
	(0.0024)
Treated Mean at $t = -1$	0.147
Percent Change, Short-Term	6.1%
Percent Change, Long-Term	-0.7%
State-Month Observations	1,568
Total Enrollees	3,953,428
R-Squared	0.76

Note: Panel (a) displays the impact of the Dobbs decision leak, or May, 2022, on procedure rates (y-axis) by time since the leak (x-axis). The vertical dashed line marks the Dobbs leak ($t = 0$). The procedure rate is calculated by the total number of LARCs and male and female sterilizations divided by the total number of men age 18 and older and women age 18 to 45 in a given state-month. The graph reports the estimate of the coefficient of interest, δ_τ, which is the effect (in percentage points) of the Dobbs decision leak on states hostile to abortion for time τ, from Equation 1. Panel (b) reports the impact of the Dobbs decision leak on procedure rates in the "short-term" and "long-term" post-periods. The standard difference-in-difference estimates (in percentage points) of the coefficients of interest δ_{short} and δ_{long} from Equation 2 are displayed as "Short-Term Post × Treated" and "Long-Term Post × Treated." The pre-treatment period is May, 2021 to April, 2022. The short-term post-treatment period is May, 2022 to December, 2022. And finally, the long-term post period is January, 2023 to December, 2023. Both regressions are weighted by number of enrollees. Standard errors are clustered on the state level. Both state and month-year fixed effects are included. Sample: Women age 18 to 45 years, combined with men age 18 and older, relative to 2021.

Appendix Figure A6: Event Study Estimates, Heterogeneity by Age


(a)

(b)

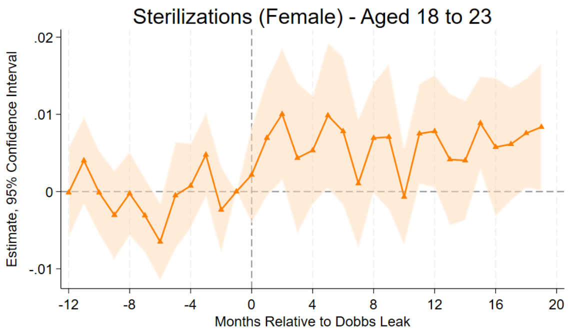
(c)

(d)

Note: This figure displays the impact of the Dobbs decision leak, or May, 2022, on procedure rates (y-axis) by time since the leak (x-axis). The vertical dashed line marks the Dobbs leak ($t = 0$). The graphs report the estimate of the coefficient of interest, δ_τ, which is the effect (in percentage points) of the Dobbs decision leak on states hostile to abortion for time τ, from Equation 1. The regressions are weighted by number of enrollees. Standard errors are clustered on the state level. Both state and month-year fixed effects are included. Sample: Women by age group relative to 2021 for LARCs, SARCs, and female sterilizations; men by age group relative to 2021 for male sterilizations.

Appendix Figure A7: Sterilizations for Women Aged 18 to 23

(a)

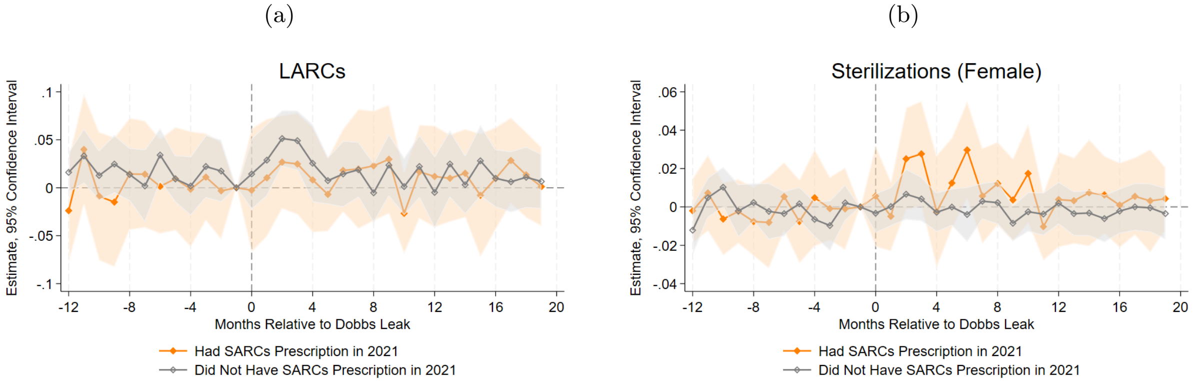


(b)

	Sterilizations (Female) Aged 18 to 23
Short-Term Post × Treated	0.0065***
	(0.0017)
Long-Term Post × Treated	0.0067***
	(0.0018)
Treated Mean at $t = -1$	0.006
Percent Change, Short-Term	116.2%
Percent Change, Long-Term	119.5%
State-Month Observations	1,568
Total Enrollees	340,776
R-Squared	0.27

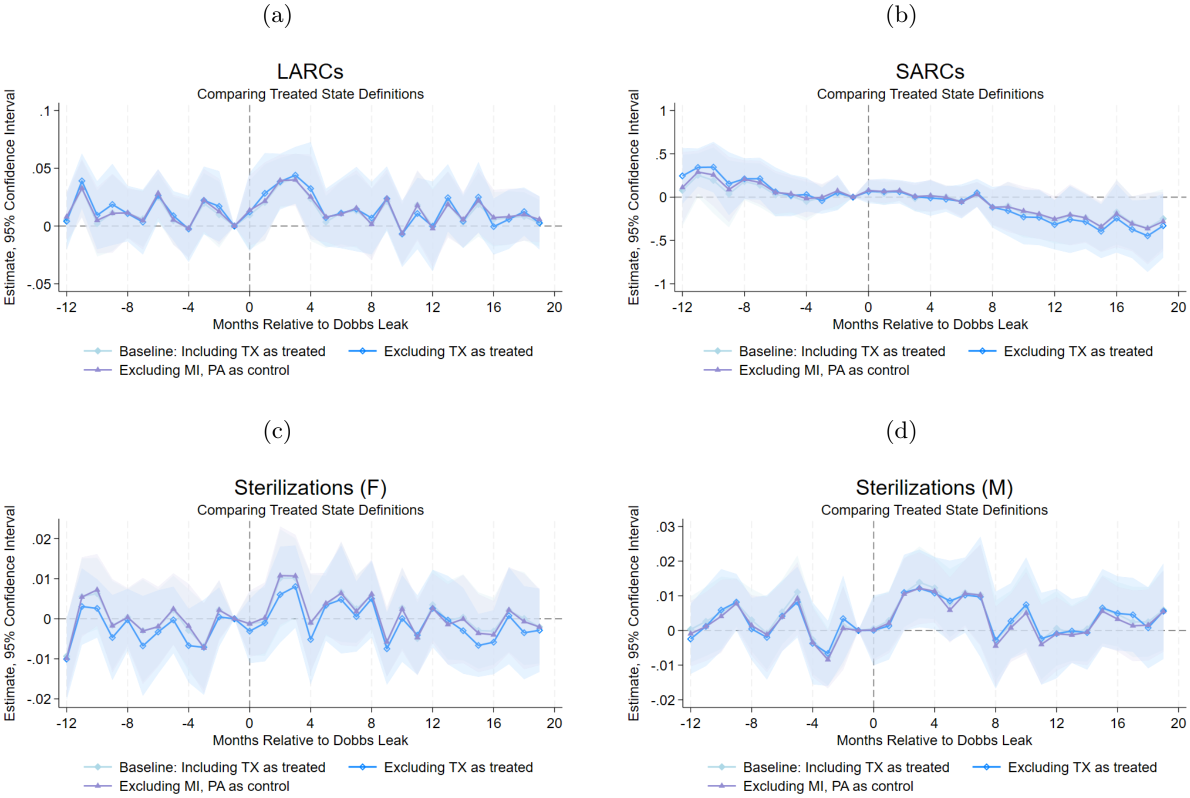
Note: Panel (a) displays the impact of the Dobbs decision leak, or May, 2022, on the female sterilization rate (y-axis) by time since the leak (x-axis). The vertical dashed line marks the Dobbs leak ($t = 0$). The graph reports the estimate of the coefficient of interest, δ_τ, which is the effect (in percentage points) of the Dobbs decision leak on states hostile to abortion for time τ, from Equation 1. Panel (b) reports the impact of the Dobbs decision leak on female sterilization rates in the "short-term" and "long-term" post-periods. The standard difference-in-difference estimates (in percentage points) of the coefficients of interest δ_{short} and δ_{long} from Equation 2 are displayed as "Short-Term Post × Treated" and "Long-Term Post × Treated." The pre-treatment period is May, 2021 to April, 2022. The short-term post-treatment period is May, 2022 to December, 2022. And finally, the long-term post period is January, 2023 to December, 2023. Both regressions are weighted by number of enrollees. Standard errors are clustered on the state level. Both state and month-year fixed effects are included. Sample: Women age 18 to 23 years relative to 2021.

Appendix Figure A8: Event Study Estimates, Heterogeneity by Previous SARC Usage



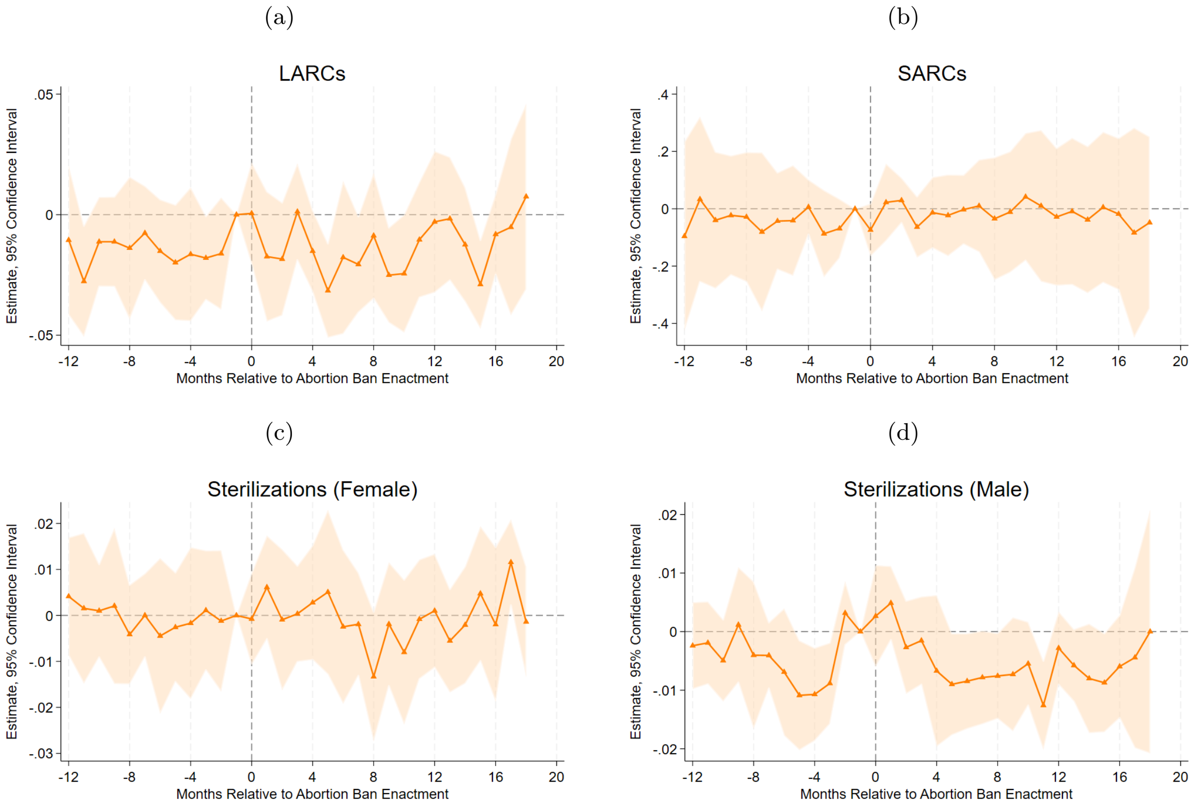
Note: This figure displays the impact of the Dobbs decision leak, or May, 2022, on procedure rates (y-axis) by time since the leak (x-axis). The vertical dashed line marks the Dobbs leak ($t = 0$). The graphs report the estimate of the coefficient of interest, δ_τ, which is the effect (in percentage points) of the Dobbs decision leak on states hostile to abortion for time τ, from Equation 1. The regressions are weighted by number of enrollees. Standard errors are clustered on the state level. Both state and month-year fixed effects are included. Sample: Women age 18 to 45 years relative to 2021 who have had any SARC prescription at any point in 2021, compared to those who did not have any SARC prescription in at any point in 2021.

Appendix Figure A9: Event Study Estimates, Comparing Treated State Definitions



Note: This figure displays the impact of the Dobbs decision leak, or May, 2022, on procedure rates (y-axis) by time since the leak (x-axis). The vertical dashed line marks the Dobbs leak ($t = 0$). The graphs report the estimate of the coefficient of interest, δ_τ, which is the effect (in percentage points) of the Dobbs decision leak on states hostile to abortion for time τ, from Equation 1. Our baseline model for our main specification is the "Baseline: Including TX as treated" which includes all treated and control states as described in Appendix Table A1. The "Excluding TX as treated" definition has the same control states as the baseline specification, but omits Texas from the treated states. Finally, the "Excluding MI, PA as control" excludes Michigan and Pennsylvania from the control states and keeps the same treated states as in the baseline. All regressions are weighted by number of enrollees. Standard errors are clustered on the state level. Both state and month-year fixed effects are included. Sample: Women age 18 to 45 years relative to 2021 for LARCs, SARCs, and female sterilizations; men age 18 and older relative to 2021 for male sterilizations.

Appendix Figure A10: Effect of Abortion Ban Enactment: Staggered Treatment Timing



(a) (b) (c) (d)

Note: This figure displays the impact of the abortion ban enactment on procedure rates (y-axis) by time since the ban enactment (x-axis). The vertical dashed line marks the ban enactment month-year ($t = 0$), with all dates in Appendix Table A1. The graphs report the estimate of the coefficient of interest, δ_τ, which is the effect (in percentage points) of abortion ban enactment on states with bans for event time τ, relative to each state's ban enactment, estimated following Callaway and Sant'Anna (2021). The regression is weighted by the number of enrollees, with standard errors clustered by state.

Appendix Table A1: Control and Treated State Definitions

Control States (Main Specification)	**Hostile States (Main Specification)**	**Ban Enacted**
Alaska	Alabama	Jun-22
California	Arizona	
Colorado	Arkansas	Jun-22
Connecticut	Georgia	Jul-22
Florida	Idaho	Aug-22
Hawaii	Indiana	Aug-23
Illinois	Iowa	
Kansas	Kentucky	Aug-22
Maine	Louisiana	Aug-22
Maryland	Mississippi	Jul-22
Massachusetts	Missouri	Jun-22
Michigan	Nebraska	
Minnesota	North Carolina	
Montana	North Dakota	Apr-23
Nevada	Ohio	
New Hampshire	Oklahoma	Jun-22
New Jersey	South Carolina	Aug-23
New Mexico	South Dakota	Jun-22
New York	Tennessee	Jun-22
Oregon	Texas	Aug-22
Pennsylvania	Utah	
Rhode Island	West Virginia	Sep-22
Virginia	Wisconsin	Jun-22
Washington	Wyoming	
Washington D.C.		

Note: This table presents the definition of treated and control states used in our analyses. Our main specification defines "hostile states" as treated. For robustness, we also restrict the set of treated states to those where abortion bans were enacted following the *Dobbs* decision. We consider abortion bans as legislation that completely, or nearly completely, prohibits abortion, including bans to abortion after six weeks of gestation ("fetal heartbeat laws"). The dates when these bans took effect were gathered through news searches and cross-validated using monthly state profiles published by the Center for Reproductive Rights between July 2022 and December 2023, archived via the Wayback Machine. Although Ohio had a ban in place from June 2022 to September 2022, the ban was subsequently blocked, leading abortion to remain legal. Thus, there is no ban enacted date for Ohio. Similarly, South Carolina briefly enforced a six-week ban in July 2022; the law was subsequently contested in court and did not ultimately take effect until August 2023.

Appendix Table A2: Sterilization and Contraceptive Codes

Contraceptive Type		CPT/HCPCS Codes	ICD-10 Codes
Sterilizations	Female	CPT: 0567T, 58565, 58600, 58605, 58611, 58615, 58670, 58671 HCPCS: A4264	Z30.2, 0U570ZZ, 0U573ZZ, 0U574ZZ, 0U577ZZ, 0U578ZZ, 0UL70CZ, 0UL70DZ, 0UL70ZZ, 0UL73CZ, 0UL73DZ, 0UL73ZZ, 0UL74CZ, 0UL74DZ, 0UL74ZZ, 0UL77DZ, 0UL77ZZ, 0UL78DZ, 0UL78ZZ, 0UT70ZZ, 0UT74ZZ, 0UT77ZZ, 0UT78ZZ, 0UT7FZZ
	Male	CPT: 55250, 55450	Z30.2
Long Acting Reversible Contraceptives (LARCs)	Intrauterine Device (IUD) / Intrauterine System (IUS)	CPT: 58300 HCPCS: J7296, J7297, J7298, J7300, J7301, S4981, S4989	Z30.430, 0UH90HZ, 0UH97HZ, 0UH98HZ, 0UHC7HZ, 0UHC8HZ
	Hormonal Implant	CPT: 11981, 11983 HCPCS: J7306, J7307	0JHD0HZ, 0JHD3HZ, 0JHF0HZ, 0JHF3HZ, 0JHG0HZ, 0JHG3HZ, 0JHH0HZ, 0JHH3HZ
Short Acting Reversible Contraceptives (SARCs)		**NDC Codes**	
	Oral Contraceptive Pills	1,019 NDC codes were used, see footnote.	
	Injectable (1-month / 3-months)	52 NDC codes were used, see footnote.	
	Patch	00378334016, 00378334017, 00378334032, 00378334053, 50090168300, 65162035801, 65162035803, 69238152101, 69238152103, 71671010001, 71671010003, 71671010011	
	Vaginal Ring	00052027301, 00052027303, 00052027304, 00052027305, 00052027381, 00052027385, 00093767901, 00093767902, 50090100800, 50090561100, 50090595900, 50261031301, 65162046932, 65162046935, 66993060536, 66993060581, 78206014601, 78206014603	

Note: This table shows the female contraceptive CPT, HCPCS, ICD-10, and NDC codes used for determining procedures (LARCs, sterilizations) or prescriptions (SARCs) from the MarketScan inpatient, outpatient, and prescription claims data. All female contraceptive codes were selected following a guide released by U.S. Department of Health and Human Services, Office of Population Affairs (2023). For female sterilizations and LARCs, we selected the codes associated with the procedure itself rather than the initial consultations for the procedures. For oral contraceptive pills and injectables, the drug codes were excluded from the table for brevity but can be found in the contraceptive care measures code sets. For male sterilization (vasectomies) shown above, we use codes following Pierson et al. (2024).

Appendix Table A3: Procedure Rates for Control States

Time	LARCs	Sterilizations (M)	Sterilizations (F)	SARCs
May-Aug, 2021	1.23%	0.18%	0.13%	37.50%
May-Aug, 2022	1.11%	0.21%	0.14%	32.10%
May-Aug, 2023	0.95%	0.19%	0.13%	25.07%

Note: This table reports raw procedure rates for control states in the main specification, which are listed in Appendix Table A1. For LARCs and sterilizations, the procedure rate is the number of enrollees who have gotten that procedure between May and August, divided by the total number of female enrollees age 18 to 45 years (male enrollees age 18 and older for male sterilizations) who appeared in MarketScan during any of the four months, regardless of whether they were continuously enrolled. For SARCs, the procedure rate is the number of prescriptions between May and August, divided by the number of female enrollees age 18 to 45 years with prescription coverage during any of the four months.

Appendix Table A4: Difference-in-Differences Estimates, Child on Plan

	LARCs		Sterilizations (Female)	
	Child Under 18 in Plan	No Child Under 18 in Plan	Child Under 18 in Plan	No Child Under 18 in Plan
Short-Term Post × Treated	0.0048	0.0154*	0.0027	0.0062**
	(0.0064)	(0.0078)	(0.0032)	(0.0025)
Long-Term Post × Treated	0.0021	-0.0048	-0.0011	0.0018
	(0.0069)	(0.0066)	(0.0035)	(0.0014)
Treated Mean at $t = -1$	0.255	0.270	0.081	0.016
Percent Change, Short-Term	1.9%	5.7%	3.3%	39.7%
Percent Change, Long-Term	0.8%	-1.8%	-1.4%	11.3%
State-Month Observations	1,568	1,568	1,568	1,568
Total Enrollees	631,047	738,185	631,047	738,185
R-Squared	0.57	0.65	0.38	0.40

Note: This table reports the impact of the Dobbs decision leak on procedure rates in the "short-term" and "long-term" post-periods. The standard difference-in-difference estimates (in percentage points) of the coefficients of interest δ_{short} and δ_{long} from Equation 2 are displayed as "Short-Term Post × Treated" and "Long-Term Post × Treated." The pre-treatment period is May, 2021 to April, 2022. The short-term post-treatment period is May, 2022 to December, 2022. And finally, the long-term post period is January, 2023 to December, 2023. The regressions are weighted by number of enrollees. The standard errors are clustered on the state level and both state and month-year fixed effects are included. The treated mean at $t = -1$ reported reflects the mean procedure rate in the treated states in April, 2022 in percentage points. Sample: Women age 18 to 45 years relative to 2021 who have a child (or children) under 18 and denoted as a dependent on their plan and women who do not have a child (or children) under 18 and denoted as a dependent on their plan at any point in the study period.

Appendix Table A5: Difference-in-Differences Estimates

Panel (A) - Baseline OLS Specification

	LARCs	SARCs	Sterilizations (Female)	Sterilizations (Male)
Short-Term Post × Treated	0.0096*	-0.0529	0.0045**	0.0065***
	(0.0053)	(0.1030)	(0.0022)	(0.0018)
Long-Term Post × Treated	-0.0021	-0.3052	0.0003	-0.0001
	(0.0059)	(0.1933)	(0.0016)	(0.0020)
Treated Mean at $t = -1$	0.263	9.309	0.047	0.059
Percent Change, Short-Term	3.6%	-0.6%	9.5%	11.1%
Percent Change, Long-Term	-0.8%	-3.3%	0.7%	-0.2%
State-Month Observations	1,568	1,568	1,568	1,568
Total Enrollees	1,369,232	1,286,840	1,369,232	2,584,196
R-Squared	0.74	0.97	0.54	0.58

Panel (B) - Poisson Regression Accounting for At-Risk Population

	LARCs	SARCs	Sterilizations (Female)	Sterilizations (Male)
Short-Term Post × Treated	0.0349**	-0.0003	0.0293	0.0736***
	(0.0171)	(0.0076)	(0.0406)	(0.0243)
Long-Term Post × Treated	-0.0091	-0.0245*	-0.0106	-0.0069
	(0.0154)	(0.0135)	(0.0357)	(0.0307)
State-Month Observations	1,568	1,568	1,568	1,568
Total Enrollees	1,369,232	1,286,840	1,369,232	2,584,196
Pseudo R-Squared	0.93	1.00	0.76	0.85

Note: This table reports the impact of the Dobbs decision leak on procedure rates in the "short-term" and "long-term" post-periods. Panel (A) reports standard difference-in-differences estimates (in percentage points) of the coefficients of interest, δ_{short} and δ_{long}, from Equation 2, labeled as "Short-Term Post × Treated" and "Long-Term Post × Treated." The regressions are weighted by the number of enrollees. The treated mean at $t = -1$ reflects the mean procedure rate in the treated states in April 2022, reported in percentage points. Panel (B) presents analogous difference-in-differences estimates using an alternative specification based on Poisson regressions following Equation (3).The change in procedure rates caused by the Dobbs decision leak can be calculated taking the coefficients Δ_{short} and Δ_{long} and applying the transformation: $(\exp(\Delta) - 1) \times 100$. For LARCs and sterilizations, the exposure is set to the "at-risk" population, or the total number of enrollees at time t minus the cumulative number of LARC insertions and sterilization procedures performed up to $t - 1$, to account for the fact that a person who obtains effective contraception will not need to do so later. For SARCs, the exposure is set to the total number of enrollees at time t, since SARC prescriptions are recurrent. All regressions cluster standard errors at the state level and include both state and month-year fixed effects. Sample: Women age 18 to 45 years relative to 2021 for LARCs, SARCs, and female sterilizations; men age 18 and older relative to 2021 for male sterilizations.

Appendix Table A6: Difference-in-Differences Estimates, Treated MSA Distance From Control State

Panel (A)

	LARCs		SARCs	
	>120 miles	≤ 120 miles	>120 miles	≤ 120 miles
Short-Term Post × Treated	0.0124*	0.0133	0.0257	-0.1158
	(0.0064)	(0.0104)	(0.1156)	(0.0955)
Long-Term Post × Treated	0.0007	-0.0011	-0.0880	-0.4611***
	(0.0083)	(0.0080)	(0.1831)	(0.1482)
Treated Mean at $t = -1$	0.258	0.280	8.760	9.673
Percent Change, Short-Term	4.8%	4.8%	0.3%	-1.2%
Percent Change, Long-Term	0.3%	-0.4%	-1.0%	-4.8%
State-MSA-Month Observations	6,816	8,352	6,816	8,352
Total Enrollees	853,819	738,877	802,523	691,339
R-Squared	0.31	0.28	0.76	0.74

Panel (B)

	Sterilizations (Female)		Sterilizations (Male)	
	>120 miles	≤ 120 miles	>120 miles	≤ 120 miles
Short-Term Post × Treated	0.0057**	0.0054*	0.0077***	0.0087***
	(0.0027)	(0.0031)	(0.0023)	(0.0023)
Long-Term Post × Treated	0.0016	-0.0013	-0.0043**	0.0030
	(0.0019)	(0.0023)	(0.0017)	(0.0020)
Treated Mean at $t = -1$	0.043	0.045	0.055	0.065
Percent Change, Short-Term	13.1%	12.0%	14.0%	13.5%
Percent Change, Long-Term	3.8%	-3.0%	-7.9%	4.6%
State-MSA-Month Observations	6,816	8,352	6,816	8,352
Total Enrollees	853,819	738,877	1,585,891	1,410,180
R-Squared	0.11	0.07	0.22	0.16

Note: This table reports the impact of the *Dobbs* decision leak on procedure rates in the "short-term" and "long-term" post-periods based on metropolitan statistical areas (MSAs). The standard difference-in-difference estimates (in percentage points) of the coefficients of interest δ_{short} and δ_{long} from Equation 2 are displayed as "Short-Term Post × Treated" and "Long-Term Post × Treated." The pre-treatment period is May, 2021 to April, 2022. The short-term post-treatment period is May, 2022 to December, 2022. And finally, the long-term post period is January, 2023 to December, 2023. The regressions are weighted by number of enrollees and the standard errors are clustered on the state level and both state and month-year fixed effects are included. The treated mean at $t = -1$ reported reflects the mean procedure rate in the treated MSAs in April, 2022 in percentage points. Sample: Women age 18 to 45 (men age 18 and older) relative to 2021 who are in treated MSAs more than (less than) 120 miles from control states, compared to women in control MSAs.

B Conceptual Framework

We assume that women choose a contraceptive method $c \in \{\text{none}, \text{SARC}, \text{LARC}, \text{sterilization}\}$ in each period in order to maximize their lifetime expected utility.[18] Method c prevents pregnancy with probability p_c and entails a non-pregnancy cost κ_c (including price, side-effects, and any discomfort).[19]

If contraception fails, the individual faces a second decision: whether to terminate the pregnancy or carry to term (Levine, 2004). Abortion is associated with a cost ϕ which includes the monetary and moral/psychological cost but also legal and logistical considerations, which we assume rise post-*Dobbs* in states hostile to abortion.[20] Period utility $u(c_t, p_t, b_t | c_{t-1})$ is a function of contraception choices in this period (c_t), last period (c_{t-1}), pregnancy p_t, and birth of a child b_t.

Let R be the set of reversible contraception methods (the set excluding sterilization).[21] For each method c in R, period expected utility is given by:

$$Eu_t(c_t, p_t, b_t | c_{t-1}) = p_c \cdot u_t(c_t, 0, 0 | c_{t-1}) + (1 - p_c) \cdot \left[\max_{\text{no abort,abort}} \{ u_t(c_t, 1, 1 | c_{t-1}),\ u_t(c_t, 1, 0 | c_{t-1}) - \phi \} \right] - \kappa_c(c_{t-1})$$

The cost of a given form of birth control may vary by the type of birth control a women is using presently (whether one is initiating a LARC or continuing a LARC, for example). In contrast to other forms of birth control, sterilization is an absorbing state with

$$EV_t(sterilize, p_t, b_t | c_{t-1}) = u_t(sterilize, 0, 0 | c_{t-1}) + \sum_{k=1}^{\infty} \beta^k E_t u_{t+k}(sterilize, 0, 0 | sterilize)$$

The recursive problem for individuals who are not sterilized is given by

$$V_t(c_{t-1}) = \max_{\text{not sterilize, sterilize}} \{ \max_{c_t \in R} \{ Eu_t(c_t, p_t, b_t | c_{t-1}) + \beta EV_{t+1}(c_t) \}, EV_t(sterilize) \}$$

If individuals perceive abortion as more costly (higher ϕ), then we would expect shifts to more effective birth control among individuals who (1) have a high probability of pregnancy and (2) low expected utility of having a child conditional on pregnancy. Compared to a LARC or SARC, sterilization is chosen among those

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[18] For simplicity, we model the decision of women individually, though in many cases, couples jointly make contraceptive choices and, in other cases, single men make decisions for themselves. It is interesting but beyond the scope of this paper to think about how these decisions and the impact of abortion policy differ.

[19] We acknowledge that as in Michael and Willis (1976), various methods differ in fixed and marginal costs. We abstract from this for the purpose of this conceptual framework, but given the large price elasticities reported in Bailey et al. (2023), up-front costs for LARCs may be important barrier to adoption for many women.

[20] It is interesting to note that the monetary cost of an abortion fell for most women post-*Dobbs* (Littlefield, 2023). However, in our subsample of employer-insured individuals, it is unlikely that the monetary cost was a significant barrier to abortion, relative to other costs.

[21] We also abstract from the potential reversibility of tubal ligation. Reversal is uncertain and costly, but these would be important considerations if estimating the model. It is also important to note that women may become pregnant through IVF following tubal ligation, but this is also costly.

who have low expected utility from having a child conditional on pregnancy for all periods in the future. Those who use irreversible methods to eliminate the chance of pregnancy may later regret their choice, as fertility preferences are not stable over the life course (Lazzari and Beaujouan, 2025; Müller et al., 2022). Most relevantly, (Curtis et al., 2006) documents that among sterilized women, reported regret which is twice as high for younger compared to older women, and rates of attempted procedure reversal or IVF consultation are eight times higher among younger relative to older women.