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### Authors

Ralph, Lauren J  
King, Erin  
Belusa, Elise  
[et al.](#)

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Original article

## The Impact of a Parental Notification Requirement on Illinois Minors' Access to and Decision-Making Around Abortion

Lauren J. Ralph, Ph.D. <sup>a,\*</sup>, Erin King, M.D. <sup>b</sup>, Elise Belusa, M.Sc. <sup>a</sup>, Diana Greene Foster, Ph.D. <sup>a</sup>,  
 Claire D. Brindis, Dr.P.H. <sup>c</sup>, and M. Antonia Biggs, Ph.D. <sup>a</sup>

<sup>a</sup> *Advancing New Standards in Reproductive Health (ANSIRH), Department of Obstetrics, Gynecology and Reproductive Sciences, University of California, San Francisco, Oakland, California*

<sup>b</sup> *Hope Clinic for Women, Ltd, Granite City, Illinois*

<sup>c</sup> *Philip R. Lee Institute for Health Policy Studies, Bixby Center for Global Reproductive Health, University of California, San Francisco, San Francisco, California*

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### ABSTRACT

**Purpose:** This study aims to examine the impact of a parental notification (PN) requirement on the frequency, timing, and out-of-state travel of minors seeking abortion, as well as changes in who minors involve in their decision, support received, and decision certainty.

**Methods:** We analyzed administrative and medical records of 1,577 women obtaining an abortion before and after implementation of a PN requirement at one Illinois facility. Using multivariate regression within a difference-in-differences framework, we quantified changes in the number and timing of women seeking care, frequency of parental awareness and support, travel from out-of-state, decision certainty, and anticipated coping among minors 17 years and below compared with young adults (YAs) aged 18–20 years.

**Results:** A smaller proportion of abortions to women ages 20 years and under post-law were among minors (39%–33%,  $p = .017$ ). Compared with YAs, minors experienced a larger increase in parental awareness (71%–93% [minors] vs. 53%–58% [YAs],  $p < .000$ ); however, parents' support for the decision was unchanged. The proportion of minors certain of their decision went from 77% pre-law to 71% post-law ( $p = .099$ ) compared with 82% pre- and post-law among YAs ( $p = .798$ ). Compared with YAs, a larger proportion of minors obtained second trimester care post-law if coming from another state (21%–31% [minors] vs. 23%–16% [YAs],  $p = .022$ ).

**Conclusions:** Illinois' PN requirement was associated with a decrease in the number of abortions among minors, delayed care for those from out-of-state, increased parental awareness of the pregnancy, and no change in parents' support.

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### IMPLICATIONS AND CONTRIBUTION

This study found no evidence that increased involvement of parents after enforcement of a PN requirement resulted in increased parental support among minors. Instead, results showed a decline in minors accessing abortion, evidence that some minors were less certain of their decision, and delays in care among minors traveling from other states.

**Conflicts of Interest:** The authors have no conflicts of interest to disclose.

\* Address correspondence to: Lauren J. Ralph, Ph.D., Advancing New Standards in Reproductive Health (ANSIRH), Department of Obstetrics, Gynecology and Reproductive Sciences, University of California, San Francisco, 1330 Broadway, Suite 1100, Oakland, CA 94612.

E-mail address: [Lauren.Ralph@ucsf.edu](mailto:Lauren.Ralph@ucsf.edu) (L.J. Ralph).

The majority of states in the U.S. require parental involvement (PI) in a minors' decision to have an abortion [1]. Previous research on these requirements has largely focused on their impact on the frequency and timing of abortion seeking among minors, and indicates that although these laws are associated with a reduction in in-state abortions [2–8], some minors will travel to a neighboring state where involvement is not required [3,4,6,7]. In addition, this research demonstrates that PI requirements are

associated with increased delays in timing of abortion among minors [4,9–11].

On August 15, 2013, Illinois became the 38th state, and final state in the Midwest, to enforce a PI requirement. Illinois' law requires abortion providers to notify at least one adult family member, defined as a parent, grandparent, legal guardian, or step-parent who lives with the minor, 48 hours in advance of obtaining an abortion, or that this family member is present on the day of the procedure [12]. With enforcement of the Illinois law, minors in the Midwest now have to travel as far as New York or New Mexico to find a state without a PI requirement. Therefore, we might observe a more pronounced effect of the law on the number of minors obtaining care, delays in when they seek care, or utilization of alternatives to involvement such as judicial bypass, in Illinois compared with settings outside the Midwest.

Other key questions related to the impact of PI requirements remain unanswered. Although PI laws are often motivated by the argument that young women will universally benefit from the involvement of a parent in her abortion decision [13,14], we have no evidence on how these laws influence a parent's role in minor's decision-making. In the absence of a mandate, one-third of minors choose not to inform a parent of her decision to have an abortion [15,16]; minors' most common reasons for not involving a parent include wanting to preserve their relationship, not hurt or disappoint their parents, feeling like they have adequate support from other sources, and wanting to maintain autonomy in decision-making [9,15,17]. Smaller proportions choose not to involve parents due to concerns about abuse, being kicked out of the house, or exacerbating existing family difficulties [15]. Minors may suffer negative repercussions from mandated involvement, for example, increased conflict or negative emotions [9], particularly if the parent involved does not support their decision or they no longer feel that they have been able to make an autonomous decision [18,19].

In the present study, we use clinic record data from one abortion facility in southern Illinois to examine the impact of the state's parental notification (PN) requirement on the frequency, timing, and out-of-state travel of minors seeking abortion, in a setting where travel to avoid PI is now extremely difficult. Expanding on previous research, we also describe the law's impact on changes in the individuals aware of their pregnancy, these individuals' support for and influence on their decision, and minors' certainty and anticipated coping with the abortion decision.

## Methods

### Study design

We conducted a retrospective medical record review of women ages 20 years and below obtaining abortions between June 1, 2012 and August 14, 2015. Illinois' PN requirement went into effect on August 15, 2013; this date delineates our *pre-* and *post-law* periods.

### Setting

Data were obtained from one private abortion facility in southern Illinois, one of the few clinics in the area offering second trimester care.

### Data sources

This study relied on data from the clinic's administrative database, which is maintained for state-mandated reporting requirements, and a review of women's medical records, which include a Needs Assessment Form (NAF) and a Parental Notification Form, in addition to standard medical history and procedure notes. The NAF is completed by women on their own before pre-abortion counseling [20]. The form elicits information about women's decision-making process and has been used in previous research [16,21,22]. The Parental Notification Form is completed by clinic staff to document how the PN requirement was satisfied.

Between September 2015 and February 2016, trained staff abstracted data exactly as they appeared in the record into an encrypted and Health Insurance Portability and Accountability Act-compliant electronic platform. Women who sought multiple abortions over the study period had data abstracted for each abortion. Our unit of analysis was abortions, not women.

### Eligibility

All women aged 20 years and below who received abortion care over the study period were eligible for inclusion.

### Measures

**Outcomes.** The *number* and *gestational age* (in weeks), as measured via clinic ultrasound, of abortions were obtained from the administrative database. A dichotomous gestational variable was created to identify second trimester abortions ( $\geq 13$  weeks). *Out-of-state travel* was based on self-reported state of residence in the administrative database and was collapsed into a binary in-state/out-of-state variable. *Awareness of pregnancy and perceived support* was obtained from the NAF, which includes a checklist to identify individuals whom women told about their pregnancy. Options included "my mom," "my dad," boyfriend, husband, "the father," friend, "my sister," and space for open-ended responses. For each selected individual, a second question asked if this person was "supportive to you in what you want to do." Individuals were coded as not supportive if the respondent selected "No" or "Not much." *Decision certainty* was based on a question on the NAF that asked women, "Considering your situation, how SURE are you about your decision to have an abortion?" Respondents could select one of the following: not at all sure, less than 50% sure, only 50% sure, 75%–90% sure, and 90%–100% sure, and were classified as very sure if they selected 90%–100% sure. Women were classified as feeling *forced* into the decision if they responded "True" or "Kind of" to the following statement on the NAF: "Someone else is forcing me to have the abortion against my will." Those who acknowledged feeling forced could identify the source(s) from a list, including mother, father, aunt, grandmother, boyfriend, husband, partner in the pregnancy, "everybody," or an open-ended space to write in others. Women's *anticipated coping* was generated from their response to the question, "How do you think you'll deal with the feelings you may have after the abortion?" on the NAF. Similar to our previous work [16,21], women who selected "It will probably be VERY hard for me afterwards" and "I'll wish I never went through with the abortion, but had the baby instead" were classified as anticipating poor coping. *Method of satisfying the PN requirement* among minors seeking care after the PN requirement took effect

was abstracted from the Parental Notification Form. Options included in person, over the phone, by certified letter (when repeated phone contact attempts are unsuccessful), written waiver, or by a referring physician. Circumstances where involvement was not required, such as when a minor was emancipated, was experiencing neglect or abuse at home, or obtained a judicial bypass, could also be noted. We also abstracted the type of adult family member notified (parent, grandparent, step-parent living in the home, or legal guardian) from this form.

**Exposure to the PN requirement.** Young women are subject to the Illinois PN requirement if they are aged 17 years or below at the time they receive abortion care. However, previous research has documented that minors who are close to age 18 years may delay care until after their 18th birthday to avoid the PI requirement; thus, using a woman's age at the time she had an abortion will underestimate the effect of these laws on the frequency and timing of abortion [10,11]. Consistent with this research, we defined exposure to the law using a woman's age when she discovered she was pregnant, which was calculated by subtracting weeks' gestation (minus 4 weeks), assessed via clinic ultrasound, from their age on the day that they had an abortion, defined next. However, when describing which method of notification was used and the type adult family member involved to satisfy the PN requirement, we use their age at time of abortion, as only women who were 17 years or younger at the time they received care would have a completed Parental Notification Form in their record.

**Demographic and other covariates.** Age was calculated by subtracting a woman's date of birth from the date of service in the administrative database. Self-reported race and ethnicity, history of a previous abortion, parity, exposure to emotional or physical abuse at home, and history of depression or anxiety were abstracted from the medical record. Women who selected "Yes" or "Kind of" in response to the following question on the NAF were classified as endorsing negative attitudes toward abortion: "At my stage of pregnancy, I think it's the same as taking the life of a child after it's already born."

#### Statistical analyses

We first compared changes in outcomes between the pre- and post-period separately among minors and young adults using cluster-adjusted  $\chi^2$  tests (for number of abortions) or mixed effects linear and logistic regression models (for all other outcomes). When presenting changes in the number of abortions, we limited our analysis to the 1 year pre- and 1 year post-law for comparability (August 14, 2012 to August 15, 2014).

To ensure that any change observed among minors was due to the law, and not a trend influencing young women overall, we then contrasted changes in outcomes among minors ( $\leq 17$  years) to changes in outcomes among young adult women ages 18–20 years using a linear or logistic regression model within a difference-in-differences (DID) framework. Our primary parameter of interest in these models was an interaction term between being a minor and being in the post-law period. All models were estimated with robust standard errors to adjust for clustering of observations by woman, as some women had multiple abortions over the study period. Models were also adjusted for hypothesized confounders of the relationship between PI laws and our outcomes of interest, including age, race/ethnicity, history of a previous abortion, exposure to emotional or physical abuse

at home, history of depression/anxiety, and attitude toward abortion.

The validity of the DID approach rests on the assumption that trends in the outcome are similar among minors and young adult women before implementation of the law [23]. Thus, we assessed whether the slopes for minors and young adults were comparable using significance on an interaction term between time (in 3-month increments) and being a minor (vs. young adult) in the pre-law period (June 1, 2012 to August 14, 2013). The *p*-value on this interaction term was nonsignificant ( $>.05$ ) for all outcomes (not shown); thus, the DID approach was deemed appropriate.

The UCSF Institutional Review Board granted ethical approval for the study.

#### Results

A total of 1,577 abortions among 1,392 women ages 20 years and below occurred between June 2012 and August 2015. Abstractions were completed for the vast majority of records from this time period ( $n = 1,556$  abortions, 98%). Minors represented one-third (34%) of abortions in our sample, and 7% of total abortions at the clinic during the study period (not shown).

Women receiving abortions largely identified as either non-Hispanic white (48%) or African-American (38%). Just over one-half (53%) of abortions were among Illinois residents, followed by 42% among Missouri residents. Just over one-quarter (28%) of women reported having had a previous abortion. The mean gestational age at which women received care was 9.6 weeks (Table 1).

#### Method of satisfying the notification requirement

A total of 287 abortions among minors took place after August 14, 2013, and were subject to the notification requirement. According to clinic documentation, 98% of minors satisfied the requirement by notifying an adult family member. Parents (91%) were the most common adult family member notified, followed by grandparents (5%), legal guardians (2%), and step-parents ( $<1\%$ ). Four minors (1.4%) obtained judicial bypass and one minor reported abuse by an adult family member and therefore was not subject to the notification requirement (Table 2).

#### Number and proportion of abortions to minors

In the 1 year pre-law, there were 220 abortions to minors and 325 to young adults. In the 1 year post-law, there were 156 abortions to minors and 318 to young adults. This represents a 29% decline among minors and a 2% decline among young adults. Minors represented 33% of abortions among women ages 20 years and below after implementation of the PN requirement, compared with 39% before the law went into effect ( $p = 0.016$ ) (not shown).

#### Parental awareness and perceived support

The proportion of minors with at least one parent aware of their pregnancy increased significantly after implementation of the PN requirement, from 71% pre-law to 93% post-law. In adjusted DID models, this change was significant compared with the increase in the proportion of young adults with an aware parent over the same time period (from 52% to 57%,  $p = .000$ ).

**Table 1**

Descriptive characteristics of women ages 20 years and below receiving abortion care at the study clinic between June 2012 and August 2015

		Minor (age ≤ 17 y) n = 538	Young adult (age 18–20 y) n = 1041	Full sample (age ≤ 20 y) N = 1,579 <sup>a</sup>
Abortion took place after parental notification requirement in effect (after August 14, 2013)		287 (53)	618 (59)	905 (57)
Age	≤13	12 (2)		12 (<1)
	14	51 (10)		51 (3)
	15	80 (15)		80 (5)
	16	138 (26)		138 (9)
	17	257 (48)		257 (16)
	18		253 (24)	253 (16)
	19		361 (35)	361 (23)
	20		427 (41)	427 (27)
Race/ethnicity	African-American	204 (38)	400 (38)	604 (38)
	Hispanic/Latina	6 (1)	19 (2)	25 (2)
	White	254 (47)	498 (48)	752 (48)
	Other/Mixed	66 (12)	111 (11)	177 (11)
	Missing	8 (1)	13 (1)	21 (1)
Previous abortion		82 (16)	351 (34)	433 (28)
Nulliparous		498 (94)	712 (69)	1201 (78)
Gestational age, weeks (mean, SD)		10.0, 4.5	9.5, 4.2	9.7, 4.3
State of residence	Illinois	277 (52)	538 (53)	830 (53)
	Missouri	224 (42)	441 (42)	665 (42)
	Indiana	12 (2)	22 (2)	34 (2)
	Kentucky	7 (1)	12 (1)	19 (1)
	Other	17 (3)	12 (1)	29 (2)
Self-reported history of depression or anxiety		55 (10)	107 (10)	162 (10)
Self-reported emotional or physical abuse at home		21 (4)	35 (4)	56 (4)
Endorsed statement "At my stage of pregnancy, I think [abortion] is the same as taking the life of a child after it's already born"		145 (27)	224 (22)	369 (24)

Values are n (%), unless otherwise noted.

<sup>a</sup> This study draws on data from two sources. The first is an administrative database maintained by the clinic that records the number and age of women seeking abortion, gestational age (from clinic ultrasound), and state of residence. Gestational age was missing in two records. We also abstracted data from the medical charts of 98.7% of women in the clinic's administrative database. Thus, for measures derived from the medical record, n = 1,556.

Parents' support for the decision did not change pre- to post-law for minors or young adults. See Table 3 for all DID results.

After implementation of the PN requirement, minors reported that mothers (85%) and male partners (82%) were the most common individuals aware of their pregnancy. Friends (49%), fathers (44%), and sisters (43%) were also aware (not shown).

**Table 2**Method of satisfying parental notification requirement among minors receiving abortion care after August 14, 2013 at the study clinic (N = 283<sup>a</sup>)

	n (%)
Notified an adult family member	277 (98.2)
Type of family member notified (among those who notified) <sup>b</sup>	
Parent	252 (89.5)
Grandparent	15 (5.3)
Guardian	5 (1.8)
Step-parent	2 (.7)
Obtained judicial bypass	4 (1.4)
Reported abuse	1 (.4)

<sup>a</sup> Although 287 minors obtained abortion care after implementation of the parental notification requirement, we are missing data on method of satisfying the requirement for four minors because the chart could not be located (n = 3) or the abstractor did not document data from the parental notification form during abstraction (n = 1).

<sup>b</sup> Does not sum to 283/100% because (1) two minors indicated that multiple adults had been notified and (2) forms for six minors were missing data on the type of adult family member notified. In these six cases, all indicated on their Needs Assessment Form that they had involved one (n = 5) or both (n = 1) parents in their decision.

### Male partners' awareness and perceived support

A majority of minors involved their male partner in their decision pre- (80%) and post- (83%) law. This change was not significant compared with the trend in young adults ( $p = .284$ ). However, minors and young adults had divergent trends in terms of partner support for their decision. Although male partner support among minors was 85% pre-law and 79% post-law, male partner support among young adults went from 81% pre-law to 84% post-law. This change was marginally significant ( $p = .077$ ) in adjusted DID models.

### Felt forced into abortion

The proportion of minors who reported that someone else is forcing them to have an abortion was 1.9% pre-law and 4.0% post-law; this change was not statistically significant ( $p = .103$ ). The proportion of young adults that felt forced remained stable at 1.8%. The difference over time between minors and young adults was not statistically significant in adjusted DID models ( $p = .297$ ).

Pre-law, minors named parents as the source of pressure in four of five cases. Post-law, among the 12 minors who reported feeling "forced to have an abortion against my will," parents remained the most common source (58%), followed by "everybody" (25%) and male partners (16%). One-half (6 of 12) reported that more than one person was forcing them to have an abortion (not shown).

**Table 3**

Changes in the frequency, timing, and context of abortion care for minors versus young adults in response to Illinois' 2013 parental notification requirement

	Minors (<17 y) <sup>a</sup>			Young adults (18–20 y) <sup>a</sup>			<i>p</i> Value on interaction term (minor × post-law) in unadjusted difference-in-differences regression model	<i>p</i> Value on interaction term (minor × post-law) in adjusted difference-in-differences regression model <sup>c</sup>
	Pre-law (%) n = 263	Post-law (%) n = 299	<i>p</i> Value in pre-post comparison <sup>b</sup>	Pre law (%) n = 409	Post law (%) n = 606	<i>p</i> Value in pre-post comparison <sup>b</sup>		
<b>Involvement and support of parents</b>								
Involved at least one parent	71	93	.000	53	58	.110	.000	.000
Mother supports the decision (among those who involved mother)	89	92	.365	88	85	.227	.134	.137
Father supports the decision (among those who involved father)	82	83	.847	78	79	.866	.997	.968
<b>Involvement and support of male partners</b>								
Involved male partner (boyfriend, husband, or “father”)	80	83	.444	85	83	.527	.321	.284
Partner supports the decision (among those who involved partner)	85	79	.141	81	84	.259	.063	.077
<b>Forced</b>								
Felt forced into their decision	1.9	4.1	.103	1.8	1.8	.922	.205	.297
<b>Decision certainty</b>								
Very sure of decision to have an abortion	77	71	.099	82	82	.798	.269	.360
<b>Projected coping after abortion</b>								
Anticipates poor coping	8.9	9.2	.913	5.5	6.1	.675	.900	.652
<b>Delay</b>								
Mean gestational age (wk)	10.2	10.2	.794	9.7	9.1	.021	.144	.165
Second trimester abortion (≥13 wk)	23	26	.421	19	16	.254	.193	.231
<b>Travel</b>								
Traveling from out of state	51	47	.321	47	46	.841	.440	.388
<b>Delay × Travel</b>								
Second trimester abortion among those coming from out of state	21	31	.084	23	16	.059	.012	.022

N = 1,577 for outcomes derived from the administrative dataset (number, delay, and travel). For all other outcomes, n = 1,556.

<sup>a</sup> Exposure to the law was defined using a woman's age at the estimated time she discovered she was pregnant, and was therefore exposed to the parental notification requirement. Age at time of conception was calculated by subtracting weeks gestation (from clinic ultrasound) from age on the date of receipt of abortion care (date of service – date of birth).

<sup>b</sup> Pre-post differences assessed using mixed effects regression models to account for multiple abortions by woman over the study period.

<sup>c</sup> Models adjusted for age, race/ethnicity, gestational age (except when outcome of interest), state of residence (except when outcome of interest), abortion history, self-reported physical or emotional abuse at home, self-reported depression or anxiety, and endorsement of the statement that “[abortion] is the same as taking the life of a child after it's already born.”

### Decision certainty

The proportion of minors who indicated that they were “very sure” of their decision to have an abortion was 77% pre-law and 71% post-law ( $p = .099$ ). The proportion of young adults that were very sure remained stable at 82% ( $p = .798$ ). The DID between minors and young adults was not statistically significant in adjusted models ( $p = .360$ ).

### Anticipated coping

A similar proportion of minors anticipated poor coping pre- (8.9%) and post- (9.2%) law. A smaller proportion of young adults anticipated poor coping pre- (5.5%) and post- (6.2%) law, and there were no differences in the trends between minors and young adults ( $p = .652$ ) according to the adjusted DID models.

### Delays in obtaining care

After implementation of the PN requirement, the proportion of abortions occurring in the second trimester went from 23% to 26% among minors and from 19% to 16% among young adults. The difference in trends between minors and young adults was not statistically significant in adjusted models ( $p = .174$ ).

### Travel from out of state

In the 1 year pre-law, 135 minors and 190 young adults from out of state obtained abortion care. In the 2 years post-law, 141 minors and 281 young adults from out of state received care. These numbers translate into no statistically significant difference in the proportion of abortions to women living outside of Illinois from pre- to post-law among minors (51%–47%) and young

adults (47%–46%). Minors traveling from out of state were marginally more likely to have an abortion in the second trimester in the post-law period than they were in the pre-law period (31% vs. 21%,  $p = .084$ ). This difference was significantly different ( $p = .022$ ) from the trend observed in young adults coming from out of state, who saw a decline in the proportion of second trimester abortions between the pre- and post-law periods (23%–16%).

## Discussion

Consistent with recent studies in New Hampshire [5] and Chicago [24], we find that implementation of a PN requirement was associated with a decline in the number of minors obtaining abortion and an increase in the proportion of minors whose parents were aware of their decision to seek abortion care. Building on previous research, we also examine how the PN requirement influenced the nature of PI. Contrary to our hypothesis that mandated involvement might increase involvement of nonsupportive parents, we found no change in levels of parental support for the decision. However, some minors may have forgone abortion care because the law required them to involve a parent who was unsupportive of the decision, a scenario that we were unable to capture in this study. This scenario would also explain the observed decline in abortions to minors compared with young adults.

This study also revealed several negative ramifications of the PN requirement. We observed increased delays in receipt of abortion care among minors traveling from out of state. Although abortion is a safe, medical procedure, the cost of care increases [25], and the clinic and procedural options available decrease [26] when care is delayed into the second trimester. With the exception of Iowa, all states bordering Illinois require parental consent instead of notification. This may explain why minors continue to travel to southern Illinois to receive care, but face increased delays doing so.

Of potential concern, we also found a marginally significant decrease in the proportion of minors that were certain of their decision. Illinois' law is less stringent than PI requirements in most other states—it permits notification of a parent, step-parent living with the minor, grandparent, or legal guardian, and it requires notification and not consent. To fully understand the effect of PI requirements on minors' decision-making, including their levels of certainty and autonomy, it would be informative to repeat this study in states with more stringent consent requirements. Notably, involvement of other adult family members, including grandparents, and use of alternatives to involvement such as judicial bypass were the preferred options of nearly one in ten (9%) of minors who received abortion care after the law went into effect, indicating the importance of offering these alternatives.

Our study findings must be considered in the context of several limitations. We examine data from one facility, and therefore are not able to examine changes in the birth rate that may have accompanied the observed decline in the numbers of minors seeking abortion after the law. In addition, although we are not able to generalize findings broadly to all minors in Illinois, our study findings complement similar work among young women receiving care at a first trimester clinic in Chicago [24]. A second limitation is that our data are limited to women who receive an abortion. Minors who considered abortion but decided not to or

were unable to obtain care would not be included in our dataset, potentially underestimating the effects of the law.

Despite these limitations, our study offers several unique strengths. We offer a contemporary perspective on minors' experience with PI requirements, in a setting where travel to avoid having to involve a parent is no longer possible. We are able to compare changes in outcomes of interest between minors and young adult women, resulting in estimates that are less likely to be biased by ongoing trends influencing all young women, such as the ongoing downward trend in abortion [27]. Furthermore, we are able to describe the effect of the PN law on whether and when minors access care, as well as various aspects of their experience doing so.

Our study indicates that increased involvement of parents after enforcement of a PN requirement did not translate into increased parental support for the decision or increase minors' decision certainty. On the contrary, we observed an overall decline in the frequency of care seeking among minors, delays in care for minors traveling from out of state, and evidence that some minors are less certain of their decision. Our findings suggest that in addition to increasing awareness of parents, a notification requirement is associated with other, unintended consequences that might temper enthusiasm for these laws as a way to improve the health and well-being of minors considering abortion. Of concern, we hypothesize that these findings would be amplified in settings where parental consent, instead of notification, is required and options to involve alternate adult family members are not available, as is the case in the majority of states with PI requirements.

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## References

- [1] Guttmacher Institute. Parental involvement in minors abortion: State policies in brief. New York (NY): Guttmacher Institute; 2017.
- [2] Joyce T, Kaestner R, Colman S. Changes in abortions and births and the Texas parental notification law. *N Engl J Med* 2006;354:1031–8.
- [3] Cartoof VG, Klerman LV. Parental consent for abortion: Impact of the Massachusetts law. *Am J Public Health* 1986;76:397–400.
- [4] Henshaw SK. The impact of requirements for parental consent on minors' abortions in Mississippi. *Fam Plann Perspect* 1995;27:120–2.
- [5] MacAfee L, Castle J, Theiler RN. Association between the New Hampshire parental notification law and minors undergoing abortions in northern New England. *Obstet Gynecol* 2015;125:170–4.
- [6] Ellertson C. Mandatory parental involvement in minors' abortions: Effects of the laws in Minnesota, Missouri, and Indiana. *Am J Public Health* 1997;87:1367–74.
- [7] Joyce T, Kaestner R. State reproductive policies and adolescent pregnancy resolution: The case of parental involvement laws. *J Health Econ* 1996;15:579–607.
- [8] Levine PB. Parental involvement laws and fertility behavior. *J Health Econ* 2003;22:861–78.

- [9] Hasselbacher LA, Dekleva A, Tristan S, Gilliam ML. Factors influencing parental involvement among minors seeking an abortion: A qualitative study. *Am J Public Health* 2014;104:2207–11.
- [10] Colman S, Joyce T. Minors' behavioral responses to parental involvement laws: Delaying abortion until age 18. *Perspect Sex Reprod Health* 2009;41:119–26.
- [11] Colman S, Joyce T, Kaestner R. Misclassification bias and the estimated effect of parental involvement laws on adolescents' reproductive outcomes. *Am J Public Health* 2008;98:1881–5.
- [12] Illinois General Assembly. Parental Notice of Abortion Act of 1995. Available at: <http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=2103&ChapterID=59>. Accessed June 20, 2017.
- [13] Dennis A, Henshaw SK, Joyce T, et al. The impact of laws requiring parental involvement for abortion: A literature review. New York (NY): Guttmacher Institute; 2009.
- [14] Musser EL. Mandating parental involvement in minors abortions. *Berkeley J Gend Law Justice* 1998;13:282–92.
- [15] Henshaw SK, Kost K. Parental involvement in minors' abortion decisions. *Fam Plann Perspect* 1992;24:196–207, 13.
- [16] Ralph L, Gould H, Baker A, Foster DG. The role of parents and partners in minors' decisions to have an abortion and anticipated coping after abortion. *J Adolesc Health* 2014;54:428–34.
- [17] Kavanagh EK, Hasselbacher LA, Betham B, et al. Abortion-seeking minors' views on the Illinois parental notification law: A qualitative study. *Perspect Sex Reprod Health* 2012;44:159–66.
- [18] Zabin LS, Hirsch MB, Emerson MR, Raymond E. To whom do inner-city minors talk about their pregnancies? Adolescents' communication with parents and parent surrogates. *Fam Plann Perspect* 1992;24:148–54, 73.
- [19] Pope LM, Adler NE, Tschann JM. Postabortion psychological adjustment: Are minors at increased risk? *J Adolesc Health* 2001;29:2–11.
- [20] Borgatta L, Grimes D, Creinin MD, Lichtenberg S, editors. Management of unintended and abnormal pregnancy: Comprehensive abortion care. West Sussex (UK): Blackwell Publishing Ltd.; 2009.
- [21] Foster DG, Gould H, Kimport K. How women anticipate coping after an abortion. *Contraception* 2012;86:84–90.
- [22] Foster DG, Gould H, Taylor J, Weitz TA. Attitudes and decision making among women seeking abortions at one U.S. clinic. *Perspect Sex Reprod Health* 2012;44:117–24.
- [23] Angrist JD, Pischke J-S. Mostly harmless econometrics: An empiricist's companion. Princeton (NJ): Princeton University Press; 2009.
- [24] Ramesh S, Zimmerman L, Patel A. Impact of parental notification on Illinois minors seeking abortion. *J Adolesc Health* 2016;58:290–4.
- [25] Roberts SC, Gould H, Kimport K, et al. Out-of-pocket costs and insurance coverage for abortion in the United States. *Womens Health Issues* 2014;24:e211–8.
- [26] Upadhyay UD, Weitz TA, Jones RK, et al. Denial of abortion because of provider gestational age limits in the United States. *Am J Public Health* 2014;104:1687–94.
- [27] Jones RK, Jerman J. Abortion incidence and service availability in the United States. *Perspect Sex Reprod Health* 2014;2017.