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Association of Texas' 2021 Ban on Abortion in Early Pregnancy With the Number of Facility-Based Abortions in Texas and Surrounding States

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IMPORTANCE Texas' 2021 ban on abortion in early pregnancy may demonstrate how patterns of abortion might change following the US Supreme Court's June 2022 decision overturning *Roe v Wade*.

OBJECTIVE To assess changes in the number of abortions and changes in the percentage of out-of-state abortions among Texas residents performed at 12 or more weeks of gestation in the first 6 months following implementation of Texas Senate Bill 8 (SB 8), which prohibited abortions after detection of embryonic cardiac activity.

DESIGN, SETTING, AND PARTICIPANTS Retrospective study of a sample of 50 Texas and out-of-state abortion facilities using an interrupted time series analysis to assess changes in the number of abortions, and Poisson regression to assess changes in abortions at 12 or more weeks of gestation. Data included 68 820 Texas facility-based abortions and 11 287 out-of-state abortions among Texas residents during the study period from September 1, 2020, to February 28, 2022.

EXPOSURES Abortion care obtained after (September 2021–February 2022) vs before (September 2020–August 2021) implementation of SB 8.

MAIN OUTCOMES AND MEASURES Primary outcomes were changes in the number of facility-based abortions for Texas residents, in Texas and out of state, in the month after implementation of SB 8 compared with the month before. The secondary outcome was the change in the percentage of out-of-state abortions among Texas residents obtained at 12 or more weeks of gestation during the 6-month period after the law's implementation.

RESULTS Between September 2020 and August 2021, there were 55 018 abortions in Texas and 2547 out-of-state abortions among Texas residents. During the 6 months after SB 8, there were 13 802 abortions in Texas and 8740 out-of-state abortions among Texas residents. Compared with the month before implementation of SB 8, the number of Texas facility-based abortions significantly decreased from 5451 to 2169 (difference, -3282 [95% CI, -3171 to -3396]; incidence rate ratio [IRR], 0.43 [95% CI, 0.36-0.51]) in the month after SB 8 was implemented. The number of out-of-state abortions among Texas residents significantly increased from 222 to 1332 (difference, 1110 [95% CI, 1047-1177]; IRR, 5.38 [95% CI, 4.19-6.91]). Overall, the total documented number of Texas facility-based and out-of-state abortions among Texas residents significantly decreased from 5673 to 3501 (absolute change, -2172 [95% CI, -2083 to -2265]; IRR, 0.67 [95% CI, 0.56-0.79]) in the first month after SB 8 was implemented compared with the previous month. Out-of-state abortions among Texas residents obtained at 12 or more weeks of gestation increased from 17.1% (221/1291) to 31.0% (399/1289) (difference, 178 [95% CI, 153-206]) during the period between September 2021 and February 2022 (*P* < .001 for trend).

CONCLUSIONS AND RELEVANCE Among a sample of abortion facilities, the 2021 Texas law banning abortion in early pregnancy (SB 8) was significantly associated with a decrease in the documented total of facility-based abortions in Texas and obtained by Texas residents in surrounding states in the first month after implementation compared with the previous month. Over the 6 months following SB 8 implementation, the percentage of out-of-state abortions among Texas residents obtained at 12 or more weeks of gestation significantly increased.

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Corresponding Author: Kari White, PhD, MPH, Steve Hicks School of Social Work, University of Texas at Austin, 1925 San Jacinto Blvd, Stop D3500, Austin, TX 78712 (kariwhite@utexas.edu). n September 1, 2021, Texas Senate Bill 8 (SB 8) went into effect. The law prohibited abortion on detection of embryonic cardiac activity, which can occur as early as 5 to 6 weeks after the start of a person's last menstrual period, and only allowed exemptions for medical emergencies. Before SB 8, abortion care in Texas could be provided at up to 22 weeks of gestation for any indication. SB 8 was the most restrictive state-level abortion law in the US, before the US Supreme Court overturned *Roe v Wade* in June 2022, allowing Texas to enforce a law prohibiting nearly all abortions. ^{2,3}

In the first month following implementation of SB 8, the number of abortions in Texas decreased by 50%, compared with September 2020, and many pregnant Texas residents traveled out of state for abortion care. 4,5 The overall availability of abortion care in neighboring states was limited: Arkansas, Louisiana, New Mexico, and Oklahoma, combined, had fewer facilities providing medication and procedural abortions, compared with Texas, and had approximately 40% of Texas' annual abortion volume. 6 Out-of-state facilities were challenged to absorb a sudden surge of patients, which might have contributed to long waits for appointments and pregnant Texas residents obtaining abortions later in pregnancy. Procedures for abortion after 12 weeks of gestation often require multiple visits and result in higher costs for patients.⁷ Although uncommon, there is a higher risk of abortion-related complications later in pregnancy.8 Difficulties arranging long-distance travel may have also contributed to pregnant individuals self-managing their abortion or continuing unwanted pregnancies.

The primary objective of this analysis was to assess changes in the total documented number of facility-based procedural and medication abortions obtained by Texas residents during the first 6 months after implementation of SB 8 compared with the period before the law's implementation. Changes in the proportion of out-of-state abortions among Texas residents performed at 12 or more weeks of gestation after implementation of SB 8 were also assessed.

Methods

Data Sources

The University of Texas at Austin institutional review board approved the study and waived informed consent. As part of an ongoing, multicomponent study to rapidly evaluate policy changes in Texas, 18 of Texas' 23 abortion facilities directly reported aggregate data each month to the research team during the study period, September 2020 to February 2022. When compared with 2020 state vital statistics data, these facilities provided 95% of abortions in Texas. Facilities reported the type (medication or procedural) and number of abortions provided at fewer than 12 weeks, 12 to 14 weeks, 15 to 17 weeks, and 18 to 22 weeks of gestation. These gestational duration categories were used to reflect clinically meaningful differences in procedure type and cervical preparation used, which can increase the number of visits for patients to complete their abortion and visit

Key Points

Question Was the September 2021 implementation of a Texas law prohibiting abortion after detectable embryonic cardiac activity associated with changes in Texas residents' use of in-state and out-of-state facility-based abortion care?

Findings In this interrupted time series analysis of 80 107 abortions obtained between September 2020 and February 2022, Texas' law was significantly associated with a decrease in Texas facility-based abortions (incidence rate ratio [IRR], 0.43), an increase in Texas residents obtaining out-of-state abortions (IRR, 5.38), and a decrease in total in-state and out-of-state abortions (IRR, 0.67) in September 2021 compared with August 2021.

Meaning A Texas law banning abortion in early pregnancy was associated with a decrease in total facility-based abortions among Texas residents.

duration.^{10,11} State of residence was not collected; however, 98% of abortions provided in Texas were to Texas residents before SB 8 went into effect.¹²

Prior to implementation of SB 8, the research team also sought to obtain data on Texas resident abortions provided at a sample of out-of-state facilities in Arkansas, Colorado, Kansas, Louisiana, New Mexico, and Oklahoma, where Texas residents were most likely to obtain abortion care. 9,13 For some Texas residents, abortion facilities in Louisiana, New Mexico, and Oklahoma were already the closest locations for care (Figure 1). Of the 42 facilities in these states, the study team contacted the 35 they had involved in previous studies; the remaining 7 facilities were not contacted because they served more geographically remote locations or had not responded to previous data requests. Overall, 32 facilities prospectively provided data on Texas residents who obtained abortions on August 1, 2021, or after: 29 provided deidentified individual-level data, including patient age, zip code, and gestational duration at abortion, obtained from Induced Termination of Pregnancy forms, electronic health records, or other practice management systems, and 3 smaller-volume sites self-reported monthly totals only. Anomalous or large amounts of missing data were verified with clinics, when possible; other audits of medical records were not conducted.

Because of the rapid implementation of SB 8 and other demands on staff, not all facilities could provide monthly totals of Texas residents seen during the period from September 1, 2020, to July 31, 2021, and therefore these data were obtained from other sources (eTable 1 in the Supplement). Data were reported by all abortion facilities in Arkansas, by 4 of 5 facilities in New Mexico, and by health departments in Colorado, Louisiana, and Oklahoma, which included data on the majority of abortions in those states. Monthly totals for Kansas were estimated from data previously collected directly from Kansas facilities and annual totals reported by the state health department in 2020 and 2021 (eMethods 1 in the Supplement).

Ongoing data collection also included mystery client calls to abortion facilities to determine the time to the next

available appointment; longer wait times indicate more limited facility capacity to meet patient demand and have been associated with a greater likelihood of people obtaining abortions at 12 or more weeks of gestation.14 Because demand for out-of-state care was expected to increase following implementation of SB 8, starting in September 2021, research assistants contacted 19 out-of-state facilities to obtain the number of days until the next available statedirected counseling visit (Arkansas, Louisiana) or abortion appointment (Kansas, New Mexico, Oklahoma). Because of limited research staff capacity, appointment wait-time information was not collected from Colorado facilities. At the beginning of each month and during regular business hours over the study period, callers used a standardized script in which they presented as Texas residents seeking care at approximately 6 weeks of pregnancy. Information on wait times was recorded on a standardized form. A wait time of 28 days was entered when facilities indicated that they were not scheduling new appointments that calendar month. To account for variation in wait time during a month, a moving average of out-of-state wait times was computed using the mean wait time for service regions within each state that reflected the geographic clustering of facilities; data for all 3 Louisiana facilities were combined into a single average given the small number of facilities and patient reports of contacting all facilities when seeking abortion in that state.⁵ A moving average was calculated using 3 months of call data that included 1 month on either side of the index month (eFigure in the Supplement).

Outcomes

Primary study outcomes were change in the number of Texas facility-based, out-of-state, and total documented abortions for Texas residents after implementation of SB 8. Total documented abortions were defined as the sum of Texas facility-based and out-of-state abortions for Texas residents. The secondary study outcome was the change in the percentage of out-of-state abortions among Texas residents that were provided at 12 or more weeks of gestation.

Statistical Analysis

The distribution of documented abortions, by state of occurrence, was examined over the 18-month study period. Negative binomial models were used to estimate each of the 3 primary outcomes, using an interrupted time series design that adjusted for linear time trends (ie, time since policy implementation; eMethods 2 in the Supplement). Models did not account for differences in data source or missingness (eMethods 1 in the Supplement).

Changes in the gestational duration at which Texas residents obtained abortion care were first assessed by comparing matched 6-month periods before (September 2020 through February 2021) and after implementation of SB 8 (September 2021 through February 2022), which would account for any seasonal variation in gestational duration at abortion. The pre-SB 8 sample was limited to abortions that occurred in Texas, owing to incomplete gestational duration data for out-of-state abortions among Texas residents; abor-

Figure 1. Location of Abortion Facilities in Texas and Surrounding States After Implementation of Texas Senate Bill 8, September 2021– February 2022

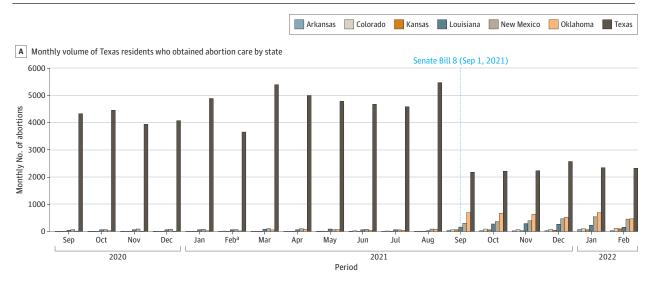


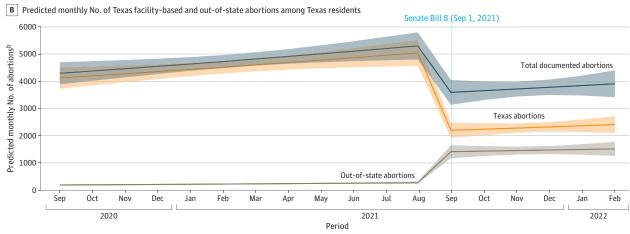
The squares represent facilities where abortions were only available before detection of embryonic cardiac activity; the circles represent facilities where abortions at later gestational durations were provided. The number within the squares and circles indicates the total number of abortion facilities in locations in which there is more than 1 facility. States in dark yellow imposed mandatory waiting periods of 24 to 72 hours for people seeking abortion; states in beige did not require a waiting period before abortion.

tions in Texas accounted for 96% of documented facility-based abortions among Texas residents during this period. The post-SB 8 sample included in-state and out-of-state abortions among Texas residents for which individual-level data were available (97% of documented abortions for the period). Differences in the overall distribution of gestational duration at abortion were assessed using χ^2 tests.

Among Texas residents who obtained out-of-state abortions, change in the monthly proportion of patients who obtained an abortion at 6 or fewer weeks of gestation and 12 or more weeks of gestation between September 2021 and February 2022 was assessed using Poisson regression with a linear time trend. To assess the hypothesis that a greater number of days until the next available appointment was associated with having an abortion at 12 or more weeks of gestation, a separate, multivariable-adjusted Poisson model was estimated using individual-patient data. To capture clinically meaningful changes and facilitate interpretation of model coefficients, a 5-day increase in wait time, reflecting a change of 1 SD, was used as the unit of time in the regression model. Prevalence ratios from Poisson models with common outcomes can be interpreted similar to relative risks. The model also controlled for potential confounders. In addition to patient age, the model included indicator variables for the state policy environment: required in-person, state-directed counseling visit and waiting period (Arkansas, Louisiana);

Figure 2. Actual and Predicted Monthly Number of Facility-Based Abortions in Texas and Texas Resident Out-of-State Abortions Before and After Implementation of Texas Senate Bill 8, September 2020–February 2022





^a In February 2021, there was a winter storm that caused power outages across Texas that disrupted abortion care at in-state abortion facilities.

negative binomial regression models that adjusted for the month Texas Senate Bill 8 was implemented and linear time trends before and after the law's implementation, respectively. The shaded regions represent 95% Cls.

state-mandated waiting period without an in-person counseling visit requirement (Kansas, Oklahoma); and no state-required waiting period or gestational duration limit (New Mexico). An indicator of Texas residents' zip code level of economic distress¹⁷ was also included because people with more limited financial resources might experience delays from difficulties raising funds to cover travel and abortion costs. Regression analysis was limited to the 5 states for which wait-time data were available, and observations missing patient age or zip code were excluded.

Stata version 15 (StataCorp) was used for analyses. All significance testing was 2-sided and a 95% CI not including the null was used to define statistical significance. Because of the potential for type I error due to multiple comparisons, findings for the analyses should be interpreted as exploratory.

Results

Change in Documented Abortions, September 2020 to February 2022

There were 55 018 abortions provided at Texas facilities and 2547 abortions provided out of state for Texas residents from September 2020 through August 2021, before SB 8 went into effect (Figure 2). During the 6-month period after implementation of SB 8, there were 13 802 abortions in Texas and 8740 out-of-state abortions among Texas residents. Following implementation of SB 8, 42% of out-of-state abortions among Texas residents occurred in Oklahoma and 29% occurred in New Mexico compared with 19% and 43%, respectively, before SB 8.

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^b Predicted monthly abortion volume for reporting facilities was estimated from

The number of Texas facility-based abortions significantly decreased from 5451 to 2169 (absolute change, -3282 [95% CI, -3171 to -3396]; incidence rate ratio [IRR], 0.43 [95% CI, 0.36-0.51]) in the first month after implementation of SB 8 (September 2021) compared with August 2021 (eTable 2 in the Supplement). For the same period, the number of out-of-state abortions among Texas residents significantly increased from 222 to 1332 (absolute change, 1110 [95% CI, 1047-1177]; IRR, 5.38 [95% CI, 4.19-6.91]). Overall, the total documented number of Texas facility-based and out-of-state abortions among Texas residents significantly decreased from 5673 to 3501 (absolute change, -2172 [95% CI, -2083 to -2265]; IRR, 0.67 [95% CI, 0.56-0.79]) in the first month after SB 8 was implemented compared with the previous month. The overall monthly trends for in-state, out-of-state, and total documented abortions among Texas residents in the post-SB 8 period (September 2021 through February 2022) were not significantly different from the monthly trends in the period before the law took effect (September 2020 through August 2021) (eTable 2 in the Supplement).

Change in Abortions at 12 or More Weeks of Gestation, September 2020 to February 2021 and September 2021 to February 2022

Overall, there were 517 fewer abortions (95% CI, 473-563) at 12 or more weeks of gestation during the 6 months after implementation of SB 8 compared with the matched 6-month period before the law was in effect; abortions at 12 or more weeks of gestation accounted for 9.6% (2128/22129) and 10.7% (2699/25 237) of all abortions after vs before SB 8, respectively (*P* < .001; **Table**). Abortions at 12 or more weeks of gestation accounted for 25.6% (2128/8327) of all out-ofstate abortions during the 6-month period after SB 8, and represented a larger percentage of abortions over time, increasing from 17.1% (221/1291) in September 2021 to 31.0% (399/1289) in February 2022 (P < .001 for trend; Figure 3). Out-of-state abortions at 6 or fewer weeks of gestation significantly decreased from 20.5% (265/1291) in September 2021 to 6.6% (85/1289) in February 2022 (P < .001 for trend).

In the multivariable-adjusted regression model of Texas residents obtaining abortions at out-of-state facilities for which wait-time data were available (n = 6657; 750 excluded due to missing age or zip code), each 5-day increase in the time until the next available appointment was associated with a significantly increased risk of having an abortion at 12 or more weeks of gestation (prevalence ratio, 1.15 [95% CI, 1.08-1.23]; eTable 3 in the Supplement).

Discussion

Implementation of Texas' 2021 law banning abortion in early pregnancy was associated with a significant decrease in the documented total number of facility-based abortions that were either provided in Texas or obtained by Texas residents in surrounding states in the first month after implementation

Table. Distribution of Abortions Before and After Texas Senate Bill 8 (SB 8) in Texas and Among Texas Residents Obtaining Out-of-State Abortions, by Gestational Duration Interval

	SB 8, No. (%)	
Gestational duration interval	Before (Sep 2020- Feb 2021)	After (Sep 2021- Feb 2022)
Total abortions ^{a,b}		
<11 wk 6 d	22 538 (89.3)	20 001 (90.4)
≥12 wk	2699 (10.7)	2128 (9.6)
Texas abortions		
<11 wk 6 d ^c	22 538 (89.3)	13 802 (100)
12 wk to 14 wk 6 d	1535 (6.1)	0
15 wk to 17 wk 6 d	752 (3.0)	0
18 wk to 21 wk 6 d	412 (1.6)	0
Total	25 237 (100)	13 802 (100)
Out-of-state abortions ^d		
<11 wk 6 d	NA	6199 (74.4)
12 wk to 14 wk 6 d	NA	1097 (13.2)
15 wk to 17 wk 6 d	NA	625 (7.5)
18 wk to 21 wk 6 d	NA	293 (3.5)
≥22 wk	NA	113 (1.4)
Total	NA	8327 (100)

Abbreviation: NA. not available.

compared with the previous month. The changes in abortion were most pronounced the first month SB 8 went into effect, as evidenced by the fact that there was no significant change in the overall monthly trend in abortions during the post-SB 8 period compared with the trend before the law took effect.

This analysis demonstrates the extent of disruption in abortion access associated with bans on abortion in all but the earliest stages of pregnancy, especially as many people do not identify their pregnancy until after 6 weeks from their last menstrual period. 19-21 Although thousands of Texas residents were able to obtain abortions in another state-and overcame numerous emotional, logistic, and financial hardships to do so⁵—out-of-state abortions did not fully offset the overall decrease in facility-based abortions in the post-SB 8 period. This decrease in facility-based abortion care suggests that many Texas residents continued their pregnancies, traveled beyond a neighboring state, or self-managed their abortion. Moreover, the decrease that occurred following SB 8-when Texas residents could obtain care in all neighboring statesmight be even greater now that Texas and many surrounding states have banned abortions.²²

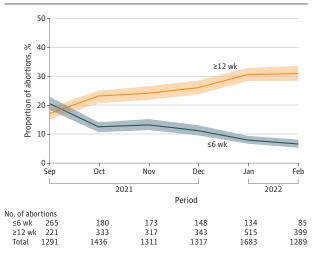
^a Total abortions before SB 8 only included Texas abortions, which accounted for 96% of all documented facility-based abortions during the period, owing to incomplete information on gestational duration for out-of-state abortions among Texas residents. After SB 8, total abortions included abortions obtained at facilities in Texas, as well as out-of-state facilities in Arkansas, Colorado, Kansas, Louisiana, New Mexico, and Oklahoma.

 $^{^{}b}\chi^{2}$ *P* value less than .001, comparing gestational duration at abortion before and after implementation of SB 8.

^c After implementation of SB 8, abortions could only be provided in Texas if there was no detectable embryonic cardiac activity (approximately 6 weeks of gestation) or in the case of a medical emergency.

^d Out-of-state abortions included data from Arkansas, Colorado, Kansas, Louisiana, New Mexico, and Oklahoma.

Figure 3. Percentage and Number of Abortions at 6 or Fewer Weeks and 12 or More Weeks of Gestation Among Texas Residents Obtaining Out-of-State Care After Implementation of Texas Senate Bill 8, September 2021-February 2022



There was a statistically significant decrease in abortions at 6 or fewer weeks of gestation and a statistically significant increase in abortions at 12 or more weeks of gestation, between September 2021 and February 2022; P < .001 for monthly trends. The shaded regions represent 95% Cls.

Additionally, 25% of abortions at out-of-state facilities for Texas residents occurred at 12 or more weeks of gestation in the post-SB 8 period, which is greater than the share (13%) observed in national samples.²⁰ This difference is related to several factors. Abortions in very early pregnancy remained available at Texas-based facilities, and many Texas residents at 12 or fewer weeks of gestation selfmanaged their abortion using abortion pills that can be purchased online,23 and thus Texas residents seeking out-ofstate care were likely already later in pregnancy. Moreover, increased patient demand that strained out-of-state facility capacity likely also increased appointment wait times, leading more Texas residents to obtain care at 12 or more weeks of gestation over the study period, a result that is consistent with other studies.14 Although complications following abortions at 12 or more weeks of gestation are rare, the risk of complications and time required for care increase with gestational duration.8 In particular, abortions at 14 or more weeks of gestation can require longer visits and those at 18 or more weeks often require more than 1 visit. Extended or multiple visits for more complex care might limit the number of patients that facilities can accommodate, likely leading to even longer wait times. Procedures later in pregnancy are also more expensive and are offered at fewer facilities, 24 which will further increase patients' logistical and financial hardships.^{5,7}

These findings indicate how patterns of abortion care might change following the US Supreme Court's decision overturning *Roe v Wade*. In the first 100 days following the decision, 66 abortion facilities across 15 states stopped providing abortion care due to new state-level restrictions, ²⁵ and the number of abortions is expected to drop precipitously. ^{22,26}

In states where abortion care remains legal, facilities will likely experience surges in patient demand and increases in people who need abortions later in pregnancy after waiting weeks for an appointment and experiencing delays related to arranging travel and securing funding. These facilities might also experience an influx of out-of-state patients with pregnancy complications who require a higher level of care, because clinicians' differing interpretations of the narrow exemptions allowed under these bans might prevent patients from accessing evidence-based abortion care in their home state.²⁷

However, the circumstances in Texas during the first 6 months after implementation of SB 8 were markedly different than what is rapidly unfolding nationally. Many pregnant people in southern and midwestern states no longer have the option to travel to a neighboring state because these states have also banned or sharply limited abortion. ²⁶ Additionally, the funding that enabled many Texas residents to obtain in-state and out-of-state care might no longer be widely available because existing abortion restrictions have recently been interpreted to criminalize organizations that provide financial assistance to those seeking abortion. ^{28,29} These differences in the policy and service environments could further limit the number of people who are ultimately able to obtain abortions in other states.

Limitations

This study has several limitations. First, data were not obtained from all facilities in the 7 states included in the study, and after SB 8, some Texas residents obtained abortions in states further away.³⁰

Second, this study does not include information on the number of Texas residents who self-managed their abortion by obtaining abortion medications online, ²³ from Mexico, ³¹ or from other sources. Therefore, the overall decrease in abortion during the first 6 months might be less than what is reported here.

Third, because of the sudden, significant changes in facility-based care during this period, it was difficult for clinic staff in Texas and other states to collect patient characteristics beyond what is included in their usual reporting. Consequently, it was not possible to assess disparities related to patient demographics (eg, race and ethnicity) or obtain complete information on gestational duration at abortion prior to SB 8 to compare secular trends. Data used for this analysis are largely aggregate in nature in both periods, with facilities in Texas reporting only monthly totals during the entire study period and most data on outof-state abortions among Texas residents during the pre-SB 8 period also aggregate in nature. Limited individual-level data precluded presentation of cohort demographics and clinical characteristics.

Fourth, appointment wait-time data were not collected from all facilities, and Texas residents who obtained care at facilities without wait-time data were excluded from the analysis of abortions at 12 or more weeks of gestation. However, the results included the majority of abortions, because approximately 11% of Texas resident abortions were provided

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at facilities that were excluded from the analysis during the study period.

Fifth, this study only examined trends during the first 6 months that SB 8 was in effect. Abortion trends and the distribution of gestational duration at the time of abortion likely changed in subsequent months following implementation of a total ban on abortion in Oklahoma in April 2022 and suspension of all abortion care in Texas and Arkansas immediately after the US Supreme Court's decision in late June 2022. Of the out-of-state facilities included in this analysis, only those in Colorado, Kansas, and New Mexico still currently provide abortion care.

Conclusions

Among a sample of abortion facilities, the 2021 Texas law banning abortion in early pregnancy (SB 8) was significantly associated with a decrease in the documented total of facilitybased abortions in Texas and obtained by Texas residents in surrounding states in the first month after implementation compared with the previous month. Over the 6 months following SB 8 implementation, the proportion of out-of-state abortions among Texas residents obtained at 12 or more weeks of gestation significantly increased.

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Concept and design: White, Sierra, Beasley, Ogburn, Potter, Dickman.

Acquisition, analysis, or interpretation of data: Sierra, Lerma, Hofler, Tocce, Goyal, Ogburn, Potter, Dickman.

Drafting of the manuscript: White, Sierra, Hofler, Potter.

Critical revision of the manuscript for important intellectual content: Sierra, Lerma, Beasley, Hofler, Tocce, Goyal, Ogburn, Potter, Dickman. Statistical analysis: Sierra.

Obtained funding: White. Administrative, technical, or material support: Lerma, Beasley, Hofler, Tocce, Goyal, Dickman.

Supervision: White, Lerma, Hofler.

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