

Access to Abortion Care and Low-Income Women's Health: Evidence from Medicaid Beneficiaries

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ROE OVERTURNED

6-to-3 Ruling Ends 50 Years of Federal Abortion Rights



ABORTION UNTHINKABLE

"We therefore hold that the Constitution does not confer a right to abortion. Roe and Casey must be overruled, and the authority to regulate abortion must be returned to the people and their elected representatives."

Justice Samuel A. Alito Jr., in the majority opinion.

By ADAM LUPTAK

WASHINGTON — The Supreme Court on Friday overturned Roe v. Wade, eliminating the constitutional right to abortion after almost 50 years in a decision that will transform American life, reshape the nation's politics and lead to all but total bans on the procedure in about half of the states.

"Roe was egregiously wrong from the start," Justice Samuel A. Alito Jr. wrote for the majority in the 6-to-3 decision, one of the most momentous from the court in decades.

Bans in at least seven states swiftly took effect after they enacted laws meant to be enforced immediately after Roe fell. More states are expected to follow in coming days, reflecting the main holding in the decision, that states are free to end the practice if they choose to do so.

The decision, which closely tracked a leaked draft opinion, prompted celebrations and outcries across the country, underlining a divisive topic of abortion after decades of unresolving legal and political battles.

The decision would jeopardize the health of millions of women, argued people to head to the polls. "It is the realization of extreme ideology and a tragic error by the Supreme Court," Mr. Biden said. The ruling will test the legitimacy of the court and vindicate a decades-long Republican project of installing conservative justices prepared to reject the precedent affirmed by earlier courts. It will also be one of the signal legacies of President Donald J. Trump, who vowed to name justices who would overrule Roe. All three of his appointees were in the majority in the ruling.

Chief Justice John G. Roberts Jr. voted with the majority, saying he would have taken "a measured course," stopping short of overruling Roe out of respect for the court's three liberal predecessors.

The case, Dobbs v. Jackson Women's Health, No. 19-1392, acted in a dominant role in the court's recent term, after decades of unresolving legal and political battles who

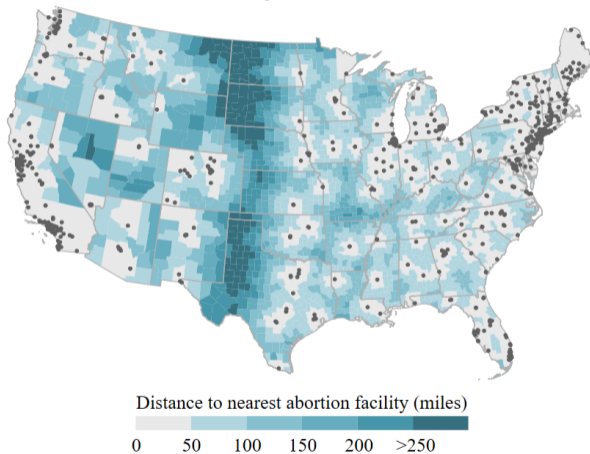
PHOTOGRAPH BY PHAN HUANG FOR THE NEW YORK TIMES

The Changing Landscape of Abortion Access

May 1, 2022

The average American woman aged 15-44 is **25 miles** from nearest abortion facility.

< **1%** are more than 200 miles



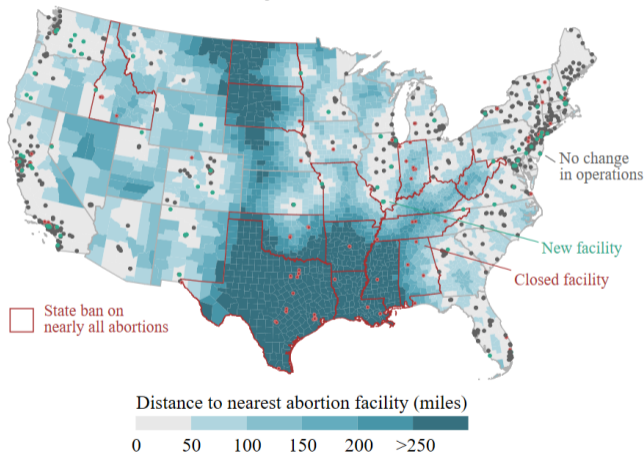
The Changing Landscape of Abortion Access

May 1, 2024

22% of women aged 15-44 have experienced an increase in distance

The average woman in this group is now **317 miles** from the nearest abortion facility.

62% are more than 200 miles



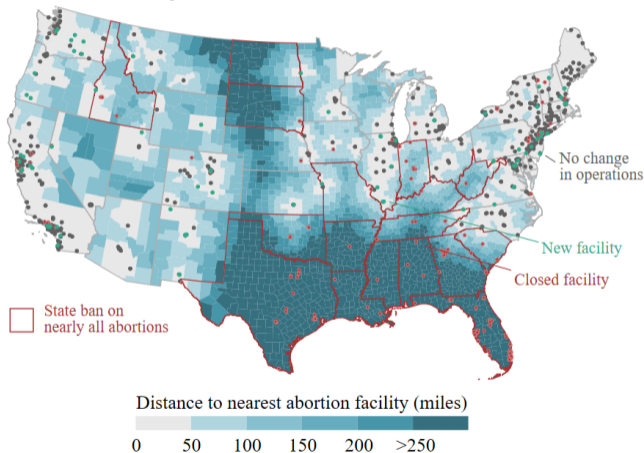
The Changing Landscape of Abortion Access

If you factor in 6-week abortion bans as well as near-total bans:

33% of women aged 15-44 have experienced an increase in distance to an abortion facility in a state without a 6-week ban

The average woman in this group is now **371 miles** from the nearest such abortion facility.

May 1, 2024 + 6-week bans

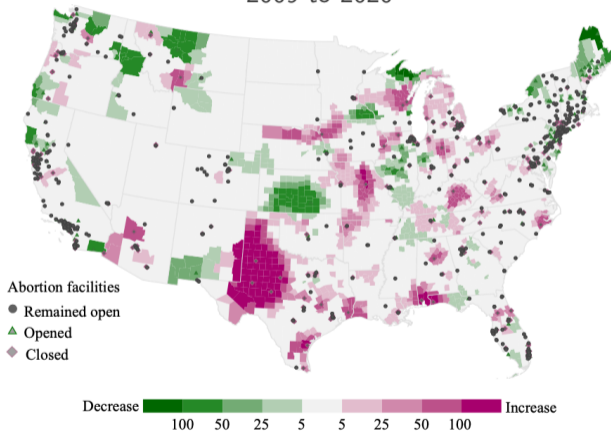


What do we know about the effects of distance?

Even before Dobbs, state policies drove changes in abortion access.

Myers (2024) constructs a database of abortion facility operations from 2009-2020 and uses this to create a panel of county-by-month driving distances

Change in distance to nearest abortion facility,
2009 to 2020

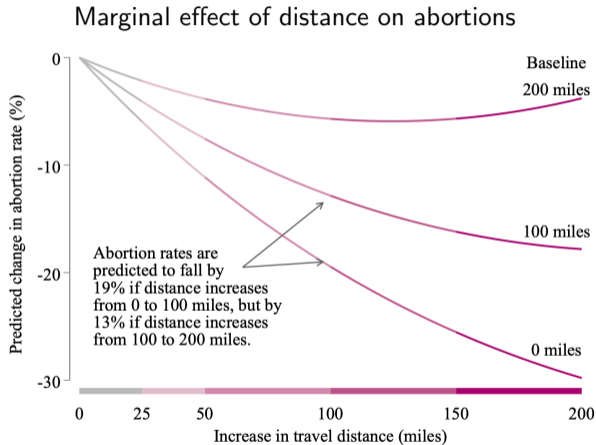


Source: Myers, Caitlin. 2024. "Forecasts for a Post-Roe America: The Effects of Increased Travel Distance on Abortions and Births." *Journal of Policy Analysis and Management* 43(1): 39-62.

What do we know about the effects of distance?

An increase in distance from 0 to 200 miles reduces abortions in the formal healthcare system by about **32%** (Myers, 2024)

This is quite similar to findings in earlier studies leveraging distance variation in the contexts of Texas and Wisconsin policy shocks. Quast et al., 2017, Fischer et al. (2018), Lindo et al. (2020), and Venator and Fletcher (2020).

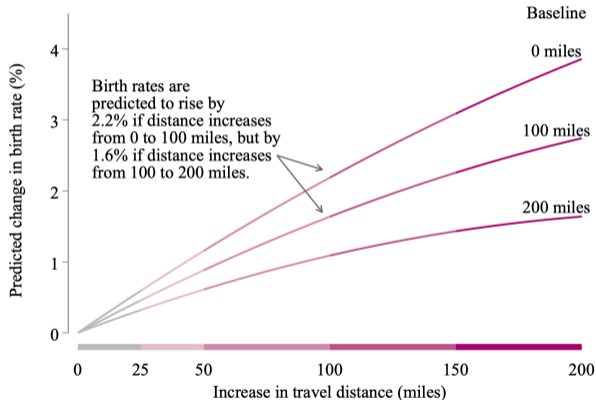


Source: Myers, Caitlin. 2024. "Forecasts for a Post-Roe America: The Effects of Increased Travel Distance on Abortions and Births." *Journal of Policy Analysis and Management* 43(1): 39-62.

What do we know about the effects of distance?

An increase in distance from 0 to 200 miles decreases abortions by about **32%**...and increases births by about **3.8%** (Myers, 2024)

Marginal effect of distance on births



Characteristics of people seeking abortions

In 2020, about **930,000** people obtained abortions in the formal healthcare system. That represents about **one-fifth** of all pregnancies

Among people seeking abortions, an estimated

98% are older than age 18

56% have previously given birth

73% are poor or low income

55% report a recent disruptive life event

Among women in the Turnaway Study,

84% have subprime credit scores

Sources: Jones et al., 2022; Jones and Chiu, 2023; Miller et al., 2023.

Our question: What are the health effects of being trapped by distance?

Use administrative Medicaid data from years leading up to *Dobbs* (2015–2019) to analyze the effects of distance to the nearest abortion facility on the health outcomes of adolescent women covered by Medicaid

Main analytic sample: Female Medicaid beneficiaries aged 15–18, who are eligible as children (regardless of pregnancy status) *in states with usable Medicaid data*

Approach: Event-study models using variation in distance to the nearest abortion facility

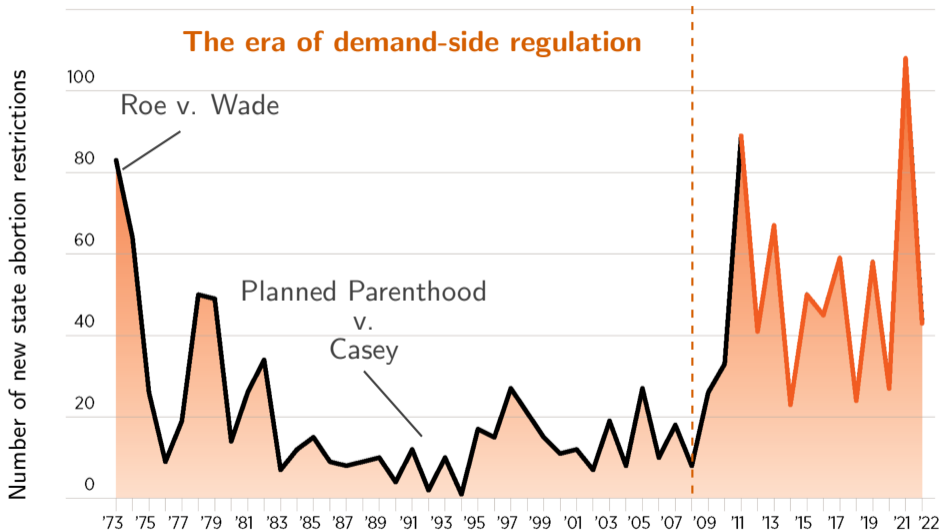
Outcomes: live birth, miscarriage/stillbirth, pregnancy complications, delivery complications, severe maternal morbidity (SMM), ED visits, infections, pain, and mental healthcare

Outline for Talk

1. ~~Context and motivation~~
2. (More) Institutional Background & Existing Evidence
3. Potential Mechanisms
4. Medicaid Program and Implications for Sample Selection
5. Data
 - Abortion Facilities data
 - Medicaid enrollment & claims data
6. Empirical Design
7. Results (so far)
8. Discussion
 - Next steps to improve the existing research design
 - Extending the analysis to the post-Dobbs environment

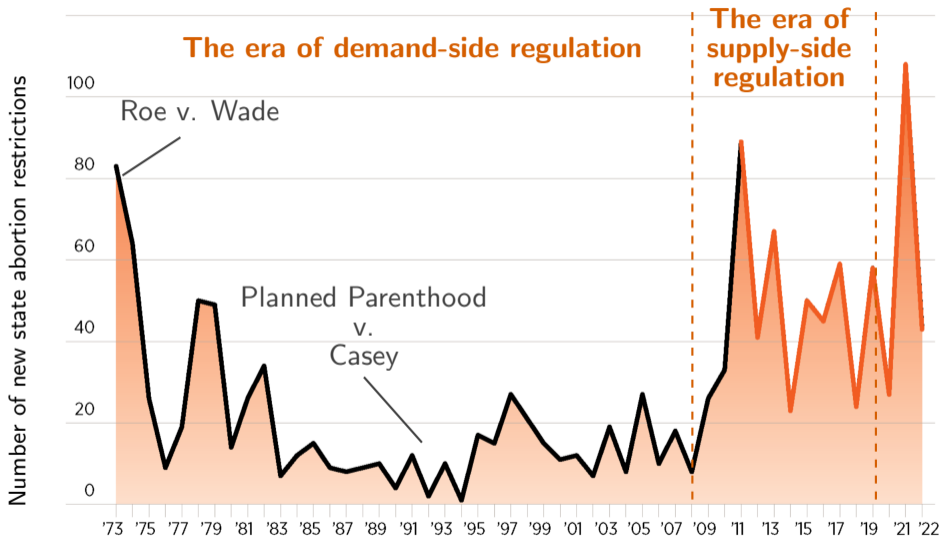
Institutional Background & Existing Evidence

A brief history of U.S. abortion regulation



Source: The Guttmacher Institute. 2022. *U.S. States have enacted 1,381 abortion restrictions.* Online infographic. Credit to Ted Joyce for coining "demand-side" and "supply-side" regulation of abortion.

A brief history of U.S. abortion regulation



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What have we learned from state policy variation in the liberalization era of 1967-1973?

The legalization of abortion

Reduced births (Levine et al., 1999; Angrist and Evans, 1999; Gruber et al., 1999; Bitler and Zavodny, 2002; Guldi, 2008; Ananat et al., 2009; Joyce et al., 2013; Myers, 2017; Abboud, 2019; Jones, 2021)

Reduced Black maternal mortality (Farin et al., 2024)

Reduced teen marriages through dramatic reduction in “shotgun marriages” (Angrist and Evans, 1999; Myers, 2017)

Increased women’s educational attainment, labor supply, and earnings (Angrist and Evans, 1999; Kalist, 2004; Abboud, 2019; Lindo et al., 2020; Jones, 2021)

What have we learned from studying demand-side restrictions?

Mandatory waiting periods

One-trip mandatory waits have little observable effects on abortions or births (Myers, 2021)

Two-trip mandatory waits delay and reduce abortions (Altaus and Henshaw, 1994; Joyce and Kaestner, 2000; Joyce and Kaestner, 2001; Altındağ and Joyce, 2002; Lindo and Pineda-Torres, 2021; Myers, 2021)

Two-trip mandatory waits increase births (Myers, 2021)

Parental involvement laws

Reduce in-state abortions (Joyce and Kaestner, 1996; Haas-Wilson, 1996; Levine, 2003; Joyce et al., 2006; Dennis et al., 2009; Joyce et al., 2020; Myers and Ladd, 2020)

Conflicting evidence on births. (Levine, 2003; Joyce et al., 2020; Myers and Ladd, 2020)

Medicaid Funding Restrictions

Increase births (Cook et al., 1999; Henshaw et al., 2009)

What have we learned from studying supply-side restrictions?

Increases in distance

Delay and reduce abortions Quast et al. (2017), Fischer et al. (2018), Lindo et al. (2020), Venator and Fletcher (2020), Myers (2024)

Increase births Fischer et al. (2018) and Myers (2024)

TRAP Laws

Increase teen births Jones and Pineda-Torres (2024)

Reduce college initiation and completion Jones and Pineda-Torres (2024)

The Turnaway Study

Women who are denied a wanted abortion because they arrive just past a gestational age limit experience large increases in past-due debt and adverse credit events Miller et al. (2024)

Studies that test for heterogeneous effects observe that women who are young, Black, and/or poor experience the greatest effects of abortion regulations.

POTENTIAL MECHANISMS

How Might Distance to Abortion Facilities Affect Women's Health?

An individual who experiences a barrier to accessing a desired abortion may...

Feel a loss of agency over their body and life, and experience increased risks of domestic violence and financial distress (see: Turnaway Study) \Rightarrow risks to physical & mental health

Continue the pregnancy and undergo labor/delivery \Rightarrow potential complications of pregnancy and childbirth, which have much greater health risks than abortions (Nambiar et al., 2022)

Delay terminating the pregnancy to a later gestational age \Rightarrow greater health risks and higher likelihood of complications

Turn to self-managed methods (e.g., hitting oneself in the abdomen or taking unapproved drugs)

MEDICAID PROGRAM

Medicaid Program and Implications for Sample Selection

Medicaid is a joint federal and state program; provides heavily subsidized health insurance to low-income individuals who meet eligibility requirements

Federal gov't provides funding to states if they meet core requirements, but states have wide latitude in designing their programs

Pregnant individuals: mandatory eligibility group, i.e., states are mandated to cover pregnant people by federal law as long as their income falls below their state's eligibility threshold

This means that many individuals are only eligible for Medicaid if they are pregnant
Sample selection bias: distance to abortion facility affects likelihood of someone being observed pregnant (and therefore in our data)

Our solution: focus on young women who are eligible as children (regardless of pregnancy status)

Medicaid Coverage of Abortion Services

The 1977 Hyde Amendment bans Medicaid from using federal funds to pay for abortion services

16 states use state funds to cover abortion services, the rest do not

CMS says that states are not required to submit claims that are solely paid by state funding to them → abortions are not reliably recorded in our Medicaid claims data

Our solution: focus on other physical and mental healthcare outcomes measured in Medicaid data (including live births, miscarriages, stillbirths, and fetal deaths)

DATA

Data I: Myers Abortion Facility Database

Collected for academic research purposes by Caitlin Myers & published at Open Science Framework (OSF)

Covers period from January 1, 2009 through the present day and is regularly updated

Contains the names and addresses of all facilities—including private physician offices, hospitals, and freestanding clinics—that publicly advertise the provision of abortion services or are otherwise likely to be identifiable to women seeking an abortion

Data collection techniques documented in detail in reference manual

- Scraping licensing databases and web-based directories

- Calling all facilities every few months to verify services

- Regularly cross-checked with other databases and websites

Data II: Medicaid Data

From the Centers for Medicare & Medicaid Services (CMS)

Current access: the Dartmouth Data Analytic Core (DAC)

In process of switching data access to Stanford Population Health Sciences (PHS) due to DAC closing

TBD: may need to shift to the CMS VRDC in the future

100% administrative Medicaid enrollment and claim records, 2015–2019

Demographic enrollment (DE), inpatient (IP), other services (OT), and prescription drug (RX) files; linked using beneficiary IDs

Only use states with validated data quality

CMS changed format from MAX (2009-2014) to TAF (2015-2019)

Transition years (2013-2014) currently missing in DAC files → focus on TAF years

Cannot study TX & Wisconsin abortion laws from 2013 currently

May be able to with Stanford data that was purchased more recently

Key Outcomes I

Live birth indicator: follow approach in Auty et al. (2023) to identify live birth events using diagnosis and procedure codes in IP and OT files as well as restrictions on claim dates

Benchmark using vital statistics data from CDC

Miscarriage/stillbirth/fetal death indicator: use diagnoses and procedure codes for services related to these events in IP and OT files

We do not have good gestational age information, and therefore do not distinguish between these

Key Outcomes II

Indicators for live birth with and without any labor/delivery complications ICD Codes

Any pregnancy complications indicator ICD Codes

Severe maternal morbidity (SMM) indicator

21 conditions as defined by CDC

Use of any antibiotics indicator (proxy for infections)

Use of any painkillers indicator (proxy for pain)

Any ED visit indicator

Key Outcomes III

Indicator for mental healthcare services in outpatient, inpatient, or ED settings
ICD codes for mental health conditions and self-harm behaviors

Indicator for use of mental health-related prescription drugs
Anti-depressants, anti-anxiety medication, antipsychotics, anti-addiction

EMPIRICAL APPROACH

Empirical Approach

- We use information on beneficiary ZIP code of residence and calculate the geodesic (“as the crow flies”) distance from each ZIP code’s population-weighted centroid to the location of the nearest abortion facility in each calendar quarter that they are enrolled
 - For beneficiaries who move, we assign the first ZIP in which we observe them
- We follow Dube et al. (2023) and construct “clean” treatment and control units
 - Treatment: beneficiaries continuously enrolled in ZIPs that have **a change in distance >5 miles**, from 4 quarters before to 5 quarters after the change [Details](#)
 - We focus on beneficiaries that only ever experience one distance change
 - We allow multiple changes per ZIP if they do not happen within 9 quarters of each other
 - Control: beneficiaries who are continuously enrolled for at least 9 quarters in ZIPs that do not experience any change in distance of more than 0.25mi
 - We drop beneficiaries in all other ZIPs

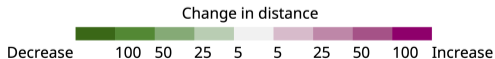
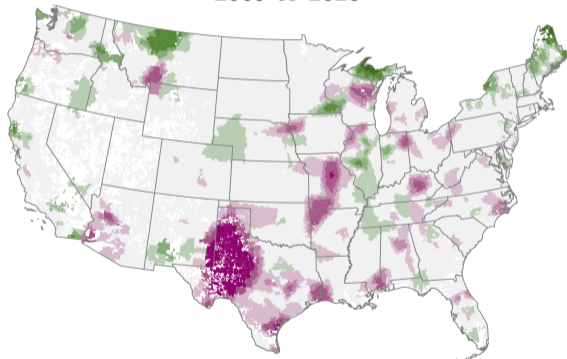
Distance Increases vs. Decreases

- Distance increases stem mostly from facility closures due to TRAP laws and other regulations that make it more costly and difficult to provide abortion services
- Distance decreases stem primarily from innovations in telehealth (medication) abortion and policy changes allowing advanced practice clinicians to provide abortion services
- The effects of increases vs. decreases may not be symmetric due to:
 - Differences in the underlying variation sources (e.g., decreases in distance usually due to access to medication abortion at smaller providers with limited availability, which is not an option for everyone)
 - Differences in the underlying populations being affected
- We focus our attention on estimating effects of **distance increases**, which is most relevant for generalizing to post-*Dobbs*
 - We also show results using both types of variation

Identifying Variation in Distance: The Full Extent

ZIP codes experiencing changes in distance between 2009 and 2020

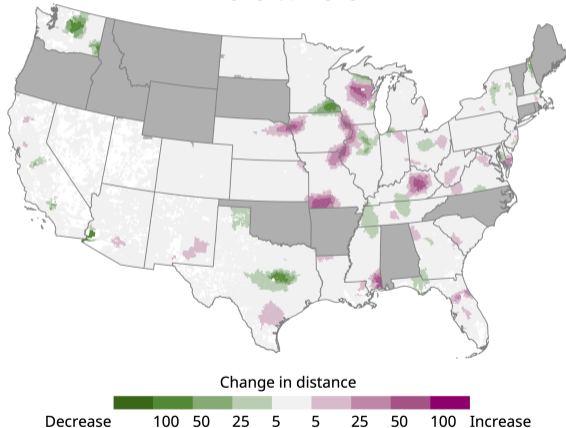
Change in distance to nearest abortion facility,
2009 to 2020



Identifying Variation in Distance: TAF States, 2015-2019

Change in distance to nearest abortion facility,
2015 to 2019

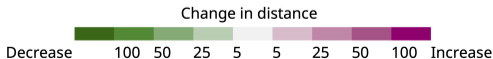
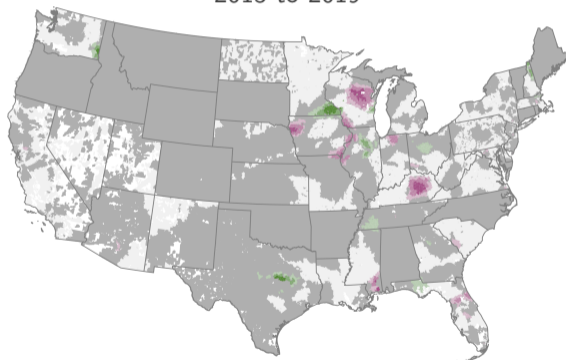
ZIP codes experiencing changes
in distance between 2015 and
2019 that are in states with
high-quality TAF data



Identifying Variation in Distance: TAF States, 2015-2019, Clean Treatment and Control ZIPs

ZIP codes experiencing changes in distance between 2015 and 2019 that are in states with high-quality TAF data and meet our “clean” treatment and control criteria

Change in distance to nearest abortion facility,
2015 to 2019



Empirical Model

We use the distance variation in a distributed leads and lags model, and then apply the approach from Schmidheiny & Siegloch (2023) to recover the event-study coefficients

- Event-study coefficients are linear functions of the leads and lags

$$Y_{izst} = \alpha + \sum_{h=-5}^{h=4} \beta_h \text{Distance}_{z,t+h} + \delta_i + \gamma' X_{it} + \lambda_{st} + \epsilon_{izst}$$

for each beneficiary i in ZIP z , state s , observed in year-quarter t and for whom distance to the nearest abortion facility is measured in quarter $t + h$

- $\text{Distance}_{z,t+h}$ is the distance to the nearest abortion facility from ZIP z in quarter $t + h$
- δ_i : individual FEs
- λ_{st} : state \times quarter FEs
- X_{it} : single year of age FEs
- Standard errors clustered on ZIP and beneficiary level

Summary Statistics I

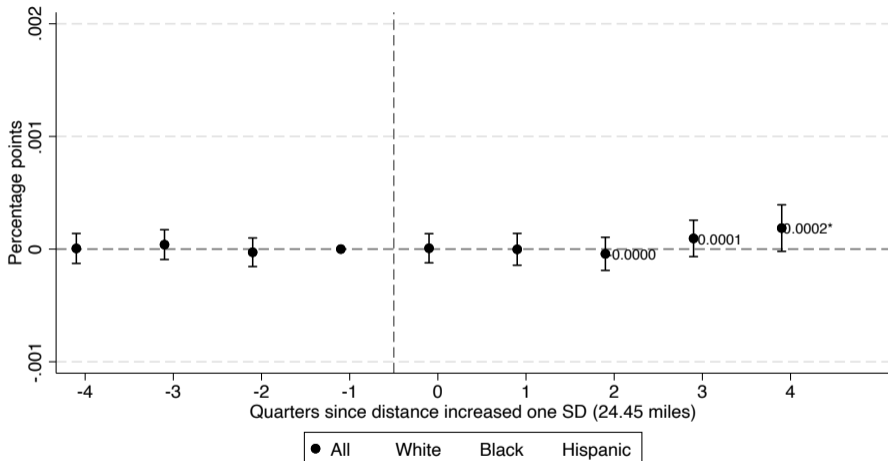
Beneficiary characteristic	Control	Distance \uparrow	Distance \downarrow
Average age (SD)	16.4 (0.6)	16.8 (0.6)	16.8 (0.6)
Race/ethnicity			
White (%)	31.6	56.6	47.0
Black (%)	23.4	16.7	18.7
Hispanic (%)	27.1	13.5	11.4
Other (%)	6.6	4.2	5.0
Missing (%)	11.3	9.1	17.8
Moves ZIP code ever (%)	13.5	7.9	16.1
Average distance in first quarter (SD)	16.3 (23.8)	28.0 (25.7)	49.5 (35.3)
Average distance change (SD)		31.9 (22.7)	-19.0 (18.6)
# ZIP Codes	11,963	918	702
# Beneficiaries	972,239	23,567	14,227
# Beneficiary-quarters	8,750,151	212,103	128,043

Summary Statistics II

	Control	Distance ↑	Distance ↓
Beneficiary in IP/OT Sample (%)	96.2	98.0	82.4
Live birth (%)	3.1	5.0	3.8
Miscarriage or stillbirth (%)	0.58	0.79	0.49
Pregnancy complication (%)	4.2	6.2	4.7
Live birth w/ delivery complication (%)	2.5	3.8	3.0
Live birth w/o delivery complication (%)	0.69	1.31	0.92
Delivery with SMM (%)	0.12	0.15	
Mental health diagnosis (%)	28.2	37.0	38.6
Beneficiary in OT Sample (%)	83.4	82.1	75.7
ED visit (%)	46.5	54.1	52.4
Beneficiary in RX Sample (%)	92.1	84.0	70.9
Antibiotics claim (%)	56.4	70.0	59.1
Pain medication claim (%)	24.9	33.5	26.4
Mental health drug claim (%)	17.9	29.7	25.3

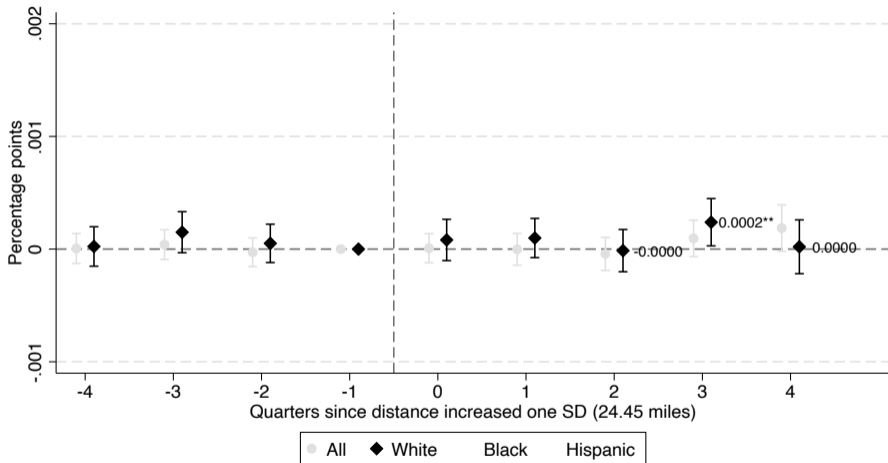
RESULTS

Live Birth, Whole Sample



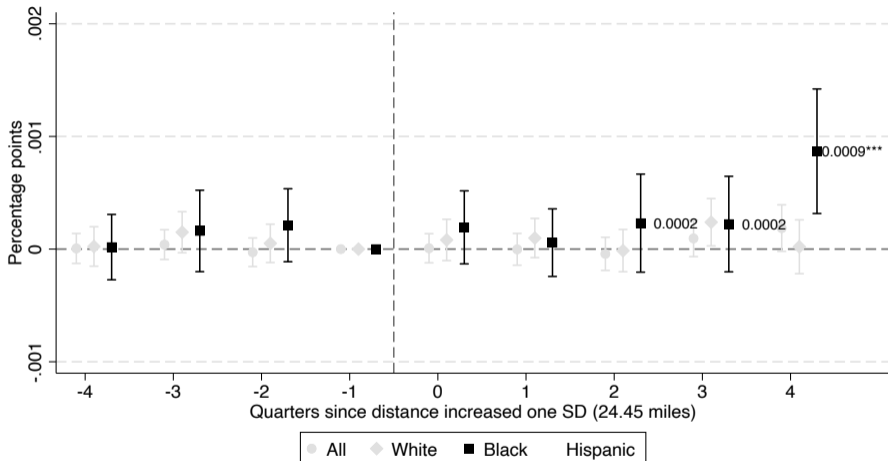
Outcome means: All = 0.0047, White = 0.0046, Black = 0.0057, Hispanic = 0.0044

Live Birth, White Women



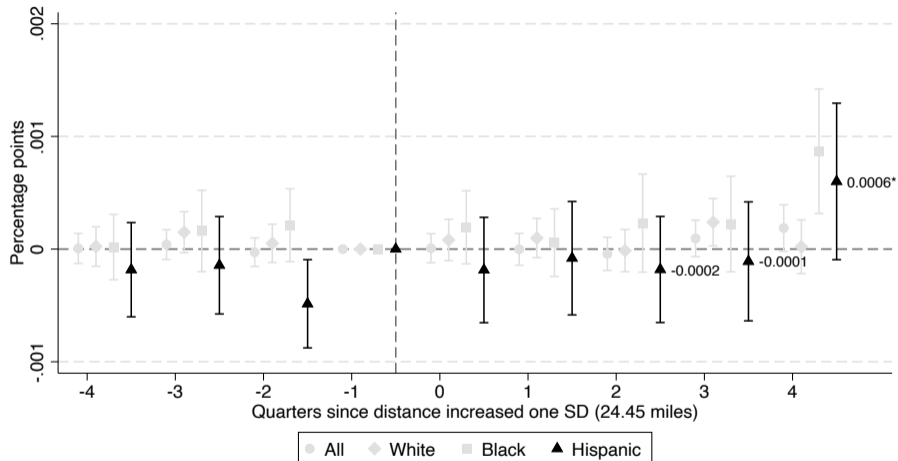
Outcome means: All = 0.0047, White = 0.0046, Black = 0.0057, Hispanic = 0.0044

Live Birth, Black Women



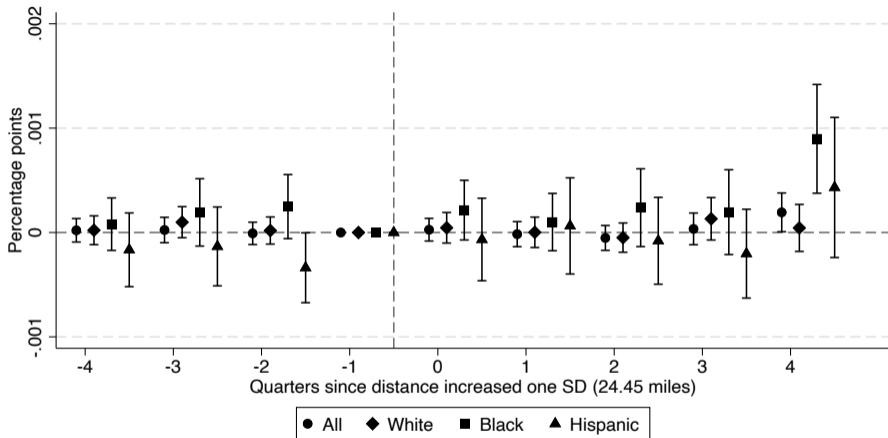
Outcome means: All = 0.0047, White = 0.0046, Black = 0.0057, Hispanic = 0.0044

Live Birth, Hispanic Women



Outcome means: All = 0.0047, White = 0.0046, Black = 0.0057, Hispanic = 0.0044

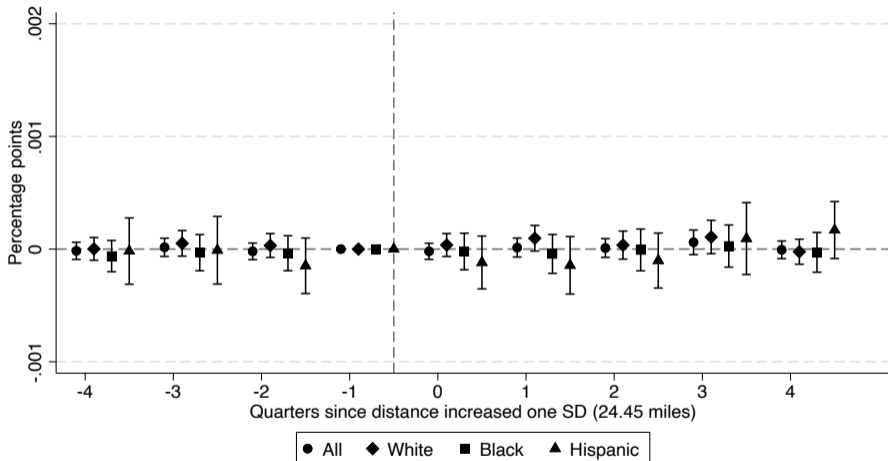
Live Birth with Delivery Complications



Outcome means: All = 0.0037, White = 0.0036, Black = 0.0045, Hispanic = 0.0035

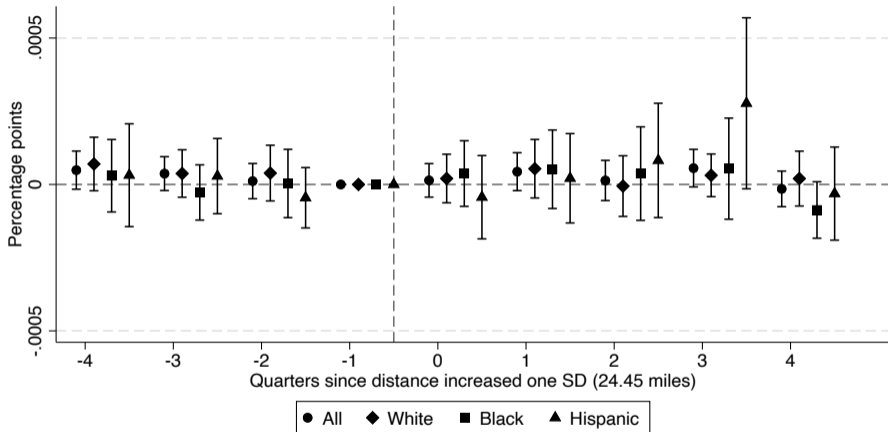
Coefficient magnitudes: All, t=4: 0.0002**; Black, t=4: 0.0009***

Live Birth without Delivery Complications



Outcome means: All = 0.0010, White = 0.0010, Black = 0.0013, Hispanic = 0.0009

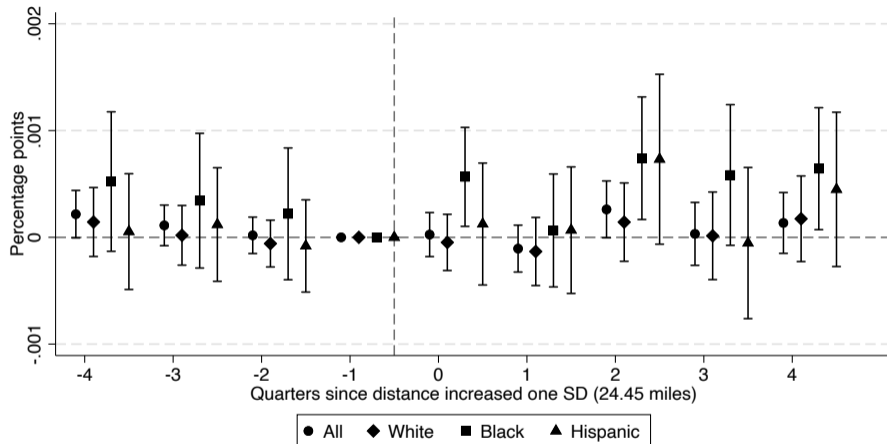
Miscarriage, Stillbirth or Fetal Death



Outcome means: All = 0.0009, White = 0.0009, Black = 0.0011, Hispanic = 0.0008

Coefficient magnitudes: All, t=3: 0.00006*; Black, t=4: -0.00009*; Hispanic, t=3: 0.00028*

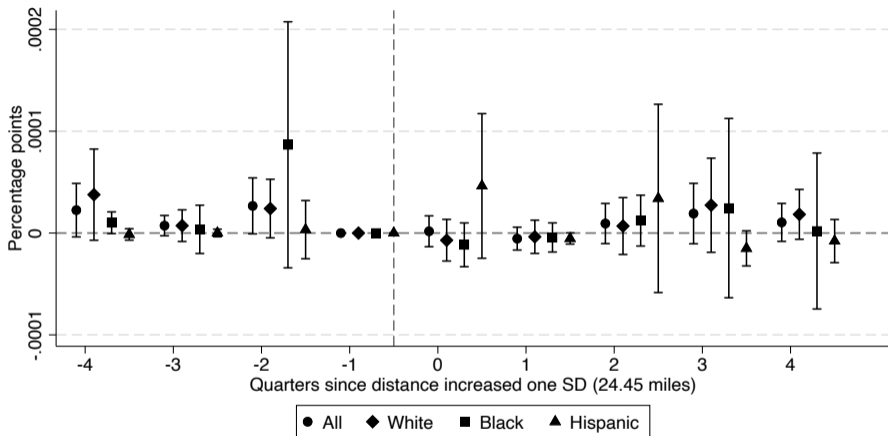
Any Pregnancy Complications



Outcome means: All = 0.0110, White = 0.0117, Black = 0.0132, Hispanic = 0.0098

Coefficient magnitudes: All, t=2: 0.0003*; Black, t=2: 0.0007***; Black, t=3: 0.0006*; Black, t=4: 0.0006**; Hispanic, t=2: 0.0007*

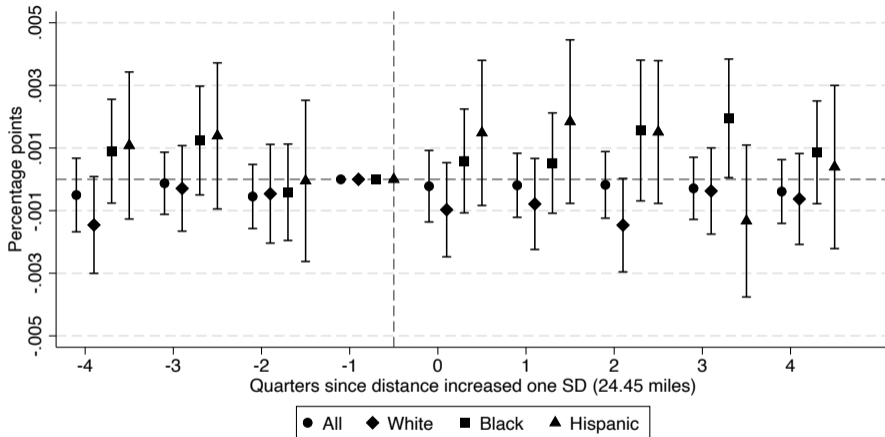
Severe Maternal Morbidity



Outcome means: All = 0.0002, White = 0.0002, Black = 0.0003, Hispanic = 0.0002

Coefficient magnitudes: Hispanic, t=3: -0.00002*

Any Antibiotic Prescription



Outcome means: All = 0.1426, White = 0.1924, Black = 0.1258, Hispanic = 0.1183

Coefficient magnitudes: White, t=2: -0.0015*; Black, t=3: 0.0019**

Robustness

- Include distance increases and decreases [Results](#)
- Restrict to states where observed birth rates are within 20% of CDC reports [Results](#)
- Drop any beneficiary that (ever) moves [Results](#)

Additional Outcomes

- Mental health diagnoses [Results](#)
- Mental health prescriptions [Results](#)
- ED visits [Results](#)
- Pain medicine prescriptions [Results](#)

Summary

- Increased distance to the nearest abortion facility significantly raises the likelihood that a Medicaid-enrolled woman aged 15–18 has a live birth 3-4 quarters later. A one SD increase in distance leads to...
 - 0.02 pp (4% relative to mean) increase among white women
 - 0.09 pp (16% relative to mean) increase among Black women
 - 0.06 pp (14% relative to mean) increase among Hispanic women
- Among Black women: increased incidence of delivery and pregnancy complications, and use of antibiotics
 - Consistent with pregnancy and childbirth being more risky than abortions
 - Also suggestive evidence of an increase in miscarriages/stillbirths/fetal deaths among Hispanic women
- No statistically significant impacts on SMM, mental healthcare, overall ED visits, or painkiller prescriptions

Next Steps

1. Improve internal validity of research design and extend analysis time period to cover 2009–2019
 - We are hoping that using the more recently purchased Medicaid data at Stanford will allow us to do this
2. Add other populations to the analysis
 - Adults in ACA Medicaid expansion states
 - Infants and young children

Next Steps

3. Extend analysis to measure impacts of *Dobbs*

- Abortion bans could impact health outcomes independently from the effects of distance
- “Chilling” effects among providers in ban or threatened ban states
- Impacts on provider migration
- Telehealth may be changing the role of distance
 - In 2021, FDA removed in-person dispensing requirement on Mifepristone
 - In June 2024, Supreme Court rejected a lawsuit challenging the FDA rule
 - Future legality remains uncertain (Cohen et al., 2024)
 - Distance still seems to matter post-*Dobbs* (Dench, Pineda-Torres & Myers, 2024)

Message to CMS: Please keep your data accessible to researchers!

APPENDIX SLIDES

Pregnancy & Delivery Complications: ICD-10 Codes

Complications of Pregnancy: All diagnosis codes starting with...

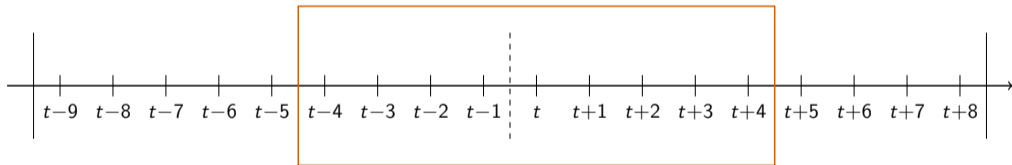
- O09 – Supervision of high risk pregnancy
- O10-O16 – Edema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium
- O20-O29 – Other maternal disorders predominantly related to pregnancy

Complications of Delivery: All diagnosis codes starting with...

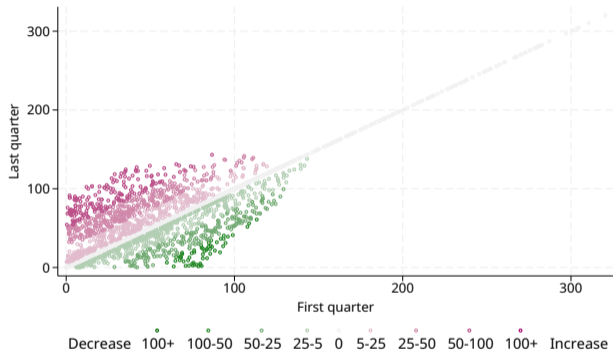
- O60-O77 – Complications of labor and delivery

“Clean” Treatment Conditions

- Outcome must be observed in all quarters $t - 4$ through $t + 4$
- Distance change between $t - 1$ and t must exceed 5mi
- No further distance change exceeding 0.25mi between $t - 9$ and $t + 8$

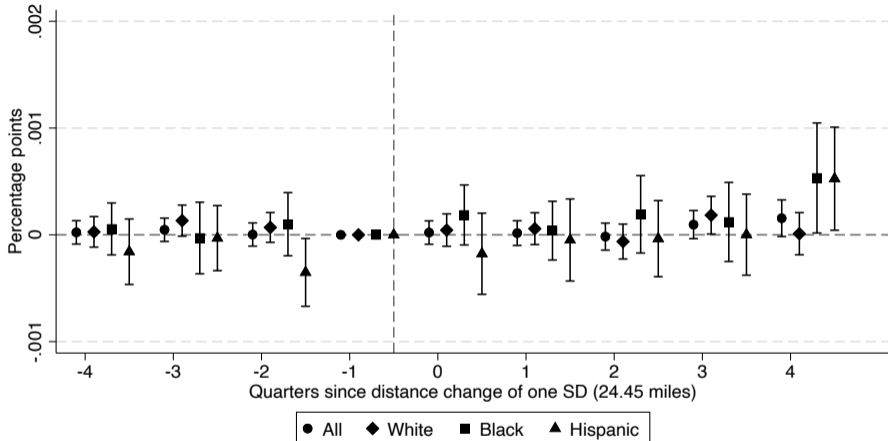


Distance Changes in Treatment ZIPs



The units of observation are ZIP code-episodes. The x-axis shows the distance in the first quarter of the episode, while the y-axis shows the distance in the last quarter of the episode. [Back](#)

Live Birth, Distance Increases and Decreases

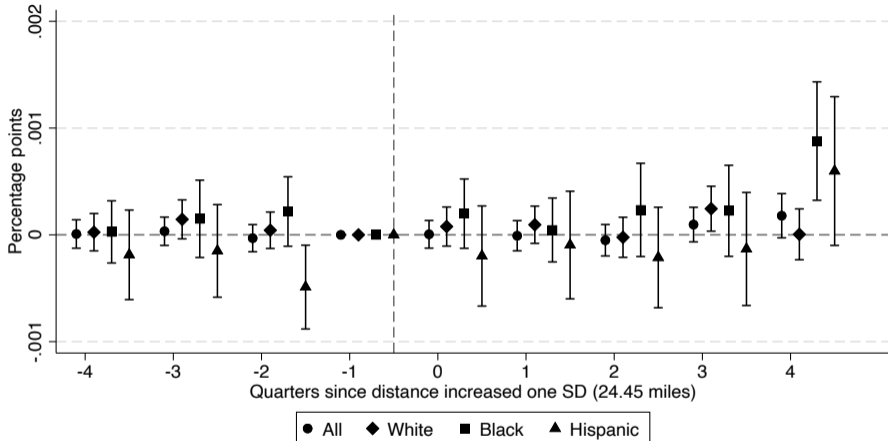


Outcome means: All = 0.0047, White = 0.0046, Black = 0.0057, Hispanic = 0.0044

Coefficient magnitudes: All, t=4: 0.0002*; White, t=3: 0.0002**; Black, t=4: 0.0005**; Hispanic, t=4: 0.0005**

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Live Birth, Birth Rate Matches CDC Estimates

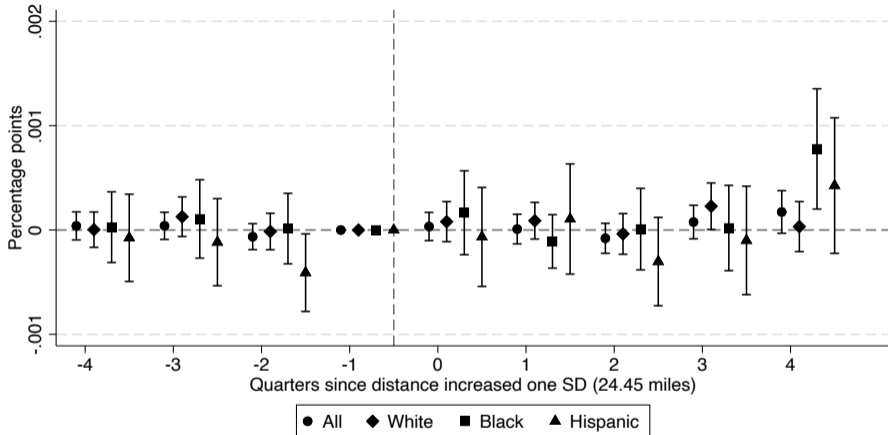


Outcome means: All = 0.0046, White = 0.0046, Black = 0.0057, Hispanic = 0.0044

Coefficient magnitudes: All, t=4: 0.0002*; White, t=3: 0.0002**; Black, t=4: 0.0009***; Hispanic, t=4: 0.0006*

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Live Birth, Drop Beneficiaries that Move

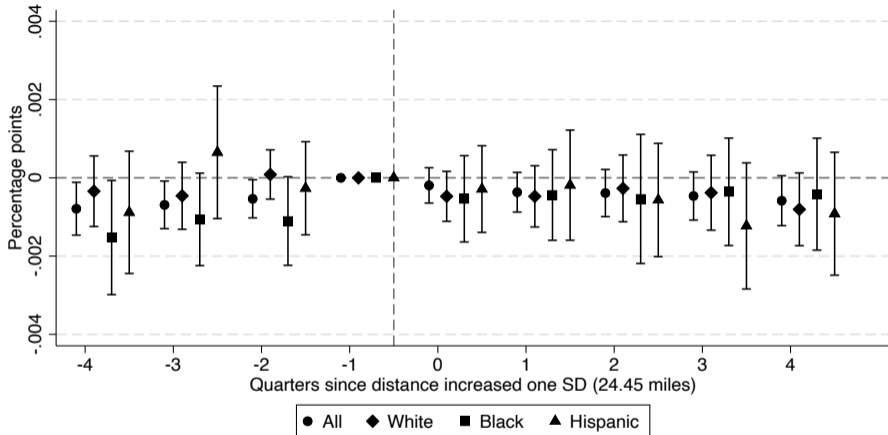


Outcome means: All = 0.0038, White = 0.0038, Black = 0.0049, Hispanic = 0.0034

Coefficient magnitudes: All, t=4: 0.0002*; White, t=3: 0.0002**; Black, t=4: 0.0008***

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Any Mental Health Diagnosis

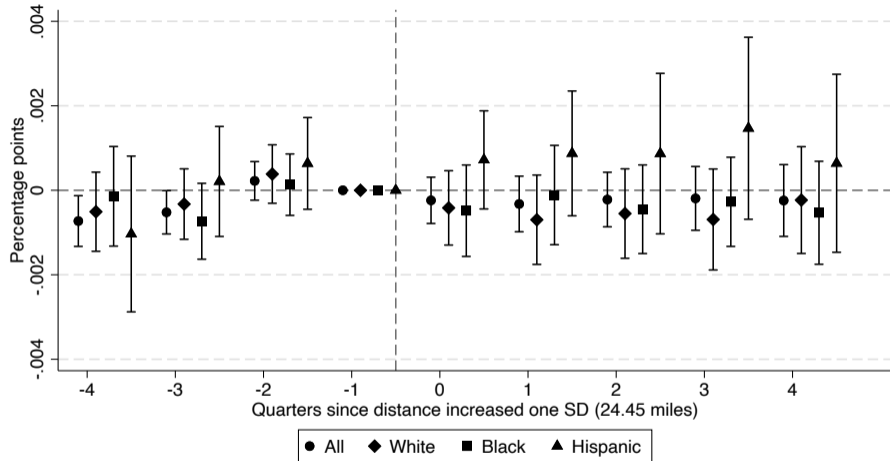


Outcome means: All = 0.1118, White = 0.1632, Black = 0.0927, Hispanic = 0.0789

Coefficient magnitudes: All, t=4: -0.0006*; White, t=4: -0.0008*

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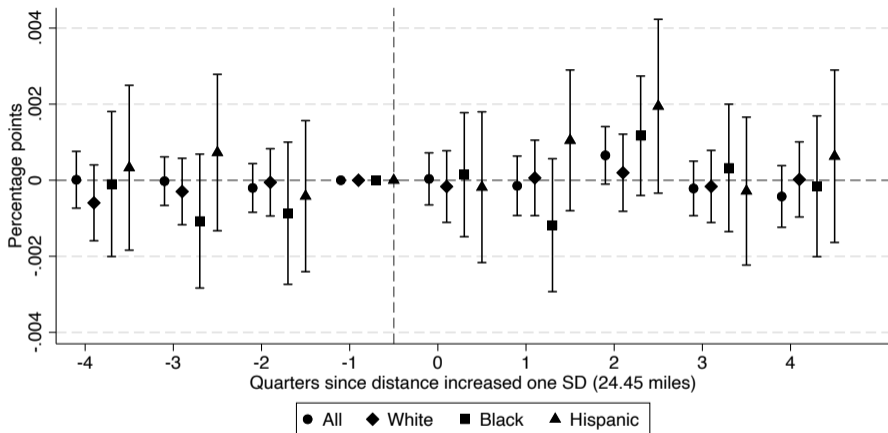
Any Mental Health-related Prescription



Outcome means: All = 0.0746, White = 0.1351, Black = 0.0467, Hispanic = 0.0423

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Any ED Visit

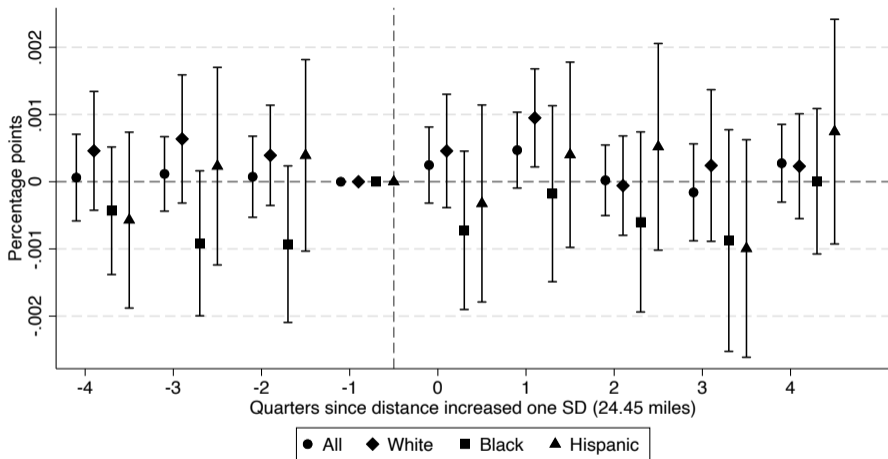


Outcome means: All = 0.1127, White = 0.1274, Black = 0.1415, Hispanic = 0.0912

Coefficient magnitudes: All, t=2: 0.0007*; Hispanic, t=2: 0.0019*

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Any Pain Medication Prescription



Outcome means: All = 0.0434, White = 0.0566, Black = 0.0407, Hispanic = 0.0344

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