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Effects of Legislation Regulating Abortion in Arizona

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A B S T R A C T

Introduction: Abortion is a common and safe procedure in the United States, the regulation of which varies by state. Since 2011, hundreds of state-level abortion restrictions have been enacted by legislatures across the country. This study describes the effects of two such regulations enacted in 2011 in Arizona, (A.R.S.) 36-2153 and 36-2155, that imposed a 24-hour waiting period requiring two separate in-person clinic visits before obtaining an abortion and banned advanced practice clinicians such as physician assistants, nurse practitioners, and nurse midwives from inducing medication abortions by prescribing mifepristone.

Materials and Methods: We conducted a pre–post study to describe the effect of Arizona's scope of practice law on abortion provision by county. Using publicly available data, we compared patterns of abortion provision in 2009 and 2010 (before the laws) with 2012 and 2013. Our primary objective was to compare the proportion of abortions performed with medication by prescription of mifepristone (versus abortions performed surgically, known as aspiration abortions) before and after the laws were enacted. Our secondary objectives were to report the number of counties that lost an abortion provider and the change in the proportion of abortions performed before 14 weeks' gestation of pregnancy after the enactment of the laws.

Results: After enactment of the laws, the proportion of Arizona's 15 counties with abortion clinics decreased from 33% to 13%. Over this time, the proportion of abortions performed with medication in Arizona decreased by 17.4% (95% CI, 16.6%–18.3%; $p = .0002$), from 47.6% to 30.2%. Similarly, the proportion of abortions performed before 14 weeks' gestation in Arizona decreased by 3.3% (95% CI, 2.8%–3.8%; $p = .0002$) after the enactment of these laws.

Discussion: The proportion of abortions performed with medication and the proportion of abortion performed before 14 weeks' gestation in Arizona were negatively affected by the enactment of these laws. These findings are not explained by national temporal trends in abortion, because the proportion of abortions performed with medication increased and early abortions remained stable over the same time period in the United States as a whole.

Conclusions: Proponents of laws restricting the provision of abortion such as these claim to improve the safety of abortion, but they actually seem to decrease access to abortion, as defined by the number of counties with abortion providers, and subsequently lead to delays in abortion. These data should inform future policies by providing an example of how such laws affect women seeking abortion.

Abortion is a frequently performed procedure in the United States, with 926,200 abortions performed in the United States in 2014 alone (Jatlaoui et al., 2016). However, abortion is tightly regulated in many U.S. states. It has been shown that restrictive legislation makes this safe and common procedure difficult for some U.S. women to obtain, requiring women to travel to a different state or delay their abortion pursuant to local laws (Grossman et al., 2014). From 2011 to 2014, the number of clinics

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providing abortion in the United States declined by 6% (Jones & Jerman, 2017). In 2014, 90% of counties in the United States lacked an abortion provider (Jones & Jerman, 2017). Lack of access to a nearby abortion provider has been shown to increase costs and delays in obtaining abortion (Grossman et al., 2014). When women are unable to obtain abortions, they are at increased risk of adverse physical health outcomes and violence from the man involved in the pregnancy (Gerdts et al., 2016; Roberts et al., 2014).

Arizona is a traditionally conservative state whose legislature has enacted multiple laws restricting the provision of abortion. Restrictions to abortion provision and access enacted in Arizona as of April 2017 include ("State Facts About Abortion: Arizona," 2017):

1. A woman seeking an abortion must receive in-person state-directed counseling by a physician. This counseling is designed to discourage the patient from having an abortion and must include an ultrasound examination, which the provider must offer to let the woman view. She must then wait 24 hours before beginning the abortion procedure.
2. Health plans offered in the state health insurance exchange may cover abortion only in cases in which not having an abortion would pose a danger to the woman's life or severely compromise her health.
3. Insurance provided to public employees may cover abortion only in cases in which the woman's life is endangered or her health is severely compromised.
4. The use of telemedicine to provide medication abortion is prohibited.
5. The parent of a minor must consent before an abortion; this consent must be written and notarized.

Previous research suggests that similar restrictions make it more difficult for women to obtain abortions (Joyce, Henshaw, Dennis, Finer, & Blanchard, 2009; Roberts, Turok, Belusa, Combellick, & Upadhyay, 2016), and that women anticipate that some of these restrictions will impact them negatively (Karasek, Roberts, & Weitz, 2016). Thus, it is reasonable to question whether these restrictions might adversely affect women in Arizona.

In 2009, the Arizona State Legislature, in keeping with its conservative history, passed additional legislation further restricting abortion in the state. Arizona Revised Statute (A.R.S.) 36-2153 and 36-2155 mandated that Arizona women receive in-person counseling from a physician 24 hours before obtaining an abortion and banned all advanced practice clinicians (APCs) from inducing medication abortions by prescribing mifepristone. The laws were enacted in August 2011 after legal challenges; of note, APCs have been legally banned from performing aspiration abortions in Arizona since 2009 despite strong evidence that APCs can safely provide aspiration abortions (Goldman, Occhiuto, Peterson, Zapka, & Palmer, 2004; Warriner et al., 2006; Weitz et al., 2013).

We set out to examine the effects of this legislation on the availability of abortion in Arizona, specifically the proportions of abortions performed before 14 weeks' gestation and using medications. A.R.S. 36-2153 and 36-2155 were studied due to the public availability of data collected by the Arizona Department of Health Services (DHS), which allows the effect of these laws to be analyzed by our team and by the public at large.

Methods

We conducted a pre–post study analyzing changes in the timing of abortion and use of medication versus aspiration abortion in Arizona using publicly available sources. We first determined the number of Arizona counties with abortion providers before and after A.R.S. 36-2153 and 36-2155 went into effect in 2011. We reviewed publicly available data from the Arizona DHS website for 2009 and 2010 to identify counties in which abortions were performed during these years. Beginning in 2011, the Arizona DHS ceased identifying counties in which abortions were performed in its publicly available data; thus, we conducted an Internet search to identify news articles in the Arizona press documenting the closure of clinics in Arizona in 2011 to identify Arizona counties that lost abortion access in 2011 (Abortions discontinued at 7 locations in Arizona, 2011). Loss of abortion access in these counties was corroborated via phone calls to clinics affected confirming clinic closure and/or lack of provision of abortion services.

To examine trends in the proportion of Arizona abortions performed with medication and the proportion performed before 14 weeks' gestation, we collected publicly available data from 2009, 2010, 2012, and 2013 from the Arizona DHS website. The DHS collects these data from clinics and hospitals in Arizona in accordance with A.R.S. 36-2163, which mandates "the department of health services shall collect all abortion reports and complication reports and prepare a comprehensive annual statistical report based on the data gathered in the reports." We abstracted the number and proportion of abortions performed before 14 weeks' gestational age as well as the number and proportion of surgical abortions and medication abortions in each year of interest from these data.

For the analysis, we aggregated the 2 years of data before the enactment of A.R.S. 36-2153 and 36-2155, and the 2 years after its enactment (2009 and 2010, and 2012 and 2013, respectively). We then compared the aggregated data using Pearson's χ^2 test and the Wilson procedure with a correction for continuity. To determine whether the trends identified in this study were specific to Arizona, and not merely representative of changes in abortion rates on a national level, we compared these data to the same data points for the United States as a whole (Jatlaoui et al., 2016).

When examining Arizona's abortion data during the time period of this study, we noted a substantial increase in the absolute number of abortions performed in Arizona. In investigating possible causes for this increase in the number of abortions, we noted that the Arizona DHS implemented new standards for reporting abortion in July 2010, which coincides with the increase in the number of reported abortions during the time period of interest for this study. Given this change and the resulting difficulty separating the confounder of the changed reporting standards from any cause for the increased number of reported abortions in Arizona, our analysis focuses on changes in the proportions of Arizona abortions performed with medication and the proportion performed before 14 weeks' gestation rather than on the absolute numbers of abortions performed with medication or before 14 weeks' gestation. We chose to examine the proportion of abortions performed with medication to examine the impact of the law restricting the provision of medication abortion by APCs. We chose to examine the proportion of abortions performed before 14 weeks' gestation as a proxy for delay in a woman's ability to obtain an abortion in the first trimester of pregnancy.