ARTICLES

State-Created Fetal Harm

MEGHAN BOONE* & BENJAMIN J. MCMICHAEL**

Half a century of state-level restrictions on abortion access might cause a casual observer to conclude that state governments have a long-standing commitment to protecting fetal life. And yet, over the last several decades, state governments and local law enforcement are increasingly taking steps that actively undermine fetal health. Through the passage of state fetal endangerment laws and the prosecution of pregnant women under stretched interpretations of existing criminal laws, states are actively creating conditions that result in poorer fetal health outcomes—including an increase in fetal and infant death.

This Article seeks to make three important contributions to the scholarly literature regarding the undesirability of fetal endangerment laws. First, it shows—for the first time through empirical evidence—that fetal endangerment laws fail to accomplish the state's goal of protecting and promoting fetal and infant health. Second, it shows that these laws actually have a statistically significant, negative impact on fetal and infant health. In particular, we examine the impact of Tennessee's 2014 fetal endangerment law—a law that explicitly criminalized prenatal drug use—by analyzing comprehensive datasets on births, fetal deaths, and infant deaths. We find consistent evidence that this law undermined the ability of mothers to access prenatal care, worsened birth outcomes, and increased both fetal and infant death rates. For example, in 2015 alone, this law resulted in twenty more fetal deaths and sixty more infant deaths. Finally, based on this empirical evidence, this Article argues that states should be prohibited from passing additional fetal endangerment laws and continuing to enforce current ones because such state action fails to survive even rational basis review.

TABLE OF CONTENTS

* Assistant Professor, Wake Forest University School of Law. The authors would like to extend their sincere thanks to Professor Ron Krotoszynski for his early and extremely helpful input on this project. They would also like to thank the editors of *The Georgetown Law Journal* for their thoughtful and thorough edits and comments.

** Assistant Professor, University of Alabama School of Law. The protocols employed in this Article were approved by the University of Alabama Institutional Review Board (approval number 19-OR-256-ME). The National Center for Health Statistics approved this study and granted the authors permission to analyze the restricted-use data described below (approval number DVS2019-1837).

INTRODUCTION

The criminalization of pregnancy started slowly. Initially, only a few women were prosecuted under the theory that their own actions harmed the fetuses they

were carrying.[1] Even then, most of the cases involved extreme facts.[2] But in the last several decades, more women have been prosecuted for their behavior during pregnancy.[3] And for the first time, state legislatures have introduced and passed laws that specifically criminalize pregnancy, as opposed to simply applying existing criminal laws to pregnant people.[4]

From the outset, scholars, advocates, and public health officials rang the alarm over potential harms—to women and to babies—that could result from the criminalization of pregnancy.[5] They argued that criminalization of addiction in pregnancy would cause more women to avoid the healthcare system entirely to avoid prosecution. Such avoidance would result in additional adverse outcomes for pregnant women and children. Nevertheless, over the last two decades, state legislators and local prosecutors have aggressively sought to criminalize a larger swath of conduct in pregnancy under the guise of protecting fetal life.[6] Any potential negative outcomes for pregnant women were ignored or accepted as necessary to attain the positive results that such laws would have in terms of improving fetal and infant health.[7]

Unsurprisingly, the alarm bells were warranted. This Article shows—using, for the first time, an empirical, data-driven analysis—that fetal endangerment

---

1. *See* LINDA C. FENTIMAN, BLAMING MOTHERS: AMERICAN LAW AND THE RISKS TO CHILDREN'S HEALTH 110–12 (2017) (describing the first several high-profile criminal prosecutions of pregnant women, spanning from 1977 to 1999).

2. *See id*. at 111 (describing the prosecution of Regina McKnight, a homeless, drug-addicted woman who gave birth to a stillborn baby and was subsequently convicted of murder).

3. *See id*. at 112, 130–31 (noting both the increase in the prosecution of women for prenatal drug use and the increasing severity of the criminal charges leveled against them).

4. *See infra* Section I.A.

5. One of the first academic treatments of the subject was a 1991 article by Dorothy E. Roberts that critically examined the reaction to the "crack epidemic" and its particular effects on pregnant Black women. *See generally* Dorothy E. Roberts, *Punishing Drug Addicts Who Have Babies: Women of Color, Equality, and the Right of Privacy*, 104 HARV. L. REV. 1419 (1991).

6. *See* Michele Goodwin, *Fetal Protection Laws: Moral Panic and the New Constitutional Battlefront*, 102 CALIF. L. REV. 781, 787 (2014) ("According to proponents, fetal protection laws are intended to promote the health and safety of fetuses by criminalizing actual or intended harm to the unborn.").

7. *See* Cortney E. Lollar, *Criminalizing Pregnancy*, 92 IND. L.J. 947, 996 (2017) ("The state legislators creating laws specifically criminalizing the use of drugs by pregnant women, the prosecutors who rely on these and other generally applicable criminal laws to punish women for this same behavior, and the judges who sanction punishment based on these justifications all vocally rely on the harm to the fetus and subsequent child as motivation for their actions."); *see also* Lanetra Bennett, *Woman Charged with Child Abuse for Drug Use During Pregnancy*, WCTV (Mar. 10, 2010, 7:11 PM), https://perma.cc/E5NQ-9TT9 (quoting a law enforcement officer supporting the prosecution of pregnant drug users because of his belief that drug use during pregnancy is "a selfish act by the mother of the child [because] the important thing is the child"). Some also voice the hope that such laws will act as either a deterrent to would-be pregnant drug users or an incentive to seek help. These goals, however, are often framed as secondary to the goal of protecting fetal and infant life (or punishing "bad" mothers). *See, e.g.*, Andrea Grimes, *Pregnant Texans Are Being Charged with Crimes That Don't Exist*, REWIRE NEWS GROUP (Oct. 16, 2014, 9:49 AM), https://rewire.news/article/2014/10/16/pregnant-texans-charged-crimes-dont-exist [https://perma.cc/R7P5-BS2R] (quoting Assistant District Attorney Joel Wilks who believes "there's a deterrence factor" in prosecution of prenatal drug use, while also serving as an opportunity for "retribution").

laws[8] not only fail to deliver the promised benefits in terms of improved fetal and infant health but also actively undermine the realization of that goal by decreasing prenatal care and increasing fetal and infant death rates. In light of this new empirical evidence that fetal endangerment laws fail to deliver on the promise of improved fetal and neonatal outcomes—which builds on the mountain of scholarly argument, as well as existing anecdotal and qualitative evidence—this Article argues that fetal endangerment laws are unconstitutional for failure to survive even the most lenient rational basis review.

In Part I, we briefly describe the history and form of fetal endangerment laws. Part II then summarizes existing literature regarding fetal endangerment laws—all of which is uniformly opposed to such laws. Part III presents an empirical analysis of the data that the Centers for Disease Control and Prevention used to calculate official birth and death statistics. Our analysis focuses on the state of Tennessee, which maintained one of the harshest fetal endangerment laws in the United States between 2014 and 2016. This unprecedented empirical analysis reveals consistent evidence that fetal endangerment laws—contrary to their stated purpose—harm fetuses, infants, and parents. Finally, in Part IV, we argue that in light of this new, empirical evidence, states are constitutionally prohibited from passing additional fetal endangerment legislation—or from continuing to enforce existing fetal endangerment laws—under the guise of protecting fetal health because such an argument is patently irrational.

I. FETAL ENDANGERMENT LAWS

In the late 1980s, the term "fetal protection" was used for the first time to describe laws and policies intended to punish women, either through the civil or criminal legal system, for conduct they engaged in while pregnant.[9] These punitive measures were aimed primarily at women who used crack cocaine during pregnancy,[10] and tapped into the "moral panic" that arose in the face of prenatal

8. These laws are referred to in a number of ways—fetal assault laws, fetal harm laws, chemical endangerment laws, and personhood laws. This Article uses the umbrella term "fetal endangerment laws" to refer to the criminalization of pregnant women's conduct that causes or risks harm to fetal life, whether such criminalization occurs through the passage of specific laws or the interpretation of existing criminal laws. The term "endangerment" is used, as opposed to "harm," because the laws often criminalize even the potential for harm, including when no harm results. *See infra* notes 35–41 and accompanying text.

9. *See* Linda C. Fentiman, *The New "Fetal Protection": The Wrong Answer to the Crisis of Inadequate Health Care for Women and Children*, 84 DENV. U. L. REV. 537, 540 n.7 (2006). Before the late 1980s, the term had been used only to describe either employers' policies of excluding fertile women from workplaces or state laws prohibiting scientific experimentation on embryos or fetuses. *See id.*

10. *See* Mishka Terplan, Alene Kennedy-Hendricks & Margaret S. Chisolm, *Prenatal Substance Use: Exploring Assumptions of Maternal Unfitness*, 9 SUBSTANCE ABUSE: RES. & TREATMENT, 2015, at 1, 1 (2d supplementary issue) ("Public concern [in the 1980s] focused on pregnant women as the agents responsible for propagating a predicted underclass of children whose cognitive and developmental disabilities would strain the country's economic and social welfare system for years to come.").

drug use in already marginalized communities.[11] Although at first the criminalization of risky behavior in pregnancy was relatively rare, the last several decades have witnessed rapid acceleration in both the passage of specific fetal endangerment laws and the prosecution of pregnant women under existing criminal statutes.[12]

Although mostly used to prosecute pregnant women who use illegal drugs,[13] fetal endangerment laws often sweep broadly enough to criminalize all types of behavior in pregnancy. Pregnant women have been prosecuted for attempted self-abortion,[14] attempted suicide,[15] and even for failure to wear a seatbelt as required by state law.[16] In any circumstance in which a woman could theoretically risk harm to her pregnancy—regardless of her intention—fetal endangerment laws can be used to criminalize her behavior, even if no harm actually results.[17]

Discussing fetal endangerment as a cohesive set of laws and policies is difficult due to the variation in ways states criminalize pregnant women's conduct and the judiciary's differing reactions to such attempted criminalization.[18] Although this

11. *See* Editorial, *Slandering the Unborn*, N.Y. TIMES (Dec. 28, 2018), https://www.nytimes.com/interactive/2018/12/28/opinion/crack-babies-racism.html ("News organizations shoulder much of the blame for the moral panic that cast mothers with crack addictions as irretrievably depraved and the worst enemies of their children."); *see also infra* Section II.D (describing how laws that criminalize prenatal drug use are enforced only among already stigmatized communities).

12. *See* Lollar, *supra* note 7 (noting the "rapid acceleration in the criminalization of drug use by pregnant mothers" between 2005 and 2014); Priscilla A. Ocen, *Birthing Injustice: Pregnancy as a Status Offense*, 85 GEO. WASH. L. REV. 1163, 1174–75 (2017) (noting that of more than 1,000 prosecutions of pregnant women for crimes relating to the alleged or potential risk to the fetus, more than half occurred in the years following 2007).

13. *See* Lynn M. Paltrow & Jeanne Flavin, *Arrests of and Forced Interventions on Pregnant Women in the United States, 1973–2005: Implications for Women's Legal Status and Public Health*, 38 J. HEALTH POL. POL'Y & L. 299, 315 (2013) (finding that eighty-four percent of pregnant women who had state action taken against them as a result of behavior while pregnant faced allegations of illegal drug use).

14. *See* Bryan Nichols, *Burlington Woman Will Not Be Charged with Feticide*, RADIO IOWA (Feb. 10, 2010), https://www.radioiowa.com/2010/02/10/burlington-woman-will-not-be-charged-with-feticide [https://perma.cc/6ARN-8Z67] (discussing the case of Christine Taylor, who was charged with attempted feticide after she tripped and fell down the stairs while pregnant because the police accused her of intentionally doing so).

15. *See* Editorial, *The Feticide Playbook, Explained*, N.Y. TIMES (Dec. 28, 2018), https://www.nytimes.com/interactive/2018/12/28/opinion/abortion-murder-charge.html (describing the prosecution of Bei Bei Shuai, who attempted suicide and was subsequently charged with murder when her baby died a few days after the suicide attempt).

16. *See* AMNESTY INT'L, CRIMINALIZING PREGNANCY: POLICING PREGNANT WOMEN WHO USE DRUGS IN THE USA 8 (2017) ("Laws identifying fetuses as potential 'victims' can have the effect of putting pregnant women's rights at risk, regardless of the law's intended purpose.").

17. *See* Lollar, *supra* note 7, at 982 (noting that the removal of infants who test positive for an illegal drug upon birth is not necessarily predicated on finding harm to the infant). The rise of fetal endangerment laws is one piece of a larger story about the rise of the "carceral state," whereby the United States criminalizes, prosecutes, and punishes in much greater numbers than comparable countries elsewhere in the world. But the rise of the criminalization of pregnancy implicates unique concerns—including issues of gender, privacy, and reproductive autonomy—not as present in the larger trajectory toward criminalization.

18. *See* MICHELE GOODWIN, POLICING THE WOMB: INVISIBLE WOMEN AND THE CRIMINALIZATION OF MOTHERHOOD 28–45 (2020) (describing the history and categories of fetal endangerment laws). There is

project discusses fetal endangerment laws as a single phenomenon, it is important to understand that the criminalization of pregnancy takes different forms: specific criminal statutes; stretched interpretations of existing criminal law; and serious (though technically noncriminal) sanctions, such as civil commitment and termination of parental rights. The following Sections catalogue and describe these various state approaches to fetal endangerment.

A. STATUTES SPECIFICALLY CRIMINALIZING FETAL ENDANGERMENT

In 2014, Tennessee became the first state to specifically criminalize drug use during pregnancy in its "fetal assault" law.[19] The law stated that a pregnant woman would be guilty of assault for the "illegal use of a narcotic drug . . . while pregnant, if her child is born addicted to or harmed by the narcotic drug and the addiction or harm is a result of her illegal use of a narcotic drug taken while pregnant."[20] Although exact statistics are not available, authorities prosecuted at least several dozen women under the statute before the law lapsed under a sunset provision in 2016.[21] Since then, state legislators in Tennessee have unsuccessfully reintroduced similar measures several times.[22]

Although Tennessee currently stands alone in criminalizing prenatal drug use via a specific statute,[23] this is not a static area of the law. As states and municipalities rush to address the growing opioid crisis, additional jurisdictions are adding—or looking to add—some version of fetal endangerment laws to their criminal codes. In just the first two months of 2017, seventeen state legislatures introduced criminal-fetal endangerment measures.[24] The Missouri legislature even considered the addition of an entirely new crime—"abuse of an unborn

a limited body of relevant federal law as well. Primarily, the Child Abuse Prevention and Treatment Act (CAPTA) mandates that healthcare providers notify state agencies of newborns exposed to substance use prenatally. 42 U.S.C. § 5106a(b)(2)(B)(ii) (2018). States have wide latitude, however, in interpreting the law's requirements.

19. *See* Lollar, *supra* note 7, at 949 (describing Tennessee as the first state to explicitly criminalize prenatal drug use, while reflecting a long-standing trend in the criminalization of poor, often minority pregnant women).

20. TENN. CODE ANN. § 39-13-107(c)(2) (2014) (effective until July 1, 2016).

21. *See* AMNESTY INT'L, *supra* note 16, at 27–29.

22. *See Tennessee Bill to Revive 'Fetal Assault' Law Would Prosecute Women Who Use Drugs During Pregnancy*, WAFB (Feb. 12, 2019, 2:46 PM), https://www.wafb.com/2019/02/11/tennessee-bill-revive-fetal-assault-law-would-prosecute-women-who-use-drugs-during-pregnancy [https://perma.cc/2F94-ZGP3].

23. *See* Wendy A. Bach, *Prosecuting Poverty, Criminalizing Care*, 60 WM. & MARY L. REV. 809, 813–14 (2019) ("Tennessee [is] the only state in the nation to explicitly criminalize in-utero transmission of illegally obtained opiates to a fetus.").

24. AMNESTY INT'L, *supra* note 16, at 7. As of this Article's writing, no state has successfully passed legislation that specifically criminalizes drug use in pregnancy in a manner similar to Tennessee's fetal assault law. *See* Bach, *supra* note 23. Many states, however, make prenatal drug use relevant or dispositive in determining parental rights. *See Substance Use During Pregnancy*, GUTTMACHER INST. (Nov. 1, 2020), https://www.guttmacher.org/state-policy/explore/substance-use-during-pregnancy [https://perma.cc/ZS22-P5WF]. Additionally, many states criminalize self-managed abortion care, which can lead to criminal investigation of pregnancy loss. *See* Gabriela Weigel, Laurie Sobel & Alina Salganicoff, *Understanding Pregnancy Loss in the Context of Abortion Restrictions and Fetal Harm Laws*, KAISER FAM. FOUND. (Dec. 4, 2019), https://www.kff.org/womens-health-policy/issue-brief/

child"—that would criminalize the ingestion of a narcotic drug or controlled substance while a woman knows or reasonably should have known that she is pregnant, regardless of whether the child is born addicted or otherwise harmed.[25]

B. STRETCHED INTERPRETATIONS OF EXISTING CRIMINAL LAW

The most common method of criminalizing fetal endangerment, however, is interpreting existing criminal laws to apply to the behavior of pregnant women. Prosecutors have charged pregnant women with homicide,[26] reckless endangerment,[27] child abuse,[28] child neglect,[29] and unlawful application of controlled substance to a minor[30] on the basis of their behavior during pregnancy.

Some state laws have been interpreted so consistently to apply to prenatal drug use that they become de facto fetal endangerment laws. For instance, Alabama's chemical endangerment law—passed in 2016—was originally intended to target the exposure of children to home methamphetamine labs.[31] Nevertheless, the law has been used since its passage to prosecute over 400 women for drug use while pregnant.[32] The Alabama Supreme Court has approved the application of the law to prenatal drug use under the theory that the womb is an "environment" and the fetus is a "child," as contemplated by the statute.[33] Thus, even though Alabama's legislature has never specifically passed a fetal endangerment law, Alabama remains at the forefront of the criminalization of pregnancy through its aggressive application of the chemical endangerment law against pregnant women.[34]

---

understanding-pregnancy-loss-in-the-context-of-abortion-restrictions-and-fetal-harm-laws [https://perma.cc/LK8K-LXXE].

25. H.R. 1903, 98th Gen. Assemb., 2d Reg. Sess. (Mo. 2016).

26. *See, e.g.*, State v. Deborah J.Z., 596 N.W.2d 490, 491, 496 (Wis. Ct. App. 1999) (holding that pregnant woman's consumption of alcohol could not support a prosecution for attempted first-degree intentional homicide and first-degree reckless injury).

27. *See, e.g.*, Kilmon v. State, 905 A.2d 306, 311–12, 315 (Md. 2006) (holding that pregnant woman's ingestion of cocaine could not form basis for reckless endangerment conviction).

28. *See, e.g.*, State v. Martinez, 137 P.3d 1195, 1197–98 (N.M. Ct. App. 2006) (reversing conviction of child abuse against woman who ingested cocaine while pregnant).

29. *See, e.g.*, State v. Louk, 786 S.E.2d 219, 223, 228 (W. Va. 2016) (reversing child neglect conviction of pregnant woman who ingested methamphetamine).

30. *See, e.g.*, State v. Cervantes, 223 P.3d 425, 428, 439 (Or. Ct. App. 2009) (en banc) (reviewing legality of prosecution of pregnant woman who ingested methamphetamine).

31. *See* Nina Martin, *Take a Valium, Lose Your Kid, Go to Jail*, PROPUBLICA (Sept. 23, 2015), https://www.propublica.org/article/when-the-womb-is-a-crime-scene [https://perma.cc/GZ8H-2TWH] ("Passed in 2006 as methamphetamine ravaged Alabama communities, the [chemical endangerment] law targeted parents who turned their kitchens and garages into home-based drug labs, putting their children at peril.").

32. AMNESTY INT'L, *supra* note 16, at 36. This number is likely considerably higher now because Alabama's use of the chemical endangerment law has continued unabated since the time of Amnesty International's report.

33. *See Ex parte* Ankrom, 152 So. 3d 397, 416, 421 (Ala. 2013). The Alabama Supreme Court reaffirmed this approach the following year in *Hicks v. State*, 153 So. 3d 53, 66 (Ala. 2014). Under current U.S. Supreme Court precedent, states are free to define fetal life and offer protection in non-abortion contexts. *See infra* note 63 and accompanying text.

34. *See* AMNESTY INT'L, *supra* note 16 (noting that more prosecutions of prenatal drug use have been prosecuted under Alabama's chemical endangerment law than any other single law in the country).

Importantly, under the umbrella of fetal endangerment, behavior that is otherwise not criminal outside of pregnancy can become criminal simply as a result of pregnancy.[35] So women who refuse medical intervention—which is not only *not* a criminal offense but also a constitutional right[36]—can still be prosecuted if they create a risk of harm to the fetus as a result of their refusal.[37] This is true independent of whether actual harm occurs to a fetus or child[38] because the criminalization attaches to the risk of harm.[39] As another example, pregnant women of lawful drinking age who consume alcohol may be prosecuted for this behavior as a result of their pregnancy.[40] Although the consumption of alcohol is not criminal, the consumption while pregnant—even within otherwise applicable legal limits—is criminalized. And even behavior that is marginally criminal, such as failure to wear a seatbelt, can subject pregnant women to harsher penalties as a result of the "risk" to the fetus.[41]

The criminalization of drug use in pregnancy is also unique because the vast majority of states criminalize manufacture, possession, or sale of drugs, but not drug use.[42] Pregnant drug users, however, are prosecuted for their actual use of drugs. This approach implicates larger constitutional concerns about the criminalization of a disease like addiction.[43]

---

35. *See* Goodwin, *supra* note 6, at 786 ("Contemporary fetal protectionism includes sanctioning women for refusing cesarean sections, forcibly confining them to bed rest, and instigating prosecutions for otherwise legal conduct.").

36. *See* Cruzan v. Dir., Mo. Dep't of Health, 497 U.S. 261, 278 (1990) ("The principle that a competent person has a constitutionally protected liberty interest in refusing unwanted medical treatment may be inferred from our prior decisions.").

37. *See* Joanne Csete, Richard Pearshouse & Alison Symington, *Vertical HIV Transmission Should Be Excluded from Criminal Prosecution*, 17 REPROD. HEALTH MATTERS 154, 158 (2009) (describing prosecution for child neglect as a result of failure to prevent HIV transmission to unborn child).

38. *See* Paltrow & Flavin, *supra* note 13, at 317–18 (finding that, in a majority of cases identified in the study, no evidence of harm to a fetus or infant was present).

39. *See* Ocen, *supra* note 12, at 1177 ("[P]rosecutions of pregnant women who use drugs rest largely on the *risk* posed by the drug use rather than *actual* harm.").

40. *See* Kontji Anthony, *Police: Woman Earns DUI for Endangering Fetus*, WMC ACTION NEWS 5 (June 30, 2013, 2:30 PM), http://www.wmcactionnews5.com/story/20525700/police-pregnant-woman-earns-dui-for-endangering-fetus (describing arrest of pregnant woman for DUI-child endangerment even though her blood alcohol level was half the legal limit).

41. *See* Ocen, *supra* note 12, at 1180–81 (discussing how pregnancy is used as a "sentencing enhancement"). The underlying rationale for the criminalization of pregnant women could be used to prosecute women for "harm" incurred for much more mundane behavior, like a failure to take prenatal vitamins. Although such prosecutions have not been undertaken to date, it is chilling that they rest on the same underlying rationales. *See id.* at 1171 ("These prosecutions place all pregnant women at risk for criminalization if they engage in behavior that does not assure optimal fetal health, including failing to exercise, eating badly, taking prescribed medication, and failing to follow doctor's orders.").

42. *See id.* at 1167 (stating that states do not typically criminalize drug use standing alone).

43. *See* Khiara M. Bridges, *Race, Pregnancy, and the Opioid Epidemic: White Privilege and the Criminalization of Opioid Use During Pregnancy*, 133 HARV. L. REV. 770, 803–04 (2020) ("The general sense is that punishing any person for having a substance use disorder while pregnant is analogous to pressing charges against a person for having schizophrenia or Tourette syndrome while pregnant: the person would be punished for being pregnant while suffering from a medical condition."). In her article, *Birthing Injustice: Pregnancy as a Status Offense*, scholar Priscilla A. Ocen persuasively

Perhaps most heartbreakingly, a fetal endangerment approach enables prosecutions of women for pregnancy loss through miscarriage or stillbirth.[44] Such prosecution can occur even when the pregnancy loss is unexplained,[45] or the pregnant woman herself testifies to her desire to have the child.[46] These prosecutions treat women like criminals for pregnancy outcomes that are unwanted and outside of their control.[47] And like so many aspects of pregnancy and birth in the United States, Black women are at a much higher risk of experiencing miscarriage and stillbirth,[48] even after controlling for other factors such as access to prenatal care.[49]

Despite the prevalence of prosecutions of pregnant women at the state level, all but two state supreme courts have overturned the convictions of pregnant women under theories of fetal endangerment.[50] The most common reason for overturning the convictions were courts' belief that state legislatures did not intend to include fetuses in the definition of "child" or "victim" in the relevant statute.[51] Similarly, some courts have stated that interpreting these laws to apply to fetal harm would violate pregnant women's due process rights because the women would fail to have reasonable notice regarding potential criminal liability for their actions.[52] Courts have recognized that it is difficult, if not impossible, to differentiate between lawful conduct that nevertheless risks harm to the fetus (such as smoking or eating a poor diet) and the ingestion of drugs.[53] Nonetheless,

---

argues that the specific criminalization of pregnancy in this manner is a violation of the Eighth Amendment's prohibition on cruel and unusual punishment. *See* Ocen, *supra* note 12, 1214–21.

44. *See* Editorial, *When Prosecutors Jail a Mother for a Miscarriage*, N.Y. TIMES (Dec. 28, 2018), https://www.nytimes.com/interactive/2018/12/28/opinion/abortion-pregnancy-pro-life.html.

45. Ocen, *supra* note 12, at 1166.

46. *See* Lynn M. Paltrow & Jeanne Flavin, Opinion, *Pregnant, and No Civil Rights*, N.Y. TIMES (Nov. 7, 2014), https://www.nytimes.com/2014/11/08/opinion/pregnant-and-no-civil-rights.html.

47. *Id.*

48. *See* Jill Wieber Lens, *Miscarriage, Stillbirth, & Reproductive Justice*, 98 WASH. U. L. REV. (forthcoming 2021) (manuscript at 12–14) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3549430 [https://perma.cc/4BTB-MSGV]).

49. *Id.*; GOODWIN, *supra* note 18, at 90.

50. In addition to the Alabama Supreme Court cases discussed above, *supra* note 33, the South Carolina Supreme Court has upheld the application of existing criminal statutes to cases of prenatal drug use. *See* Whitner v. State, 492 S.E.2d 777, 781–82 (S.C. 1997).

51. *See, e.g.*, Reinesto v. Superior Court, 894 P.2d 733, 737–38 (Ariz. Ct. App. 1995) (holding that woman could not be prosecuted under child abuse statute for prenatal heroin use); People v. Morabito, 580 N.Y.S.2d 843, 843, 846–47 (N.Y. City Ct. 1992) (holding that woman could not be charged with criminally endangering the welfare of her child based upon prenatal acts of smoking cocaine); State v. Gray, 584 N.E.2d 710, 711, 713 (Ohio 1992) (holding that woman could not be prosecuted for child endangerment for prenatal substance abuse).

52. *See* State v. Martinez, 137 P.3d 1195, 1197 (N.M. Ct. App. 2006) (holding that prosecution for prenatal cocaine use violated due process because woman "could not have reasonably known that her conduct was criminal"); Collins v. State, 890 S.W.2d 893, 898 (Tex. Ct. App. 1994) (holding that the statute did not give woman sufficient notice that prenatal substance abuse would be considered criminal, and thus her prosecution violated due process).

53. *See* State v. Wade, 232 S.W.3d 663, 665–66 (Mo. Ct. App. 2007) ("One reason why courts have disallowed such criminal charges is that it would be difficult to determine what types of prenatal misconduct should be subject to prosecution. Here, the State argues that criminal liability should arise when an unborn child is injured as a result of the mother's unlawful conduct, such as the use of illegal

reversals of these convictions do little to inhibit the chilling effect on pregnant women who must choose whether they should seek healthcare while not knowing whether they could be successfully prosecuted.[54]

In a troubling trend, however, even when courts find that pregnant women cannot lawfully be prosecuted for harm to the fetus they are carrying, prosecutors continue to bring these charges against women.[55] Thus, zealous prosecutors relentlessly continue to criminalize pregnancy even in the face of judicial decisions specifically finding such criminalization invalid.[56] As a result, the threat of criminal prosecution exists even if the hope that a conviction might be overturned on appeal remains well-founded in most, but not all, jurisdictions.[57]

C. PUNITIVE CIVIL FETAL ENDANGERMENT LAWS

The most common approach to fetal endangerment is actually through the civil, not criminal, system. For instance, in eighteen states, prenatal drug use alone can be used as a basis to terminate parental rights,[58] including in situations where there is no observable negative effect on the infant.[59] Although removing fetal endangerment from the criminal justice system results in pregnant women

drugs. However, the mother is already subject to prosecution for such unlawful activity, and the only purpose of allowing additional pregnancy-related charges would be to protect the interest of the fetus. Given that goal of protection, the logic of allowing such prosecutions would be extended to cases involving smoking, alcohol ingestion, the failure to wear seatbelts, and any other conduct that might cause harm to a mother's unborn child. It is a difficult line to draw and, as such, our legislature has chosen to handle the problems of pregnant mothers through social service programs instead of the court system." (footnote omitted)); *see also* Kilmon v. State, 905 A.2d 306, 311–12 (Md. 2006) (using similar reasoning).

54. *See infra* notes 225–27 and accompanying text.

55. For instance, in 1992, the Florida Supreme Court invalidated the conviction of a woman for delivery of controlled substance to a minor under the theory that the statute did not cover cocaine passing through umbilical cord after birth. Johnson v. State, 602 So. 2d 1288, 1296 (Fla. 1992). Nevertheless, women in Florida continue to be prosecuted for prenatal drug use. *See, e.g.*, Bennett, *supra* note 7 (discussing prosecutions of Florida women for prenatal drug use); Seth Robbins, *DeLand Police Charge Pregnant Woman with Child Abuse After Drug-Use Admission*, DAYTONA BEACH NEWS-J. (June 13, 2018, 1:31 PM), https://www.news-journalonline.com/news/20180612/deland-police-charge-pregnant-woman-with-child-abuse-after-drug-use-admission [https://perma.cc/QH8X-VJ83] (discussing arrest of Florida woman for prenatal drug use but quoting law enforcement spokesperson who recognized that a child abuse charge would "likely not be prosecutable").

56. *See* Grimes, *supra* note 7 (detailing continuing arrests of pregnant women accused of drug use despite clear law—and appellate court decisions—stating that such arrests are illegal). State legislatures, too, continue to pursue criminalization strategies in the face of state supreme court opinions suggesting the unconstitutionality of such an approach. *See* GOODWIN, *supra* note 18, at 31.

57. *See* Bridges, *supra* note 43, at 808 ("However, the fact that most prosecutions or convictions for substance use during pregnancy have not been sustained on appeal should not be taken to mean that state efforts to criminalize substance use during pregnancy are irrelevant or insignificant. Far from it.").

58. *See* Leticia Miranda, Vince Dixon & Cecilia Reyes, *How States Handle Drug Use During Pregnancy*, PROPUBLICA (Sept. 30, 2015), https://projects.propublica.org/graphics/maternity-drug-policies-by-state [https://perma.cc/QFM4-LFP7] (discussing state laws that view drug use during pregnancy as child abuse and therefore serve as a basis for termination of parental rights).

59. *See* Editorial, *Can a Corpse Give Birth?*, N.Y. TIMES (Dec. 28, 2018), https://www.nytimes.com/interactive/2018/12/28/opinion/pregnancy-exclusion-law.html (describing a case of a New Jersey woman whose baby was put in foster care as a result of her refusal to submit to a cesarean section, although the infant was born vaginally and "in full health").

avoiding some of the most draconian aspects of the fetal endangerment laws—including potential incarceration—civil laws also deeply affect women's lives through the temporary or permanent deprivation of their parental rights. For example, Missouri law considers a woman to be a presumptively unfit parent if she has a positive drug screen within eight hours of delivery and has previously (1) been convicted of child abuse or neglect or (2) failed to complete a drug treatment program recommended by the state child welfare agency.[60] Additionally, three states—Minnesota, South Dakota, and Wisconsin—have laws that allow women who use drugs during pregnancy to be involuntarily committed to a treatment program either for the length of the program or the entirety of the pregnancy.[61]

II. EXISTING ARGUMENTS AGAINST THE CRIMINALIZATION OF PREGNANCY

Many scholars have critiqued fetal endangerment laws specifically, and the criminalization of pregnancy generally, on both theoretical and policy grounds. Scholars are overwhelmingly opposed to these practices but base their opposition in a variety of different arguments, including that such laws violate the privacy and reproductive autonomy of women, fail to serve any legitimate penological purpose, create poor health outcomes for women and children, and unfairly and disproportionately harm women of color and poor women. Of course, the multiple ways that fetal endangerment laws can create harm cannot be completely disaggregated from one another because the harms are often mutually reinforcing.[62] Nevertheless, the most common critiques of these laws are explored individually below.

A. FETAL ENDANGERMENT LAWS UNDERMINE REPRODUCTIVE AUTONOMY

It is not a coincidence that the rise of fetal endangerment laws mirrors the increase in abortion restrictions nationwide or that the jurisdictions most likely to have stringent restrictions on abortion are also the states with the most draconian approaches to fetal endangerment.[63] Both reforms focus on the sanctity of fetal life and the devaluation of women's reproductive autonomy.

---

60. MO. REV. STAT. § 211.447 (2018).

61. *See* Miranda et al., *supra* note 58.

62. *See* Fentiman, *supra* note 9, at 540 ("Current 'fetal protection' efforts pack a triple whammy: they undermine women's health, limit women's ability to fully participate in the economic life of the nation, and disproportionately affect the indigent and racial minorities." (footnote omitted)).

63. Both fetal endangerment and abortion-restriction laws normalize and promote the understanding that life begins at conception and that fetal life is thus entitled to individualized protection. *See* Goodwin, *supra* note 6, at 791 (describing the shift in understanding that allows for fetal endangerment laws as "significant as it normalizes treating the unborn as if they were born and alive at the time of injury, which not only implicates abortion policy, but also criminal law and women's other constitutional interests"). Laws that treat the fetus as a person in non-abortion contexts have been tacitly allowed as long as they do not impinge on another constitutional right. *See* Webster v. Reprod. Health Servs., 492 U.S. 490, 504–06 (1989) (holding that a Missouri law's preamble stating life begins at conception does not meaningfully infringe on the right to abortion, and noting that state law protects "unborn children" in other contexts).

In fact, much of the scholarly critique of fetal endangerment laws has focused on how criminalization of pregnant women infringes upon women's constitutional rights.[64] Scholars have argued that fetal endangerment laws "undermine pregnant women's constitutional rights to be treated as equal citizens, to be free from unreasonable searches and seizures, and to be secure in their bodies."[65] Additionally, there are persuasive arguments that forcing women to accept medical intervention that is contrary to their religious beliefs to protect fetal life violates the Free Exercise Clause.[66] Relatedly, scholars have argued that fetal endangerment laws cut against the long-standing legal principle that no one has a duty to rescue another, and particularly that no one is required to use their own body to do so.[67]

Perhaps because most people charged with drafting legislation do not envision themselves or their loved ones being on the receiving end of fetal endangerment laws, these risks to women's autonomy might not seem pressing. In other words, there can be a knee-jerk reaction on the part of privileged sections of the population that pregnant drug addicts are somehow morally deficient and are thus rightfully criminalized. The basic proposition that undergirds these laws, however, is that once women are pregnant, the state may assume control over almost all aspects of their decisionmaking in the interest of promoting fetal health.[68] The potential for dystopian-level state overreach in such a reality is not hard to imagine and, indeed, is not merely a figment of the imagination. Such state action directly implicates multiple constitutional concerns.[69]

B. FETAL ENDANGERMENT LAWS PUNISH ONLY THE RISK OF HARM

Underpinning many fetal endangerment laws is the (apparently) rational argument that prenatal drug use harms fetuses and infants.[70] Lawmakers assert that the prosecution of prenatal drug use is intended, in large part, to avoid that

64. *See, e.g.*, Ocen, *supra* note 12, at 1168–69 ("Indeed, much of the literature on the prosecution of pregnant women . . . explores the ways in which such prosecutions violate women's fundamental rights to reproductive autonomy or breach the privacy that should be inherent in the doctor-patient relationship.").

65. Goodwin, *supra* note 6, at 794.

66. *See* April L. Cherry, *The Free Exercise Rights of Pregnant Women Who Refuse Medical Treatment*, 69 TENN. L. REV. 563, 566–67 (2002).

67. *See* Julie D. Cantor, *Court-Ordered Care — A Complication of Pregnancy to Avoid*, 366 NEW ENG. J. MED. 2237, 2238 (2012).

68. *See* Editorial, *The Future of Personhood Nation*, N.Y. TIMES (Dec. 28, 2018), https://www.nytimes.com/interactive/2018/12/28/opinion/abortion-law-pro-life.html ("A society that embraces a legal concept of fetal personhood would necessarily compromise existing ideals of individual freedom. Americans—even many who oppose abortion—have not considered the startling implications of this idea, even as it has steadily gained strength in the law and in social norms. If a fetus is granted equal rights, women who become pregnant may find their most personal decisions coming under state control.").

69. *See* GOODWIN, *supra* note 18, at 148 ("While promoting fetal health is an important and achievable goal, the impermissible exercise of state authority, which infringes privacy and autonomy and inflicts cruel and unusual punishment, violates fundamental principles of the Constitution.").

70. *See* Lollar, *supra* note 7, at 950 (noting that "few question the judgment" of punishing pregnant women who use drugs, under the theory that such prenatal drug use will cause harm).

harm.[71] Indeed, there are harrowing accounts of neonatal intensive care units filled with "the persistent squealing cry of newborns going through drug withdrawal."[72]

The science behind prenatal drug use and its effects on children's health, however, is surprisingly uncertain. The majority of children born to women who use drugs while pregnant have zero long-term negative effects as a result.[73] And although Neonatal Abstinence Syndrome (NAS) can cause startling symptoms in newborns,[74] it is a treatable condition and there is no reliable research on how—or whether—it affects children in the long run.[75] In fact, there is some research suggesting that the symptoms of a pregnant woman's *withdrawal* from drug use while pregnant actually present the most immediate danger to the health of a fetus.[76]

Thus, there are strong arguments that criminalizing pregnant women's behavior when it does not result in actual harm to fetal or infant life is an inappropriate use of criminal law because it is predicated on a fundamental misunderstanding on the science of pregnancy, addiction, and withdrawal.

C. FETAL ENDANGERMENT LAWS ARE AT ODDS WITH PUBLIC HEALTH GOALS

In addition to the arguments discussed in the previous Sections, both legal and policy scholars have warned about the potential that fetal endangerment laws could create negative public health outcomes. Namely, scholars have argued that the criminalization of pregnant women will disincentivize them to seek prenatal care or treatment for existing addiction.[77]

---

71. *See infra* notes 172–76 and accompanying text.

72. Mallory Yu, Ari Shapiro & Blake Farmer, *In Tennessee, Giving Birth to a Drug-Dependent Baby Can Be a Crime*, NPR (Nov. 18, 2015, 3:22 PM), https://www.npr.org/sections/health-shots/2015/11/18/455924258/in-tennessee-giving-birth-to-a-drug-addicted-baby-can-be-a-crime [https://perma.cc/ETJ8-8HLG].

73. *See* Lollar, *supra* note 7, at 951.

74. *See* Stephen W. Patrick, Robert E. Schumacher, Brian D. Benneyworth, Elizabeth E. Krans, Jennifer M. McAllister & Matthew M. Davis, *Neonatal Abstinence Syndrome and Associated Health Care Expenditures: United States, 2000-2009*, 307 JAMA 1934, 1934 (2012) ("Neonatal abstinence syndrome is characterized by a wide array of signs and symptoms including increased irritability, hypertonia, tremors, feeding intolerance, emesis, watery stools, seizures, and respiratory distress.").

75. *See* Yu et al., *supra* note 72 (quoting Dr. Stephen Patrick of the Vanderbilt Hospital's Neonatal Intensive Care Unit).

76. *See* Am. Coll. of Obstetricians & Gynecologists Comm. on Obstetric Practice & Am. Soc'y of Addiction Med., *ACOG Committee Opinion Number 711: Opioid Use and Opioid Use Disorder in Pregnancy*, 130 OBSTETRICS & GYNECOLOGY e81, e87–88 (2017) [hereinafter *AGOC Committee Opinion Number 711*] ("For pregnant women with an opioid use disorder, opioid agonist pharmacotherapy is the recommended therapy and is preferable to medically supervised withdrawal because withdrawal is associated with high relapse rates [and] case reports raised concern that withdrawal from opioids during pregnancy could lead to fetal stress and fetal death."); José Luis Rementería & Nemesio N. Nunag, *Narcotic Withdrawal in Pregnancy: Stillbirth Incidence with a Case Report*, 116 AM. J. OBSTETRICS & GYNECOLOGY 1152, 1152 (1973).

77. *See, e.g.*, Terplan et al., *supra* note 10 ("[Punitive] strategies may also have the unintended consequence of further alienating [pregnant] women from seeking both obstetrical care and [substance use disorder] treatment, thus exacerbating many problems already faced by families struggling with substance use." (footnotes omitted)).

Many medical and public health organizations warn that fetal endangerment laws are likely to discourage women from obtaining prenatal care out of fear of prosecution.[78] Initial studies suggest that this fear is well-grounded.[79] Critically, prenatal care is not merely one factor in determining health outcomes for infants—it is perhaps the most important factor.[80] Early prenatal care is associated with a host of positive health outcomes, including reducing the incidence of neonatal death, preterm birth, and low birth weight.[81] Studies show that proficient prenatal care may be even more crucial in ensuring fetal health for pregnant women of color[82] who suffer poorer pregnancy outcomes as a result of individual and structural racism.[83]

Similarly, the risk of prosecution prevents pregnant women from seeking care for their own health, including for treatment of drug or alcohol addiction.[84] In fact, women continue to face civil child abuse charges for complying with medically prescribed methadone regimens used to treat opioid addiction.[85] This devastating collateral consequence of seeking treatment sends the message that if women want to escape civil or criminal consequences, they should not seek treatment for their addiction while pregnant at all.

Underlying both the reluctance to seek prenatal care and substance abuse treatment is the fundamental undermining of the doctor–patient relationship that can occur as a result of the criminalization of prenatal drug use.[86] Women who fear

78. *See* Lollar, *supra* note 7, at 991–93, 992 n.371.

79. *See id.* at 997 (discussing how women in Tennessee failed to seek prenatal care or addiction treatment as a result of Tennessee's fetal assault law).

80. *See* GOODWIN, *supra* note 18, at 187 ("[T]he best fetal protection efforts undertaken by pregnant women will involve seeking prenatal services.").

81. *See* Lollar, *supra* note 7, at 993; CRISTINA NOVOA, CTR. FOR AM. PROGRESS, ENSURING HEALTH BIRTHS THROUGH PRENATAL SUPPORT: INNOVATIONS FROM THREE MODELS 2 (2020). https://www.americanprogress.org/issues/early-childhood/reports/2020/01/31/479930/ensuring-healthy-births-prenatal-support [https://perma.cc/953T-WKNZ].

82. *See* Lollar, *supra* note 7, at 993 (noting the importance of adequate prenatal care for Black women because they face infant mortality rates double that of any other racial group in the United States).

83. *See* Nina Martin & Renee Montagne, *Black Mothers Keep Dying After Giving Birth. Shalon Irving's Story Explains Why*, NPR (Dec. 7, 2017, 7:51 PM), https://www.npr.org/2017/12/07/568948782/black-mothers-keep-dying-after-giving-birth-shalon-irvings-story-explains-why [https://perma.cc/D7ZE-5MQC] (noting that Black women in the United States are three to four times more likely to die in childbirth than white women, and exploring the racial discrimination underlying the discrepancy).

84. *See* Goodwin, *supra* note 6, at 832 ("[P]regnant women who suffer from drug addiction may be particularly hesitant to meet with doctors and reticent about providing details exposing the type, extent, and frequency of their drug use.").

85. *See, e.g.*, N.J. Div. of Child Prot. & Permanency v. Y.N., 104 A.3d 244, 246 (N.J. 2014); Elizabeth Brico, *State Laws Punish Pregnant People Just for Seeking Drug Treatment*, TALK POVERTY (Aug. 14, 2019), https://talkpoverty.org/2019/08/14/state-punish-pregnant-drug-treatment [https://perma.cc/52PA-M59P].

86. *See* Goodwin, *supra* note 6, at 795–839 (discussing the myriad ways that fetal endangerment laws pervert and undermine the doctor–patient relationship); Terplan et al., *supra* note 10, at 2 (noting that the automatic notification to child welfare agencies that many states require when a child is born with a positive drug screen "can weaken trust in the patient–clinician relationship" even if no child welfare case is subsequently opened).

that medical professionals are simply extensions of the criminal justice system will reasonably learn to distrust and avoid doctors.[87] This is a negative outcome for public health in any scenario, and it is a particularly troubling outcome in this context because it will not only affect the health of the pregnant woman and the child during the pregnancy[88] but also can have long-term health consequences for both the mother and baby.[89]

Of course, there is a real public health crisis occurring in this country around drug use. The number of babies born with NAS increased 400% in the period between 1999 and 2013.[90] Recognizing the immediacy and scope of the drug addiction and abuse problem—including but not limited to addiction and abuse by pregnant women—does not shield fetal endangerment laws from critique. If anything, it underscores the necessity of finding different, effective interventions that promote public health.[91]

D. FETAL ENDANGERMENT LAWS ARE UNEQUALLY ENFORCED

Finally, critics of fetal endangerment laws correctly point out that the women most likely to be prosecuted under these laws are those who are already marginalized. Although drug use, including drug use in pregnancy, is equally common among different racial and socioeconomic groups in the United States,[92] the prosecution of pregnant women under fetal endangerment laws paints a different picture. States overwhelmingly target poor women and women of color through their fetal endangerment laws. This is no accident but the result of deeply ingrained stereotypes regarding who is—and who is not—a "good mother."[93]

Historically, prosecutions for prenatal drug use have been much more heavily concentrated on women of color.[94] By some estimates, over fifty percent of the

87. *See* Goodwin, *supra* note 6, at 830 ("[P]oor pregnant women trust their medical providers at a significant risk to their liberty and privacy, which is not good for society.").

88. *See id.* ("Driving pregnant patients away from medical care is a form of punishment that harms not only women but undermines the purported state interest in nurturing fetal development.").

89. *See* Terplan et al., *supra* note 10, at 2 (noting that fetal endangerment law and policy "[d]isregard[s] the interconnectedness of maternal and fetal health" and "detracts from widely shared public health objectives, including safe pregnancies and healthy women, children, and families").

90. *AGOC Committee Opinion Number 711*, *supra* note 76, at e82.

91. Although outside the scope of this project, other research has consistently shown that more effective responses to illegal drug use include keeping drug users out of prison and focusing on a combination of treatment and prevention strategies. *See* PEW CHARITABLE TRS., MORE IMPRISONMENT DOES NOT REDUCE STATE DRUG PROBLEMS 6 (2018), https://www.pewtrusts.org/-/media/assets/2018/03/pspp_more_imprisonment_does_not_reduce_state_drug_problems.pdf [https://perma.cc/K2A2-V9CH].

92. *See* Elizabeth A. Evans, Christine E. Grella, Donna L. Washington & Dawn M. Upchurch, *Gender and Race/Ethnic Differences in the Persistence of Alcohol, Drug, and Poly-substance Use Disorders*, 174 DRUG & ALCOHOL DEPENDENCE 128, 133 (2017); Roberts, *supra* note 5, at 1433–34 (noting that research has shown "[l]ittle difference . . . in the prevalence of substance abuse by pregnant women along either racial or economic lines").

93. *See* Ocen, *supra* note 12, at 1170 ("The criminalization of pregnancy as a means of social control is deeply informed by racial stereotypes and class bias regarding motherhood.").

94. *See* Cara Angelotta & Paul S. Appelbaum, *Criminal Charges for Child Harm from Substance Use in Pregnancy*, 45 J. AM. ACAD. PSYCHIATRY L. 193, 201 (2017) (citing studies which suggest Black

prosecutions for drug use in pregnancy have been of Black women.[95] This does not reflect an increased incidence of drug use among Black pregnant women because they use drugs in approximately the same amount as white pregnant women;[96] instead, it indicates the use of fetal endangerment prosecutions in a discriminatory manner. In fact, data suggest that white pregnant women use harmful—but legal—substances, such as tobacco, in higher numbers than pregnant women of color[97] and are more likely to seek and acquire prescription medications during pregnancy.[98] Nevertheless, the disproportionate targeting of women of color reveals that racialized ideas of mothering and addiction played a large role in the historical development of fetal endangerment laws.[99]

Due in part to the racial makeup of most opioid users, more white women are being prosecuted under fetal endangerment laws than in the past.[100] But here again, it is not all pregnant women who use drugs that are being prosecuted; it is poor, white women.[101] Prosecutors enforcing Tennessee's short-lived fetal assault law targeted almost exclusively poor women.[102] Thus, socioeconomic class has, in some cases, become as much a determinant of who is prosecuted as race has historically.[103]

Women whose identities expose them to multiple, overlapping systems of discrimination and oppression are even more susceptible to criminalization for

---

women are disproportionately reported to authorities for prenatal drug use). *But see* Bach, *supra* note 23, at 851 (discussing the focus of prosecutions for poor, white women living in eastern Tennessee).

95. *See* Paltrow & Flavin, *supra* note 13, at 310–11.

96. *See* Ira J. Chasnoff, Harvey J. Landress & Mark E. Barrett, *The Prevalence of Illicit-Drug or Alcohol Use During Pregnancy and Discrepancies in Mandatory Reporting in Pinellas County, Florida*, 322 NEW ENG. J. MED. 1202, 1204 (1990) (finding that Black women were as much as ten times more likely than white women to be reported to authorities for prenatal drug use although the frequency of positive tests between Black and white women at their first prenatal visit differs only by 1.3%).

97. Ocen, *supra* note 12, at 1174.

98. *See* AM. COLL. OF OBSTETRICIANS & GYNECOLOGISTS COMM. ON HEALTH CARE FOR UNDERSERVED WOMEN, COMMITTEE OPINION NUMBER 538: NONMEDICAL USE OF PRESCRIPTION DRUGS 2 (2012) ("White women are more likely to abuse prescription pain relievers than women of any other race or ethnicity.").

99. *See* Roberts, *supra* note 5, at 1432–36, 1476.

100. *See* Bridges, *supra* note 43, at 776 ("[T]he demographics of the more recent arrests and prosecutions of women who use substances while pregnant are in keeping with the demographics of the opioid epidemic: as white people predominate among those struggling with opioid use, misuse, and dependence, white women predominate among those who have faced criminal charges for opioid use during pregnancy." (emphasis omitted)); Lollar, *supra* note 7, at 1002 ("Poor white women who use drugs while expecting are now subject to a similar moral condemnation and criminal punishment as their Black peers have been for approximately forty years.").

101. *See* Lollar, *supra* note 7, at 1000 ("No empirical or anecdotal evidence appears to exist documenting the prosecution of any middle- to upper-class women for these crimes. However, decades of evidence support the conclusion that only those of lesser financial means are ending up in the criminal justice system for their behavior while pregnant.").

102. *See* Bach, *supra* note 23, at 851 (noting that almost all of the women prosecuted under the law had one or more indicators of poverty, and considering the location of the prosecutions, finding it was likely that all the women prosecuted were indigent).

103. *See* Goodwin, *supra* note 6, at 786 ("Frequently class matters as much as race, meaning African American and Latina women no longer serve as the default targets of fetal protection laws . . . .").

alleged fetal harm.[104] This increased criminalization risk further undermines the willingness of marginalized pregnant women to seek prenatal care or treatment for any underlying addiction issues. Thus, not only do fetal endangerment laws result in worse outcomes for pregnant women and for babies, but marginalized women are also the ones most likely to bear the brunt of these negative outcomes.

In the end, critics of fetal endangerment laws argue that these laws are little more than "symbolic gestures,"[105] which do little to address the concern that supposedly animates them—protection of children. The following Part empirically engages this argument to answer whether such laws are an effective method of promoting the health of infants.

III. EMPIRICAL ANALYSIS OF FETAL ENDANGERMENT LAWS

To examine the premises underlying the continued use of fetal endangerment laws—that these laws protect fetuses and infants from danger and exposure to harmful activities—we conduct an empirical analysis of unprecedented depth and breadth. In Section III.A, we examine a series of three datasets that can definitively answer the question of how fetal endangerment laws affect pregnancies, fetuses, and infants. We then, in Section III.B, analyze the effect of Tennessee's fetal endangerment law on pregnancy, fetal, and infant outcomes—most importantly fetal and infant death. Following that, in Section III.C, we estimate a series of regression models that can isolate the effect of Tennessee's law from other factors and conclude our analysis, in Section III.D, using innovative synthetic control techniques to provide additional evidence on the effect of Tennessee's law.

Given our hypotheses about fetal endangerment laws, we analyze the effect of Tennessee's fetal endangerment law. Tennessee's law became effective on April 28, 2014, and expired on June 30, 2016.[106] Although, as noted above, other states have criminalized potentially harmful behavior during pregnancy in various ways, Tennessee remains the only state to take such an explicit stance on the issue.[107] And Tennessee's specific statute instantiating its fetal endangerment law offers a nearly ideal setting in which to empirically evaluate the effect of this law.[108]

---

104. *See* Terplan et al., *supra* note 10, at 2 ("[T]he reporting of pregnant women to state authorities as well as prosecution and incarceration in the US has disproportionately affected [] low-income women of color.").

105. *See* Fentiman, *supra* note 9, at 541.

106. *See* TENN. CODE ANN. § 39-13-107 (2014) (effective until July 1, 2016).

107. *See* Danielle N. Atkins & Christine Piette Durrance, *State Policies That Treat Prenatal Substance Use as Child Abuse or Neglect Fail to Achieve Their Intended Goals*, 39 HEALTH AFF. 756, 757 (2020) (explaining that, although "other states have policies that consider prenatal substance use as equivalent to child abuse or neglect," Tennessee is the only state to "formally criminalize prenatal substance misuse legislatively"); *see also* Bach, *supra* note 23.

108. Other states' approaches do not offer the sharp beginning and ending dates that Tennessee's statute provides. With a clear period in which the law applies and does not, empirically evaluating the law becomes much easier and the results much clearer. The more nebulous start dates of prosecution under other states' more general criminal laws inhibit testing these laws' effects because it is unclear when they actually became applicable to pregnant women in general. These other laws are certainly important, and we do not mean to suggest otherwise. However, for the purposes of our empirical analysis, we focus on Tennessee and its fetal endangerment law.

Examining the effect of a law in a single state nevertheless presents important analytical challenges.[109] To address these challenges and evaluate Tennessee's fetal endangerment law, we present our analysis in several stages. We begin by examining changes over time in various health outcomes in Tennessee. We then estimate a series of regression models that can isolate the effect of Tennessee's law from other factors. We conclude our analysis by using innovative synthetic control techniques to provide additional evidence on the effect of Tennessee's law. We reserve a discussion of the legal implications of these results for Part IV.

A. DATA, MEDICOLEGAL CONTEXT, AND HYPOTHESES

The data examined here come from the National Vital Statistics System, which is maintained by the Centers for Disease Control and Prevention (CDC).[110] We focus on three separate datasets, each covering the period between 2005 and 2017: (1) all births in the United States, (2) all deaths of fetuses in the United States, and (3) all deaths in the United States.[111] We focus only on infant deaths in this dataset. Although publicly available versions of these datasets exist, we analyze the restricted-use versions. These versions contain information on the location of individuals, which is necessary to isolate the impact of state laws.[112] Importantly, all the datasets we examine here are the same ones that the CDC used in calculating official birth and death statistics for the United States.[113] Using the universe of official data—as opposed to samples of official or unofficial data—allows us to generate unprecedented insight into the role of fetal endangerment laws without the concern that our results may be driven by quirks in the data or in the sampling process.

1. Data on All Births in the United States

Beginning with the dataset on births in the United States, these data come directly from official birth certificates.[114] Individual states gather all of the information contained in each birth certificate and report it to the CDC, which then aggregates the information into a comprehensive database.[115] From this database, we gathered

109. *See* Nikolay Doudchenko & Guido W. Imbens, *Balancing, Regression, Difference-in-Differences and Synthetic Control Methods: A Synthesis* 1–2, 6, 22–24 (Nat'l Bureau of Econ. Research, Working Paper No. 22791, 2016), https://www.nber.org/papers/w22791.pdf [https://perma.cc/7RUY-PXDN] (discussing problems associated with analyzing a legal change in a single state, and applying methodological solutions to those problems).

110. *National Vital Statistics System*, CTRS. FOR DISEASE CONTROL & PREVENTION: NAT'L CTR. FOR HEALTH STAT., https://www.cdc.gov/nchs/nvss/index.htm [https://perma.cc/U5NN-ZT8L] (last visited Nov. 23, 2020).

111. The 2017 datasets were those most recently available at the time we requested access from the National Center for Health Statistics.

112. All datasets were accessed after receiving permission from the National Center for Health Statistics. Additionally, the institutional review board at the University of Alabama reviewed and approved our use of these datasets and all protocols for analyzing them. Documentation from the National Center for Health Statistics and Institutional Review Board is on file with the authors.

113. *See, e.g.*, Danielle M. Ely & Anne K. Driscoll, *Infant Mortality in the United States, 2017: Data from the Period Linked Birth/Infant Death File*, 68 NAT'L VITAL STAT. REP. 1, 1–2 (2019) (using the birth and infant death datasets examined here to calculate official U.S. statistics).

114. *See Birth Data*, CTRS. FOR DISEASE CONTROL & PREVENTION: NAT'L CTR. FOR HEALTH STAT., https://www.cdc.gov/nchs/nvss/births.htm [https://perma.cc/D3Q8-RB63] (last visited Nov. 24, 2020).

information on the following relevant outcomes: the length of gestation, five-minute Apgar score, and whether the mother received prenatal care. The Apgar score is a "scoring system [that] provide[s] a standardized assessment for infants after delivery."[116] An Apgar score, calculated from five different components that are associated with infant health, can vary between 0 and 10 (with higher scores indicating healthier infants).[117] Based on research tying Apgar scores to infant health outcomes,[118] we include it in our analysis.

Although the data do not include information on the infants' long-term health outcomes, medical research has established a link between length of gestation and long-term outcomes.[119] Shorter gestation times are commonly associated with poorer health outcomes for infants.[120] Accordingly, we analyze gestation as an indicator of more serious health problems that infants may suffer in the future.[121] Similarly, the five-minute Apgar score can also indicate the presence of serious health consequences in infants.[122]

In contrast to these two measures of health outcomes, whether a mother received prenatal care is not itself a health outcome. However, many scholars and organizations have argued that fetal endangerment laws ultimately cause more harm than good because they discourage mothers from obtaining healthcare when needed.[123] We evaluate whether a mother received prenatal care during her pregnancy as an indicator of her engagement with the healthcare system. If mothers systematically receive less prenatal care following the passage of a fetal endangerment law, that would support the argument that these laws discourage them from obtaining care when they need it.

2. Data on All Fetal Deaths in the United States

Examining pregnancy- and birth-related outcomes can offer important insight into the overall health of infants. To fully understand the effect of fetal endangerment

115. *See id*.

116. Am. Coll. of Obstetricians & Gynecologists Comm. on Obstetric Practice & Am. Acad. of Pediatrics Comm. on Fetus & Newborn, *The Apgar Score*, 136 PEDIATRICS 819, 819 (2015) [hereinafter *The Apgar Score*].

117. *See id*. at e52–53.

118. *See* Fei Li, Ting Wu, Xiaoping Lei, Hao Zhang, Meng Mao & Jun Zhang, *The Apgar Score and Infant Mortality*, 8 PLOS ONE e69072, e69072 (2013) ("The Apgar score system has continuing value for predicting neonatal and post-neonatal adverse outcomes . . . .").

119. *See, e.g*., Am. Coll. of Obstetricians and Gynecologists Comm. on Obstetric Practice Soc'y for Maternal-Fetal Med., *Committee Opinion Number 579: Definition of Term Pregnancy*, 122 OBSTETRICS & GYNECOLOGY 1139, 1139 (2013) ("The frequency of adverse neonatal outcomes is lowest among uncomplicated pregnancies delivered between 39 . . . and 40 6/7 weeks of gestation.").

120. *See* Elaine M. Boyle, Gry Poulsen, David J. Field, Jennifer J. Kurinczuk, Dieter Wolke, Zarko Alfirevic & Maria A. Quigley, *Effects of Gestational Age at Birth on Health Outcomes at 3 and 5 Years of Age: Population Based Cohort Study*, 344 BRIT. MED. J. e896, e896–99 (2012) (explaining the poor health outcomes associated with shorter gestation periods).

121. Throughout our analysis, we consider length of gestation and whether an infant weighs less than 2,500 grams at birth. The dataset does not include actual birth weight.

122. *See The Apgar Score*, *supra* note 116, at 821 ("[A] low 5-minute Apgar score clearly confers an increased relative risk of cerebral palsy, reported to be as high as 20- to 100-fold over that of infants with a 5-minute Apgar score of 7 to 10.").

123. *See supra* Section II.C (discussing these arguments).

laws, however, we extend our analysis to include an examination of the ultimate health indicator: death. We focus on fetal deaths occurring after twenty weeks of gestation for two reasons. First, not all states report fetal deaths that occur prior to twenty weeks of gestation.[124] Second, fetal deaths after twenty weeks are often treated differently than those before,[125] as indicated by the use of the term "stillbirth" instead of "miscarriage" to refer to the former.[126] The CDC maintains a dataset on fetal deaths that closely parallels the data on births,[127] and using these data, we calculate the total number of fetal deaths in each state and county.

3. Data on All Infant Deaths in the United States

Though fetal deaths are certainly a salient target of fetal endangerment laws, they do not by themselves capture the full effect of these laws. Accordingly, we consider deaths of live-born infants in addition to fetal deaths.[128] Information on these deaths comes from the CDC's mortality data. These data, in turn, come from state submissions based on death certificates.[129] We focus primarily on infant deaths occurring after a live birth but before the twenty-eighth day of life.[130]

Collectively, the data we analyze here represent multiple measures of health (and death) that fetal endangerment laws may directly impact. And importantly, the data provide the universe of outcomes so that our analysis does not suffer from sampling bias or other problems associated with incomplete information. Given these data and the medicolegal context in which our analysis occurs, we can develop straightforward hypotheses about the effect of fetal endangerment laws on our various measures of fetal and infant health based on the arguments advanced by proponents and opponents of those laws.

Advocates of fetal endangerment laws presuppose a positive effect on fetal and infant health outcomes.[131] Indeed, they argue that preventing in utero exposure to various drugs will reduce the incidence of fetal harm and thereby decrease fetal

124. *See Fetal Deaths*, CTRS. FOR DISEASE CONTROL & PREVENTION: NAT'L CTR. FOR HEALTH STAT., https://www.cdc.gov/nchs/nvss/fetal_death.htm [https://perma.cc/N4EG-5SYN] (last visited Nov. 24, 2020).

125. *See, e.g.*, Alexis J. Hure, Jennifer R. Powers, Gita D. Mishra, Danielle L. Herbert, Julie E. Byles, & Deborah Loxton, *Miscarriage, Preterm Delivery, and Stillbirth: Large Variations in Rates Within a Cohort of Australian Women*, 7 PLOS ONE e37109, e37109–10 (2012) (defining miscarriage as "spontaneous abortion before 20 weeks gestation" and categorizing miscarriages differently than stillbirths).

126. *See Fetal Deaths*, *supra* note 124.

127. *See Linked Birth and Infant Death Data*, CTRS. FOR DISEASE CONTROL & PREVENTION: NAT'L CTR. FOR HEALTH STAT., https://www.cdc.gov/nchs/nvss/linked-birth.htm [https://perma.cc/4392-VESG] (last visited Nov. 24, 2020).

128. The key distinction between a fetal death and infant death is that the former occurs prior to birth and the latter occurs after birth.

129. *See Linked Birth and Infant Death Data*, *supra* note 127.

130. In an unreported analysis, we also consider infant deaths that occur before a child's first birthday. The results of this analysis are not meaningfully different than those reported below for deaths in the first month of life, so we exclude them in the interest of succinctness.

131. *See infra* Part IV (discussing the reasons that states offer in support of their fetal endangerment laws).

death rates.[132] Extending these arguments implies that pregnancies free of drugs should lead to healthier infants, thus improving infant outcomes. In terms of the variables we analyze, if proponents of these laws are correct in their assertions, then fetal endangerment laws should reduce death rates of both fetuses and infants, increase gestation length, and increase Apgar scores. Although proponents of fetal endangerment laws often do not take an explicit position on the effect of these laws on prenatal care, their implicit stance is that these laws do not affect the willingness or ability of mothers to access prenatal care.

On the other hand, opponents to fetal endangerment laws assert, based on existing evidence, that these laws discourage mothers with addiction problems from accessing healthcare, thereby resulting in pregnancies with more health problems. When women forego standard prenatal care or refuse to access healthcare for specific injuries and illnesses out of fear of prosecution, opponents argue that their fetuses ultimately suffer greater harms than those associated with in utero drug exposure. In terms of the variables we analyze, if opponents of these laws are correct, women will systematically use less prenatal care; gestation length and Apgar scores will decrease; and fetal and infant mortality will increase. All of these problematic outcomes are associated with decreased access to healthcare during pregnancy as noted above.

Table 1 summarizes the testable hypotheses that can be distilled from the arguments of both opponents and proponents of fetal endangerment laws. These hypotheses serve as the basis for our empirical analysis, the first part of which is detailed in the next Section.

Table 1: Hypotheses Based on the Arguments of Proponents and Opponents of Fetal Endangerment Laws

Outcome	Predicted Effect of Fetal Endangerment Law if Proponents are Correct	Predicted Effect of Fetal Endangerment Law if Opponents are Correct
Probability of Receiving Prenatal Care	No Effect	–
Gestation Length	+	–
Apgar Score	+	–
Fetal Death Rate	–	+
Infant Death Rate	–	+

132. *See infra* notes 172–76 and accompanying text.

B. EXAMINING THE EFFECT OF TENNESSEE'S FETAL ENDANGERMENT LAW ON PREGNANCY, FETAL, AND INFANT OUTCOMES

We examine various health outcomes in Tennessee to begin our empirical analysis. Although an analysis of outcomes in a single state cannot by itself establish the causal effect of a fetal endangerment law on those outcomes, it is nevertheless useful to obtain a broad understanding of the role this law plays. It can also provide important context for more sophisticated analyses.[133] Related to the question of whether Tennessee's fetal endangerment law discouraged pregnant mothers from receiving prenatal care, Figure 1 reports the proportion of mothers who received such care in Tennessee before, during, and after the implementation of Tennessee's fetal endangerment law. In particular, Figure 1 reports by month the proportion of mothers giving birth in Tennessee who received prenatal care.[134]

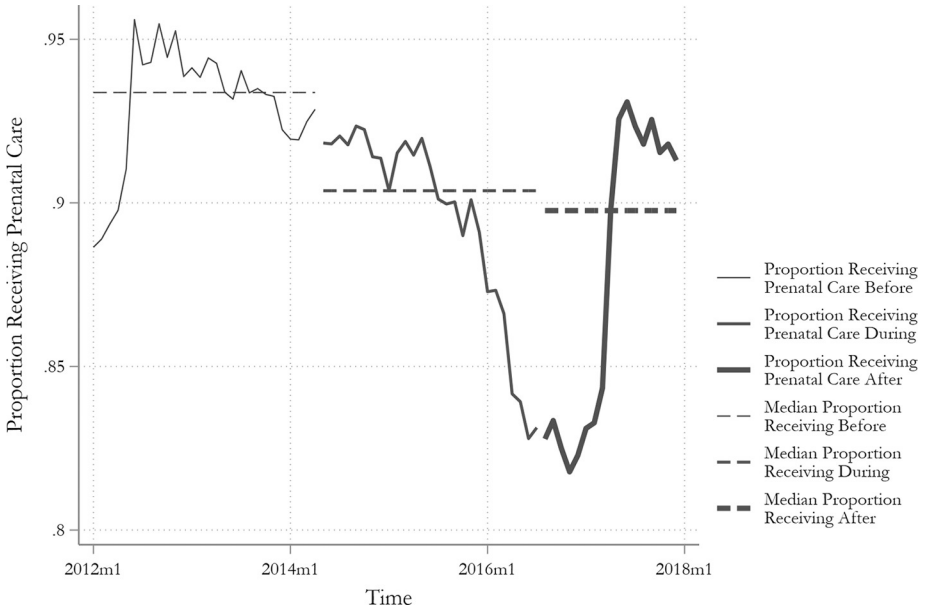
Here, and for other variables throughout our analysis, we examine the receipt of prenatal care as reported at the time of birth because our data come from birth certificates, which are naturally issued at the time of birth.[135] This means that the effect of Tennessee's fetal endangerment law may appear to be delayed, because some mothers who refused prenatal care as a result of the law would not have reported the absence of this care until they gave birth. Mothers (and their fetuses and infants) who were subject to the fetal endangerment law for the entire term of their pregnancies do not appear in the data until five to seven months after the implementation of Tennessee's law. On the other hand, if Tennessee mothers anticipated the passage of Tennessee's fetal endangerment law, they may have preemptively foregone prenatal care, which would show up as a decline in prenatal care prior to the adoption of the fetal endangerment law. Both of these time factors will be reflected in the data on prenatal care in Tennessee.

133. In the following Sections, we present a regression analysis and synthetic control approach that can address these shortcomings and provide evidence of a causal effect. *See infra* Sections III.C–D.

134. For example, if 100 mothers gave birth in January 2014, and 92 of them reported having received prenatal care during their pregnancies, then the January 2014 proportion for Tennessee would be reported as 0.92.

135. We do not lag our variables to "correct" for the delay between the failure to receive prenatal care and birth because doing so requires numerous assumptions about when mothers should have received prenatal care, when a baby would have been born, and other pregnancy-related factors. Many of these factors themselves may be affected by fetal endangerment laws, so any attempt to "correct" for the time delay may induce a salient source of bias. Instead of risking the introduction of bias into our analysis, we report prenatal care (and the other variables examined here) at the time they are reported in the official statistics—at the time of birth.

Figure 1: Prenatal Care Before, During, and After Tennessee's Fetal Endangerment Law



Turning to Figure 1, the proportion of mothers receiving prenatal care varied widely during Tennessee's experimentation with a fetal endangerment law. Figure 1 includes three separate lines showing the monthly proportion of mothers receiving prenatal care: (1) prior to the implementation of Tennessee's fetal endangerment law, (2) during the time that law was in effect (May 2014 through June 2016),[136] and (3) after the law lapsed under its sunset provision. Because the proportion of mothers receiving prenatal care trends varied monthly, Figure 1 also reports the median proportion of mothers receiving care with separate dashed lines for each of the three periods around the implementation of Tennessee's fetal endangerment law.

Figure 1 demonstrates a sharp decline in the receipt of prenatal care around the time the fetal endangerment law was implemented. Before its implementation, approximately ninety-four percent of women giving birth in Tennessee received some prenatal care during their pregnancies. This percentage began to decline around the time the fetal endangerment law was passed and plummeted about a year after the law became effective. Indeed, at its lowest point, the percentage of mothers receiving prenatal care was around eighty-three percent, an approximately eleven-point decline from the pre-implementation period. Troublingly, but not surprisingly, the proportion of mothers receiving care did not begin to recover to pre-implementation levels until approximately one year after the law had lapsed. And although the proportion

136. Technically, the law went into effect on April 28, 2014. *See* TENN. CODE ANN. § 39-13-107 (2014) (effective until July 1, 2016). However, because that date is near the end of April and we examine monthly data, we define the law as having gone into effect on May 1, 2014.

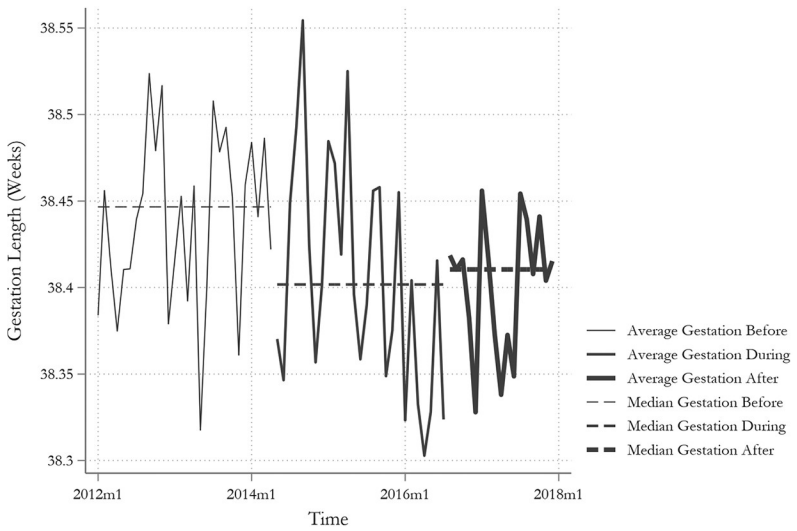
increased after the law ceased to be enforceable, it had not recovered to pre-implementation levels by the time our data ended in 2018. Furthermore, the median level of care after the sunset of the law had not even reached the median level of care while the law was in effect; this is a testament to the pervasive and long-term effects of this law.

Importantly, the failure to obtain prenatal care can put both mother and fetus (and later infant) at substantial risk for health complications and death. Although the remainder of our analysis focuses on some of these risks, we want to be careful to note that no dataset is complete. We cannot examine all potential negative consequences of failing to obtain prenatal care, and it is important to emphasize that a drop in prenatal care by itself is cause for substantial concern given the myriad medical studies connecting prenatal care to better health outcomes.[137]

With respect to birth- and pregnancy-related outcomes that we can examine, Figure 2 reports the monthly average gestation length among Tennessee mothers (Panel A) and the monthly average five-minute Apgar score among Tennessee infants (Panel B).[138] Like before, because the mean gestation length and Apgar score varied monthly, we include dashed lines denoting the before, during, and after implementation medians.

Figure 2: Pregnancy- and Birth-Related Outcomes Before, During, and After Tennessee's Fetal Endangerment Law

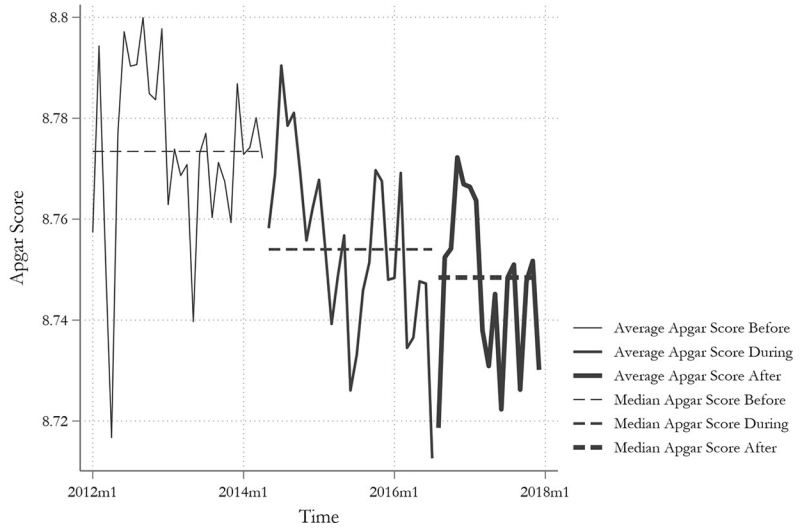
Panel A: Average Gestation Length



137. *See, e.g.*, NOVOA, *supra* note 81 (comparing the health condition of infants born with mothers who received prenatal care with infants whose mothers did not receive any such care).

138. As with prenatal care, Apgar scores and gestation length are reported at the time of birth. Therefore, mothers (and the associated fetuses and infants) subject to the fetal endangerment law for the entire duration of their pregnancy do not appear until seven to eight months after the implementation of the fetal endangerment law.

Panel B: Average Five-Minute Apgar Score



Turning first to Panel A and gestation length, gestation varied more noticeably than the proportion of mothers receiving prenatal care. However, the median lines in Figure 2 indicate that gestation length decreased following the implementation of Tennessee's fetal endangerment law. Gestation became more variable, but the trend toward shorter gestation length becomes apparent about halfway through the period that the fetal endangerment law was in place. This shorter gestation length persisted after the law met its sunset period perhaps because mothers giving birth in the seven to ten months following the lapse of the law were subject to its provisions for part of their pregnancies. Additionally, fetal endangerment laws may have a chilling effect on mothers, such that their trust in the healthcare and legal systems is undermined for years, even after the fetal endangerment law had lapsed.

With respect to Apgar scores and Panel B, an Apgar score is assigned five minutes after birth and indicates the general health of the newborn—higher Apgar scores are associated with healthier newborns.[139] Apgar scores in Tennessee declined several months after the implementation of the fetal endangerment law. Although similar declines prior to the passage of the law occurred in Tennessee, the post-implementation decline persisted for much longer at lower levels. And even after the fetal endangerment law lapsed, Apgar scores in Tennessee did not return to pre-implementation levels. This continued depression in Apgar scores parallels the continued impact of the fetal endangerment law on prenatal care seen in Figure 1.

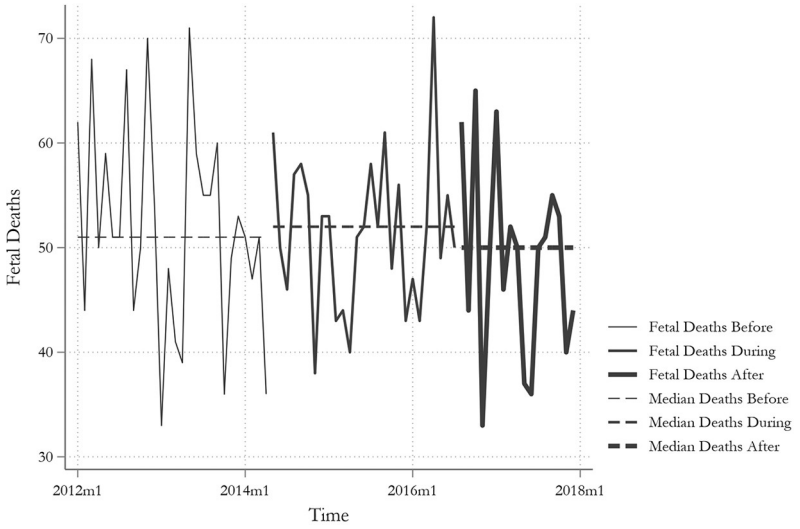
The decline in pregnancy- and birth-related outcomes is inconsistent with the spirit of fetal endangerment laws, which are designed to promote the welfare of the unborn.

139. *See* Am. Coll. of Obstetricians & Gynecologists Comm. on Obstetric Practice, *supra* note 119.

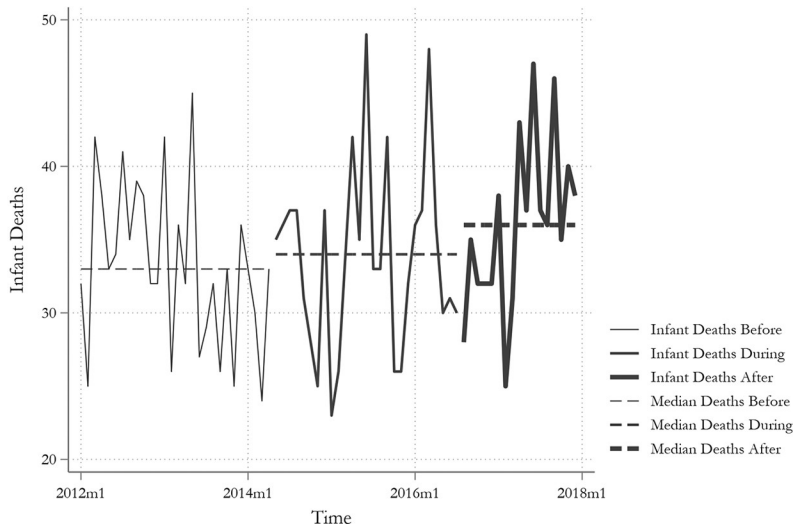
These laws, however, do not focus on the well-being of fetuses but rather on outcomes more detrimental to them such as death. Examining fetal and infant deaths can elucidate whether these laws serve their intended function of protecting the unborn and youngest members of society from harm. Figure 3 reports, by month, the number of fetal deaths (Panel A) and number of infant deaths (Panel B) in Tennessee.

Figure 3: Fetal and Infant Deaths Before, During, and After Tennessee's Fetal Endangerment Law

Panel A: Number of Fetal Deaths



Panel B: Number of Infant Deaths



Focusing first on Panel A, the number of fetal deaths exhibits substantial variability from month to month, much like gestation length. However, examining the median number of fetal deaths before, during, and after the implementation of Tennessee's fetal endangerment law reveals a pattern similar to pregnancy- and birth-related outcomes. Fetal deaths increased when the fetal endangerment law was effective. Fortunately, the number of fetal deaths decreases following the lapse in this law—similar to the eventual increase in gestation length in Figure 2.

The same cannot be said of the number of infant deaths in Tennessee as Panel B indicates. The number of infant deaths increased following the adoption of the fetal endangerment law, and this increase persisted following the demise of that law. Again, the number of infant deaths exhibits substantial variability, but the general increase in infant deaths following the implementation of the fetal endangerment law is visible in the lines denoting the median number of deaths.

The decrease in access to prenatal care and the decline in pregnancy- and birth-related outcomes are inconsistent with the spirit of Tennessee's fetal endangerment law. Not only are these outcomes inconsistent, the increase in fetal and infant deaths around the time the law was passed directly contradicted such law's stated purpose. An increase in the number of deaths in the population that a law seeks to protect is in no way consistent with the stated goal of protecting the same population. Rather, such an increase is best characterized as *perverse*—in that it represents the exact opposite of the goal sought to be achieved.

In interpreting the results presented in this Section, however, it is important to note that they cannot by themselves establish that Tennessee's fetal endangerment law *caused* these perverse effects. For example, it may simply be that other factors—which operated at the time the law was passed—worked to increase fetal and infant deaths, discourage the receipt of prenatal care, and undermine gestation length and Apgar scores. Without additional information, we cannot rule out the possibility that these other potential factors were responsible for the problematic shifts in the pregnancy-, birth-, fetal-, and infant-related outcomes detailed above. However, we are not suggesting that isolating the causal impact of the fetal endangerment law is impossible; the next Section details the additional information and sophisticated empirical techniques that we use to examine this causal effect.

C. REGRESSION ANALYSIS

The fundamental problem with the above analysis in establishing the causal effect of the fetal endangerment law is the absence of a valid counterfactual. For example, consider the prenatal care results reported in Figure 1. At first glance, this figure indicates a decline in the proportion of mothers receiving prenatal care during and after the implementation of Tennessee's fetal endangerment law. Under the assumption that this proportion would have remained stable absent the passage of this law, the effect is obvious—the law reduced mothers' use of prenatal care. However, if the proportion of mothers would have *declined even further* without the implementation of the fetal endangerment law, then the law could be

considered a success. The problem with drawing strong conclusions solely from the information presented above is that we cannot know with certainty the proportion of mothers that would have received prenatal care had Tennessee never passed its fetal endangerment law—that is, we lack a valid counterfactual. The pattern of effects may suggest that the fetal endangerment law was responsible for the detrimental effects on mothers, fetuses, and infants. But to establish that this was truly the case, we rely on econometric methods specifically designed to isolate the causal effects of policy interventions.

We begin by estimating a series of difference-in-differences regression models. As demonstrated by prior work, these models effectively create a valid counterfactual against which to compare what actually happened in Tennessee.[140] By doing so, these models can isolate the role of the fetal endangerment law from other confounding factors and thereby produce estimates of the causal effect of this law on the outcomes described above.[141] Specifically, difference-in-differences models compare trends in the relevant outcomes in Tennessee with trends in the same outcomes in other states. This allows the models to account for how the outcomes would have trended over time resulting from changes in the many other factors that influence the relevant outcomes, thus isolating the role of Tennessee's fetal endangerment law. In other words, these models effectively "net out" the effect of unobservable factors that may influence maternal, fetal, and infant outcomes.[142] Thus, we can estimate the causal effect of Tennessee's fetal endangerment law.

More technically, the difference-in-differences models we estimate are a specific type of regression model, which takes a specific form to effectively net out the impact of various other confounding factors.[143] The dependent variable in these models is one of the following: the proportion of mothers receiving prenatal care, the average gestation length,[144] the average Apgar score, the number of fetal

140. Esther Duflo, winner of the 2019 Nobel Prize in Economics, and others have evaluated difference-in-differences models, identifying several key problems that these models must address if they are to produce reliable estimates of causal effects. *See* Marianne Bertrand, Esther Duflo & Sendhil Mullainathan, *How Much Should We Trust Differences-in-Differences Estimates?*, 119 Q.J. ECON. 249, 249–52 (2004). The analysis presented in this Article addresses all of those issues.

141. *See* Benjamin J. McMichael, *Healthcare Licensing and Liability*, 95 IND. L.J. 821, 859–62 (2020) (detailing the ability of difference-in-differences models to isolate causal effects).

142. *See* Michael D. Frakes, *The Surprising Relevance of Medical Malpractice Law*, 82 U. CHI. L. REV. 317, 365 (2015).

143. Our regression model has the following general specification: $Y_{cst} = \beta(\text{Fetal Harm Law}_{st}) + \delta_c + \tau_t + \varepsilon_{cst}$. In this model, c indexes counties, s indexes states, and t indexes time as measured in months. The dependent variable, Y, is one of the five outcome variables described below. The variable, *Fetal Harm Law*, is an indicator variable that equals one in Tennessee during the time its fetal endangerment law was effective. The vectors δ_c and τ_t include county and month fixed effects.

144. In this Section, we define gestation length in terms of months instead of weeks. The two definitions are mathematically equivalent; we change this definition solely to improve the readability of the results reported below.

deaths per 1,000 births, or the number of infant deaths per 1,000 births.[145] The first three variables are exactly as described above;[146] we simply extend our analysis to consider these variables outside of Tennessee. The last two variables are slightly different versions of the same variables examined above. Focusing on the number of fetal and infant deaths per 1,000 births allows us to standardize these death measures and better compare them across different geographic areas. To control for as many potential confounding factors as possible, all of these variables are defined at the county level instead of the state. For example, instead of examining outcomes across the entire state of Tennessee, we examine each of these five outcomes in each of the ninety-five counties within Tennessee. The same is true for the 159 counties in Georgia and in all of the other states included in our analysis. Doing so allows us to better control for county-specific factors that may influence the outcomes of interest.

The independent variables of interest are an indicator variable that equals one when a birth occurred in Tennessee at a time when the fetal endangerment law was effective, and another that equals one when a birth occurred in Tennessee at a time after such law had lapsed. The omitted category is the entire period prior to the implementation of Tennessee's fetal endangerment law. This period therefore serves as the baseline for comparison. All coefficient estimates can be interpreted as representing changes from this pre-implementation baseline. Based on this construction, the coefficient estimates for these variables represent the causal effect of the fetal endangerment law. Importantly, in addition to these variables of interest, every model includes a full set of indicator variables for individual counties and months. The county variables control for observed and unobserved characteristics of individual counties. Counties may differ in their health outcomes for many reasons other than a fetal endangerment law, and including these indicator variables allows the models to net out these other factors. Month fixed effects control for any linear or nonlinear trends in health outcomes over time. The county and month variables absorb much of the idiosyncratic variation present in the health outcomes we examine, and therefore allow the models to isolate the role of the fetal endangerment law. The inclusion of these county and month variables obviates the need for many other control variables because they better control for confounding factors than generic variables for various observable factors.[147]

145. We calculate fetal deaths per 1,000 births by dividing the number of fetal deaths in a given month by the number of births in that month and multiplying by 1,000. Fetal deaths include all deaths of fetuses occurring after twenty weeks of gestation. We calculate infant deaths per 1,000 births by dividing the number of infant deaths in a given month by the number of births in the preceding month and multiplying by 1,000. Infant deaths include all live-born infants who died within twenty-eight days of birth. Based on this definition, the preceding month's number of births is the correct denominator.

146. *See supra* Section III.A.1.

147. Throughout the analysis, we estimate ordinary least squares regression models, and we calculate standard errors clustered at the state level to correct for serial autocorrelation.

Figure 4: Regression Results for Tennessee's Fetal Endangerment Law[148]

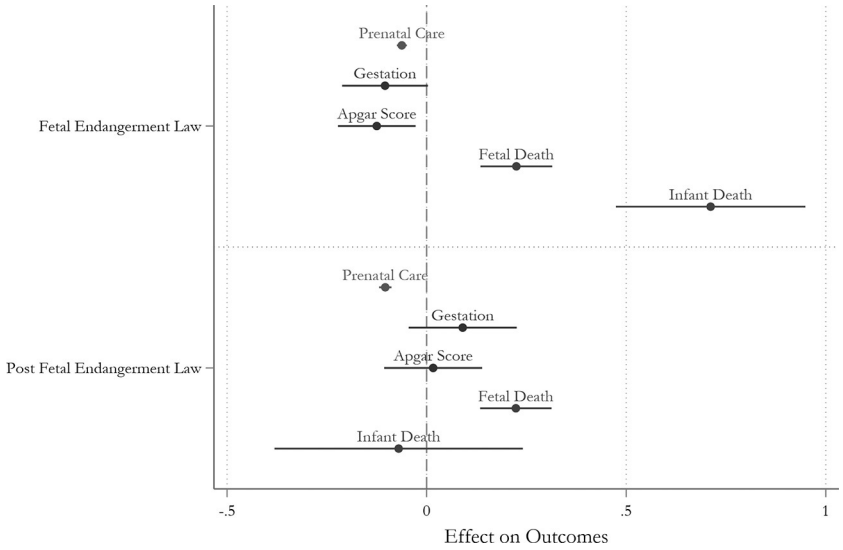


Figure 4 reports the results of a series of regression models that use the *rest of the United States* to create the counterfactual to what would have happened in Tennessee had it not adopted a fetal endangerment law. Figure 4 presents the results of five separate regression models, and the coefficient estimates from these models are reported in two separate groups. The first five estimates represent the effect of the fetal endangerment law itself, and the second five estimates represent the effect of being in Tennessee following the lapse of the fetal endangerment law. Each estimate is reported as a point in Figure 4, and the bars associated with each point represent the ninety percent confidence interval associated with the coefficient estimate. If this confidence interval (the bar connected to each point) does not cross the dashed line that indicates zero, then a given coefficient is statistically significant.

The results are not encouraging from the perspective of those whom the fetal endangerment law was designed to protect. The fetal endangerment law meaningfully worsened all of the health outcomes we examine. Focusing first on prenatal care, the regression results indicate that Tennessee's fetal endangerment law reduced the probability of a mother receiving prenatal care by approximately 6.2 percentage points relative to the pre-implementation period. Translating this into the number of mothers discouraged from prenatal care, Tennessee's fetal endangerment law caused approximately 5,421 mothers to forego prenatal care in 2015

148. Each point represents the coefficient on the fetal harm law or post-fetal harm law variables. Both coefficients are estimated in the same model. The dependent variable for each regression is indicated above the point estimate. Ninety percent confidence intervals are reported as bars extending from the point estimates and are derived from standard errors clustered at the state level. If a bar connected with a given point does not cross the line indicating zero, then that effect is statistically significant. All regression models include a full set of county and month fixed effects. All models include all counties across the United States.

alone.[149] The total number of mothers denied care is higher over the entire lifespan of the law. Such negative effect of the fetal endangerment law on prenatal care did not abate following the lapse of such law, where there was an approximately 10.2 percentage point decrease in the probability of receiving prenatal care.

Turning next to gestation length, the regression results indicate that the fetal endangerment law reduced gestation by approximately one-tenth of one month, which is roughly three days. Across all pregnancies completed in 2015, this negative effect would translate to nearly 720 fewer years of gestation. Although this effect is not statistically significant at traditional levels, a reduction of this amount of gestation could have serious consequences for the infants who must survive without the benefits of increased in utero development—consequences which can translate into serious costs for young families and society at large.[150] Relatedly, Tennessee's fetal endangerment law had a statistically significant and negative effect on Apgar scores, reducing them by around 0.125 points. Although the magnitude of this effect may appear small, the reduction of Apgar scores can signal the appearance of serious medical conditions in infants. And again, the financial and emotional cost of caring for sick infants can be a heavy burden for young families—and society at large will have to share the financial burden because state Medicaid programs often fund the healthcare needed by newborns.[151] Fortunately, unlike the effect of the fetal endangerment law on prenatal care, the negative impact on gestation and Apgar scores abated following the law's demise; the coefficients on the post-fetal endangerment law variable in both the gestation and Apgar score models are positive and statistically insignificant.

Finally, with respect to the core purpose of fetal endangerment laws—the prevention of fetal and infant deaths—the models evince a problematic situation. Tennessee's fetal endangerment law increased both fetal and infant deaths. The fetal endangerment law increased fetal deaths by 0.225 for every 1,000 births. As noted above, 87,432 babies were born in Tennessee in 2015. This means that Tennessee sponsored the deaths of approximately twenty fetuses in 2015. Similarly, the regression results indicate that the fetal endangerment law increased the death rate of infants per 1,000 births by approximately 0.711. This means that, in 2015, Tennessee sponsored the deaths of more than sixty infants in the first twenty-eight days of life with its fetal endangerment law. Fortunately for live-born babies in Tennessee, the increase in infant death rates abated after the law lapsed, as indicated by the negative and

149. In 2015, 87,432 babies were born in Tennessee. The regression results indicate that 6.2% of mothers chose not to receive prenatal care as a result of the fetal endangerment law, and 6.2% of 87,432 is approximately 5,421.

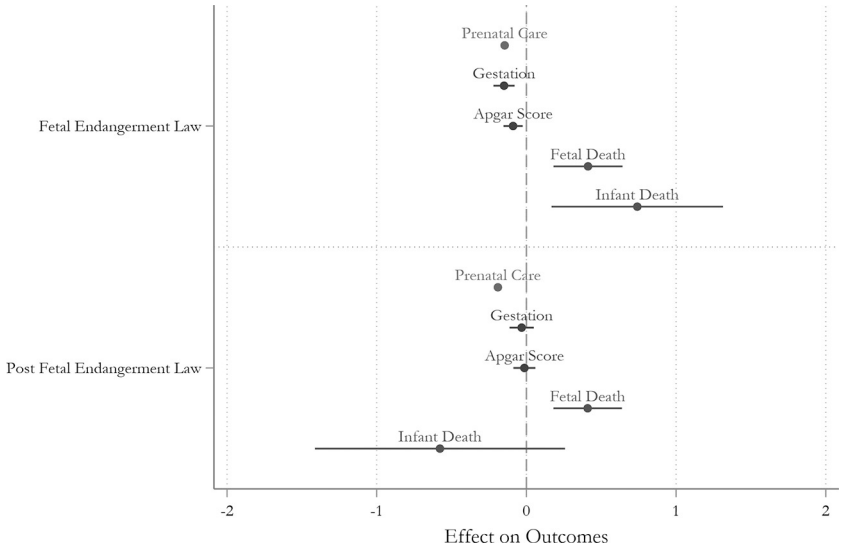
150. These costs include the health costs of suffering poor health outcomes and the monetary cost of the medical interventions necessary to address some of these poor outcomes. *See* Eileen M. Walsh, Sherian X. Li, Libby K. Black & Michael Kuzniewicz, *Incremental Cost of Prematurity by Week of Gestational Age*, 9 AM. J. PERINATOLOGY REP. e76, e76, e82 (2019) (explaining that shorter gestation times translate into higher costs).

151. *See Births Financed by Medicaid*, KAISER FAM. FOUND., https://www.kff.org/medicaid/state-indicator/births-financed-by-medicaid/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D [https://perma.cc/G2ME-V5BQ] (last visited Nov. 29, 2020).

statistically insignificant coefficient on the post-fetal endangerment-law. Yet the positive effect on fetal death rates did not abate, which suggests that the fetal endangerment law had lingering deleterious effects on the unborn in Tennessee. This indicates that the chilling effect of the fetal endangerment law persisted after the law itself lapsed. This result could stem from decreased trust in the healthcare and criminal justice systems that began, but did not end, with the law.

To probe the validity of these troubling results, we re-estimate all of the regression models above, but limit the models to include only counties in Tennessee, Alabama, Arkansas, Florida, Georgia, Kentucky, Missouri, North Carolina, and Virginia. By examining the effect of the fetal endangerment law in Tennessee relative to the states that share a border with Tennessee, we can calculate whether the effect persists when only states that share many commonalities with Tennessee are included in the comparator group.[152] The results of these models are reported in Figure 5.

Figure 5: Regression Results for Tennessee's Fetal Endangerment Law (Limited to States Bordering Tennessee)[153]



152. As noted above, Alabama began prosecuting mothers for similar actions as those criminalized by Tennessee's fetal endangerment law in 2016. *See supra* notes 31–34 and accompanying text. We nevertheless include Alabama as a comparator state. If the inclusion of Alabama biases our results at all—here or in the primary models reported above—the bias will be against finding a statistically significant effect of Tennessee's law. Accordingly, we offer conservative estimates of the effect of Tennessee's law through the inclusion of Alabama as a comparator.

153. Each point represents the coefficient on the fetal harm law or post-fetal harm law variables as indicated. Both coefficients are estimated in the same model. The dependent variable for each regression is indicated above the point estimate. Ninety percent confidence intervals are reported as bars extending from the point estimates and are derived from standard errors clustered at the state level. All regression models include a full set of county and month fixed effects. All models include all counties from the following states: Tennessee, Alabama, Arkansas, Florida, Georgia, Kentucky, Missouri, North Carolina, and Virginia.

The results in Figure 5 parallel the models previously reported. The fetal endangerment law and post-fetal endangerment-law variables continue to have a negative and statistically significant effect on the likelihood of mothers receiving prenatal care. Similarly, the law reduced both gestation and Apgar scores.[154] The negative effect on these birth-related outcomes abated after the law lapsed. Finally, the law increased fetal deaths both during and after its implementation, and it increased infant deaths during the time it was in effect.

Overall, the evidence discussed above paints a dire picture of Tennessee's fetal endangerment law. Though ostensibly passed to protect fetuses (and later, infants) from harm, this law does no such thing. In 2015 alone, the empirical analysis shows that the law resulted in twenty fetal deaths and sixty infant deaths. And the empirical results suggest a well-defined mechanism by which these deaths occurred. Mothers forego prenatal care when this law is in place—indeed, the chilling effect of such law on pregnant mothers lasts past the time the law lapses—which places them and their fetuses at higher risk. This risk later manifests in the form of shorter gestation times and lower Apgar scores. It may well manifest in myriad other ways; we do not have the data to examine all of these effects. Ultimately, the foregone care translates into more fetal and infant deaths.

D. SYNTHETIC CONTROL MODELS

As noted in the previous Section, we want to be careful in testing the sensitivity of our results. These results have profound implications for how states should regulate pregnant mothers, and we want to ensure that our results are robust before turning to the legal implications of our analysis.[155] To that end, empirical scholars have indicated that difference-in-differences models that rely on a legal change in only one state may suffer from problems that can undermine their ability to generate robust estimates of causal effects because they have only a single treated unit.[156] A survey of this complex methodological debate is well beyond the scope

154. Unlike the models that include all states, the effect of the fetal endangerment law on gestation is statistically significant in the models that include only states bordering Tennessee.

155. A recent study examining similar laws with an entirely different data set found similar results to ours, thereby increasing our confidence in the results. *See* Atkins & Durrance, *supra* note 107, at 760–61 ("We studied the effects of state policies that treat prenatal substance use identified at birth as child abuse or neglect. First, we did not find evidence that punitive prenatal substance use policies decreased rates of NAS or maternal narcotic exposure at delivery. Second, we found evidence that these policies reduced substance use treatment admissions among pregnant women and that a smaller share of pregnant women were referred to treatment by health care providers in states with punitive policies. Supporters of punitive policies often argue that the goal of the policies is to reduce substance exposure in pregnancy and its negative consequences at birth. However, we did not find evidence that these policies were achieving this goal.").

156. *See, e.g.*, Doudchenko & Imbens, *supra* note 109, at 1, 14 (discussing the problems associated with analyzing a legal change in a single unit and possible methodological solutions to those problems); Noémi Kreif, Richard Grieve, Dominik Hangartner, Alex James Turner, Silviya Nikolova & Matt

of this Article.[157] We nevertheless want to be sensitive to these methodological concerns. Therefore, we are employing a technique that prior work has labelled as capable of addressing those concerns—that is, estimating a series of synthetic control models.[158]

Synthetic control models differ from difference-in-differences models in one key respect. Where difference-in-differences models rely on a pool of states that never adopted a fetal endangerment law to provide a comparator group, synthetic control models explicitly construct a comparison state that mirrors the state that enacted the relevant law as closely as possible.[159] Specifically, instead of comparing Tennessee to all other states or to states that border Tennessee, synthetic control models construct a "Synthetic Tennessee" from other states. These models then compare the evolution of a relevant outcome in Tennessee to the evolution of that outcome in Synthetic Tennessee.[160] To construct a Synthetic Tennessee, the models focus on the evolution of an outcome prior to the adoption of Tennessee's law. The models then construct a weighted average of other states to match this pre-implementation evolution in Tennessee as closely as possible. Such weighted average is Synthetic Tennessee. Afterwards, the models examine how this weighted average of other states compares to Tennessee after the law's implementation. By explicitly constructing a Synthetic Tennessee against which to compare Tennessee, synthetic control models can address the potential methodological problems scholars raised in the context of single-treated unit, difference-in-differences models.[161]

Throughout our analysis, we report all synthetic control model results graphically for ease of interpretation. We also examine quarterly instead of monthly outcomes. This choice is driven purely by the desire to present readable results. Because monthly results are more variable (as indicated in many of the figures above), we focus on quarterly results, which tend to be less variable. We do not present yearly results because it is difficult to match the implementation date of Tennessee's fetal endangerment law, which occurred in the middle of a year, with yearly data. Nonetheless, we have

Sutton, *Examination of the Synthetic Control Method for Evaluating Health Policies with Multiple Treated Units*, 25 HEALTH ECON. 1514, 1514–16 (2016) (same).

157. *See generally* Doudchenko & Imbens, *supra* note 109 (proposing a synthetic control procedure to address some of the problems associated with difference-in-differences models).

158. *See* Alberto Abadie, Alexis Diamond & Jens Hainmueller, *Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program*, 105 J. AM. STAT. ASS'N 493, 494–97 (2010) (discussing synthetic control models' ability to address specific methodological problems).

159. *See* Alberto Abadie, Alexis Diamond & Jens Hainmueller, *Comparative Politics and the Synthetic Control Method*, 59 AM. J. POL. SCI. 495, 500 (2015).

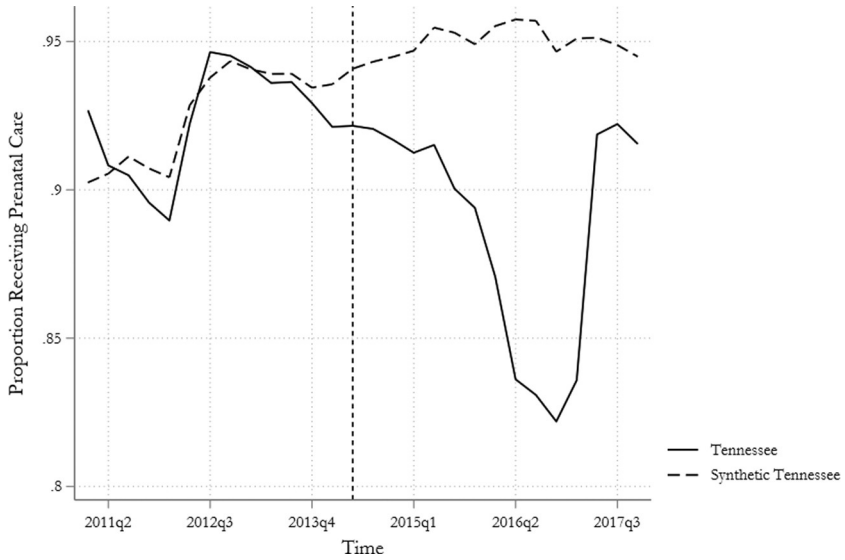
160. *See id.*

161. *See id.*; Doudchenko & Imbens, *supra* note 109, at 1–2.

estimated all of the synthetic control models reported below at the monthly and yearly levels. The results are consistent with the quarterly results presented below and are omitted only because they are duplicative and more difficult to interpret.

Proceeding in the same order as above, we begin with a synthetic control model focused on prenatal care, reflected in Figure 6. The results show a good match between Tennessee and Synthetic Tennessee, as the pre-fetal harm-law lines match relatively closely. Once Tennessee implements its fetal endangerment law, however, the proportion of mothers receiving prenatal care in Tennessee diverges sharply from the predicted proportion of mothers who should receive prenatal care, as represented by Synthetic Tennessee. Thus, these results corroborate the empirical results reported in the previous Sections.

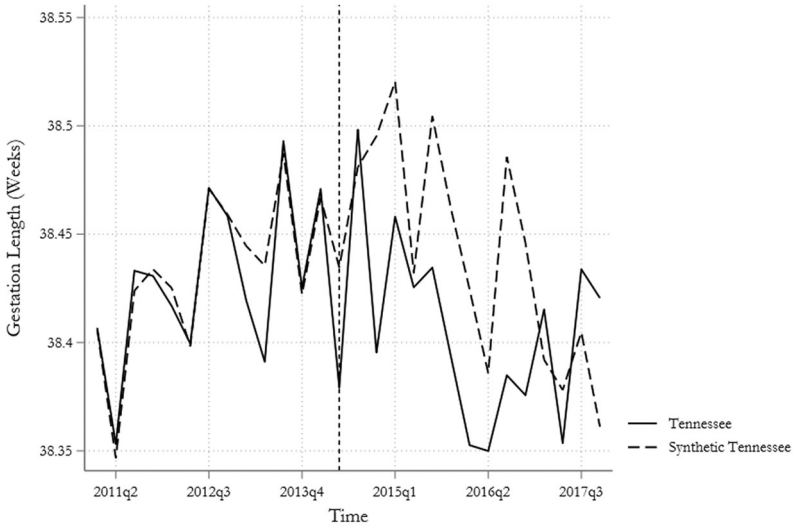
Figure 6: Synthetic Control Results for Prenatal Care



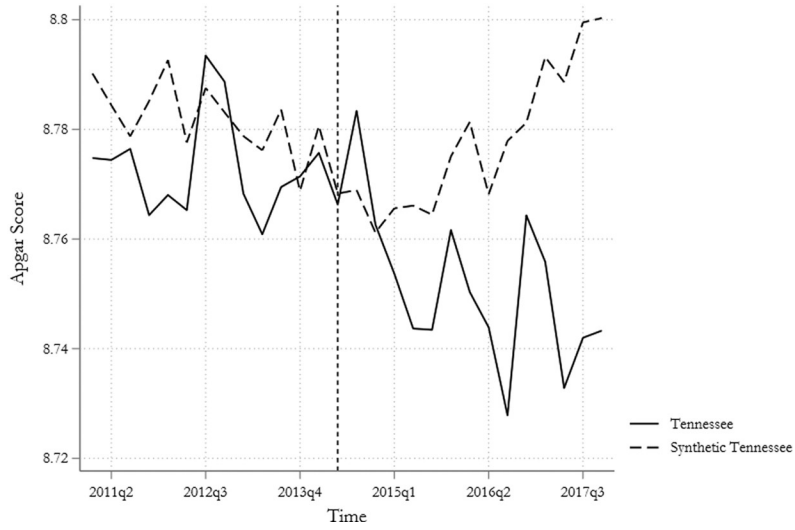
Turning next to the pregnancy- and birth-related outcomes, Figure 7 focuses on gestation length (Panel A) and Apgar scores (Panel B). After the implementation of Tennessee's fetal endangerment law, a clear gap in gestation length emerges between Tennessee and Synthetic Tennessee. This gap persists until the later part of our data period before closing—that is, the time after Tennessee's law lapsed. Additionally, a divergence emerges between the Apgar scores in Tennessee and Synthetic Tennessee after the implementation of the fetal endangerment law. The gap in Apgar scores, however, never closes.

Figure 7: Synthetic Control Results for Pregnancy- and Birth-Related Outcomes

Panel A: Gestation



Panel B: Apgar Score

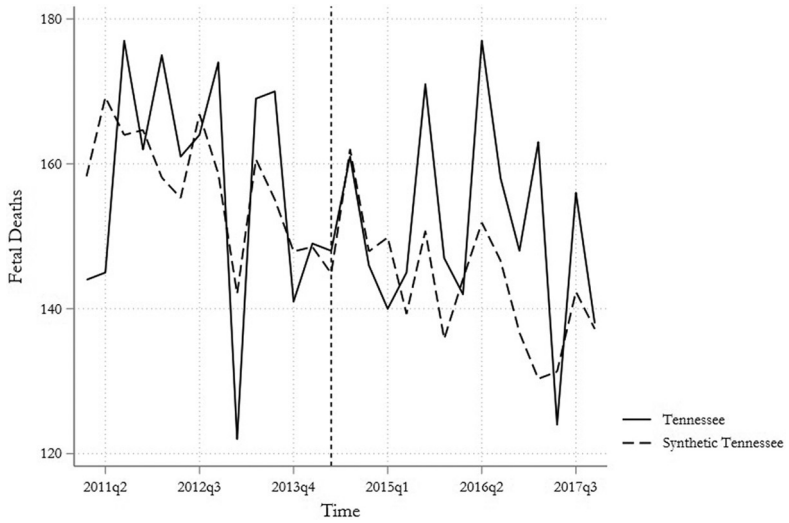


Finally, Figure 8 presents the synthetic control results for fetal (Panel A) and infant (Panel B) deaths. Though the gap between fetal deaths in Tennessee and Synthetic Tennessee in Panel A is not quite as obvious as the other outcomes reported above, a gap still exists; fetal deaths increased in Tennessee compared to what they would have been had Tennessee never enacted a fetal endangerment

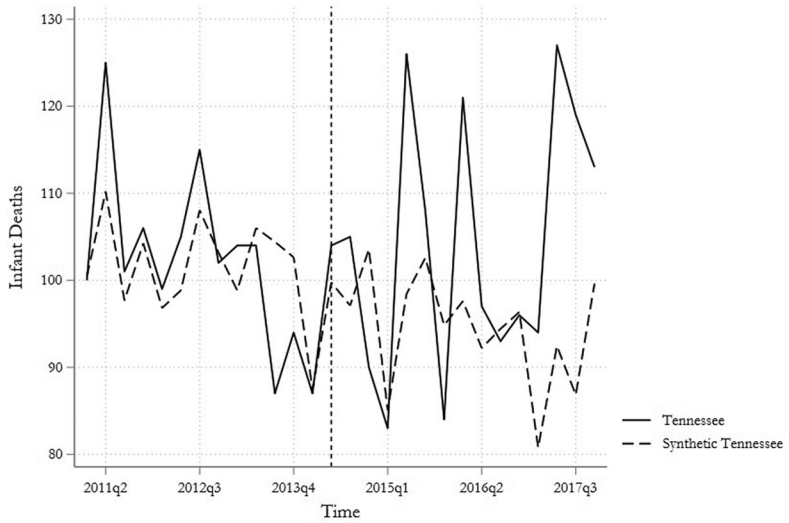
law. Similarly, the infant-death results in Panel B exhibit a gap to the extent that Tennessee experienced a spike in infant deaths that Synthetic Tennessee did not experience in some quarters.

Figure 8: Synthetic Control Results for Fetal and Infant Deaths

Panel A: Fetal Deaths



Panel B: Infant Deaths



Overall, these results support the regression results described in Section III.C and paint a similarly grim picture on the effect of Tennessee's fetal endangerment

law. That law had a clear, perverse effect on public health. We explore the legal implications of this grim picture in the next Part.

IV. FETAL ENDANGERMENT LAWS CREATE FETAL HARM

Every single professional and medical organization that has taken a public position on the issue has been uniformly opposed to the criminalization of pregnancy through fetal endangerment laws.[162] The American College of Obstetricians and Gynecologists,[163] the American Academy of Pediatrics,[164] the American Psychiatric Association,[165] and the American Medical Association[166] have each released statements opposing such practices, categorizing them as harmful, counterproductive, and contrary to widely shared public health goals.[167] There is no evidence that fetal endangerment laws result in fewer infants born with NAS;[168] instead, studies suggest that the fetal endangerment laws result in more affected infants.[169] Furthermore, there is no evidence that these laws prevent women from using drugs.[170]

Although a robust literature surrounding the negative policy outcomes of fetal endangerment laws already identifies a range of problematic consequences, this Article pairs these arguments with new empirical evidence that the laws also fail to accomplish their stated goal—and in fact, result in additional harm of the type

---

162. *See* Lollar, *supra* note 7, at 991 ("[E]very major medical organization in this country has vocally opposed criminalizing drug use by pregnant women.").

163. *See* Am. Coll. of Obstetricians & Gynecologists Comm. on Health Care for Underserved Women, *Committee Opinion Number 473: Substance Abuse Reporting and Pregnancy: The Role of the Obstetrician–Gynecologist*, 117 OBSTETRICS & GYNECOLOGY 200, 200 (2011) ("Seeking obstetric–gynecologic care should not expose a woman to criminal or civil penalties . . . .").

164. *See* Am. Acad. of Pediatrics Comm. on Substance Abuse, *Drug-Exposed Infants*, 96 PEDIATRICS 364, 365–66 (1995) ("Punitive measures taken toward pregnant women . . . have no proven benefits for infant health . . . .").

165. *See* Am. Psychiatric Ass'n, *Position Statement on the Care of Pregnant and Newly Delivered Women Addict*s, 149 AM. J. PSYCHIATRY 724, 724 (1992) ("APA opposes the criminal prosecution and incarceration of pregnant and/or newly delivered women on child abuse charges based *solely* on substance abuse.").

166. *See* Bd. of Trs., Am. Med. Ass'n, *Legal Interventions During Pregnancy: Court-Ordered Medical Treatments and Legal Penalties for Potentially Harmful Behavior by Pregnant Women*, 264 JAMA 2663, 2669 (1990) ("[C]riminal penalties may exacerbate the harm done to fetal health by deterring pregnant substance abusers from obtaining help or care from either the health or public welfare professions . . . .").

167. *See* Bridges, *supra* note 43, at 803 ("Every medical and public health organization of record that has addressed the issue of pregnant women and drug use has opposed arresting and prosecuting pregnant women with a substance use disorder.").

168. *See* Lollar, *supra* note 7, at 963 (explaining that the number of infants born with NAS during the operating period of Tennessee's fetal endangerment law was roughly the same as when the law lapsed through a sunset provision).

169. *See, e.g.*, Atkins & Durrance, *supra* note 107, at 760–61.

170. *See* Lollar, *supra* note 7, at 963 (noting the lack of evidence that the Tennessee's fetal endangerment law prevented drug use); Sarah E. Smith, *No Safe Harbors: Examining the Shift from Voluntary Treatment Options to Criminalization of Maternal Drug Use in Tennessee*, 46 U. MEM. L. REV. 203, 229 (2015) ("There has not been a change in the rate of maternal drug use nationally since the rise of child abuse statutes punishing women for drug use during pregnancy . . . .").

that states are purportedly seeking to avoid.[171] We further argue that such failure makes the continued passage and enforcement of these laws rise to the level of a constitutional violation.

A. LEGISLATIVE PURPOSE OF FETAL ENDANGERMENT LAWS

State legislatures and local law enforcement base their support of these laws on the idea that the criminalization of risky behavior in pregnancy promotes the protection of fetal and infant life.[172] Speaking on the introduction of Tennessee House Bill 1168, one of the legislation's sponsors stated that: "This bill's intent is to protect babies, period."[173] A Texas state representative, speaking in support of a piece of fetal endangerment legislation, stated: "I am interested in providing additional safety and protection for our next generation, and it must happen now."[174] Many states already have laws that criminalize the conduct of third parties who harm fetal life, and some state lawmakers argue that pregnant women should not be treated differently because "[t]hey are hurting someone else."[175] The language of the "protection of innocent, unborn children" dominates much of the discussion.[176] A prosecutor in Alabama stated that the goal of prosecutions was to "represent the victims; the victims are the most vulnerable, relying on their mothers' womb[s]; they have no means to protect themselves."[177] Although some lawmakers and prosecutors also voice the belief that fetal endangerment laws are designed to deter pregnant women from risky behavior with the threat of incarceration, this is mostly presented as a secondary concern.[178] Further, the lack of available substance abuse treatment options

171. There was already general evidence that suggested such measures were ineffective, including the increasing prevalence of both fetal and maternal mortality in the years since criminalization approaches were adopted. *See* GOODWIN, *supra* note 18, at 131–32.

172. *See* Bridges, *supra* note 43, at 798 ("At all times, however, the state professes to act in pursuit of the health and safety of infants."); Goodwin, *supra* note 6, at 840 ("The legitimacy of fetal protection laws rests on an explicit welfare assumption rooted in public health rationales. The laws are based on the assumption that state interventions in pregnancies promote the health of fertilized embryos and fetuses.").

173. Maggie Ethridge, *New Bill Targets Pregnant Women with Addiction*, FIX (Feb. 15, 2019), https://www.thefix.com/new-bill-targets-pregnant-women-addiction [https://perma.cc/TCT9-KNTU] (quoting the bill's original sponsor).

174. Goodwin, *supra* note 6, at 793 (quoting Texas state representative Doug Miller).

175. Nancy Hicks, *Fetal Assault Bill Advances, Exempts Mother from Prosecution*, LINCOLN J. STAR (Mar. 8, 2006), https://journalstar.com/news/local/govt-and-politics/fetal-assault-bill-advances-exempts-mother-from-prosecution/article_6fe3d28e-d219-53e2-8600-0c309a7a0a93.html (quoting statements from Nebraska state senator, Chris Beutler).

176. *See, e.g.*, Press Release, Gerald "Jay" Harris, Big Horn Cty. Attorney, Big Horn County Attorney's Office Announces Immediate Crackdown of Pregnant, Expecting Mothers Consuming Alcohol or Dangerous Drugs, Particularly Methamphetamine and Opioids (Jan. 11, 2018) (on file with authors); WBIR Staff, *Tennessee Targets Meth Abuse During Pregnancy*, WBIR (Apr. 8, 2015, 3:39 PM), https://www.wbir.com/article/news/crime/tennessee-targets-meth-abuse-during-pregnancy/51-93433902 [https://perma.cc/44FL-46U9] (quoting Bill Whitesell, Interim Executive Director of the Tennessee Prosecutors' Conference, who said that district attorneys "feel we have innocent children who are being harmed, in some cases to the point of death, and someone needs to be there for these children").

177. GOODWIN, *supra* note 18, at 41 (alteration in original) (quoting Alabama prosecutor Angela Hulsey).

178. Additionally, there is a large and established body of literature on why the threat of criminal sanction is an ineffective deterrent to those struggling with addiction. *See generally* PEW CHARITABLE

for pregnant women contradicts any argument that the laws are intended to encourage pregnant women to seek treatment—there are only a few places (if any) where they could realistically access treatment, even when they sincerely wanted to.[179]

If fetal endangerment laws, which criminalize dangerous or risky behaviors in pregnancy, are understood as attempts by prosecutors and state legislators to protect fetal life, then such laws have failed to meet their stated goal.[180] Our empirical analysis shows that these laws increase stillbirths and fetal deaths.[181] It also shows this increase in harm to fetal and infant life is likely the result of the delay or failure to seek prenatal care, the unwillingness to disclose concerns to healthcare providers out of fear of prosecution, or both. When pregnant women delay or avoid prenatal care and fail to have candid conversations with their healthcare providers, fetal outcomes are demonstrably poorer. No one wins—not the babies who have a decreased risk of survival and an increased risk of health complications, not the women who are too afraid to access healthcare, and not the state which has failed to protect fetal life or promote public health.

B. FETAL ENDANGERMENT LAWS FAIL RATIONAL BASIS REVIEW

The previous Section's conclusion thus raises the question—how can states be prevented from passing and enforcing fetal endangerment laws? Although states have wide latitude to determine the content of their criminal code[182]—and prosecutors have virtually unbridled discretion in deciding whom to charge with violations of that code[183]—state action is not completely immune from review. Even under the deferential rational basis review that is utilized when a state action does not implicate fundamental liberties or a protected class of people, the state action must still be

---

TR., *supra* note 91. Courts also have recognized that deterrence is not a valid reason for the prosecution of prenatal drug use, in large part because it is ineffective. *See, e.g.*, Johnson v. State, 602 So. 2d 1288, 1294 (Fla. 1992) (calling into question the argument that prosecuting pregnant women would provide a deterrent effect and noting that the fear of prosecution may incentivize abortion or the avoidance of prenatal care).

179. For instance, Oklahoma had approximately 1,500 people waiting for an open space in a drug treatment program in 2014. Olga Khazan, *Into the Body of Another*, ATLANTIC (May 8, 2015), https://www.theatlantic.com/health/archive/2015/05/into-the-body-of-another/392522. Statewide, there are only 214 treatment placements for women with dependent children. *Id.* Tennessee also has a shortage of available residential treatment beds, and many residential drug treatment programs refuse to accept pregnant women. *See* AMNESTY INT'L, *supra* note 16, at 31.

180. Importantly, these laws have also been championed as a way for drug addicted women to access care and treatment. *See* Bach, *supra* note 23, at 814. Putting aside the dubious nature of the claim that involuntary contact with the criminal justice system can ever be beneficial, the empirical basis for this claim has been persuasively debunked. *See id.* at 816.

181. *See supra* Part III.

182. *See* Engle v. Isaac, 456 U.S. 107, 128 (1982) ("The [s]tates possess primary authority for defining and enforcing the criminal law.").

183. *See* Bordenkircher v. Hayes, 434 U.S. 357, 364 (1978) ("[S]o long as the prosecutor has probable cause to believe that the accused committed an offense defined by statute, the decision whether or not to prosecute, and what charge to file or bring before a grand jury, generally rests entirely in his discretion.").

rationally related to a legitimate government interest.[184] Assuming for the sake of argument that the criminalization of pregnancy does not implicate a fundamental liberty or a protected class of people, a law that results in the *opposite* of the legislature's stated goal seems an obvious example of when even rational basis review might invalidate state action.[185] In simpler terms, if your actions created an outcome that exacerbated the problem you were attempting to remedy, most would agree that it would be irrational to continue those actions.

All laws make classifications.[186] Equal protection requires, at a minimum, that such classifications be rationally related to a legitimate government purpose.[187] The canonical perspective on rational basis review is that it is deferential to the point of meaninglessness—making it an ineffective tool for plaintiffs challenging government action.[188] However, this simplified take on rational basis review obscures the real work that it performs.[189] Although rational basis review is a deferential standard, it *does not* (and should not) amount to a complete lack of review. And indeed, courts have struck down hundreds, if not thousands, of laws under rational basis review[190] as the scope and meaning of

184. *See* Romer v. Evans, 517 U.S. 620, 631 (1996) ("[I]f a law neither burdens a fundamental right nor targets a suspect class, we will uphold the legislative classification so long as it bears a rational relation to some legitimate end."). This basic requirement that the government act rationally exists elsewhere in the constitutional scheme as well. *See* United States v. Comstock, 560 U.S. 126, 134 (2010) (discussing requirement under the Necessary and Proper Clause that a "statute constitutes a means that is rationally related to the implementation of a constitutionally enumerated power.").

185. *See* Zobel v. Williams, 457 U.S. 55, 63–65 (1982) (holding that the state legislative scheme could not stand if the only asserted state interests could not rationally be furthered by the state action).

186. *See* Toll v. Moreno, 458 U.S. 1, 39 (1982) (Rehnquist, J., dissenting) ("All laws classify, and, unremarkably, the characteristics that distinguish the classes so created have been judged relevant by the legislators responsible for the enactment."); Michael J. Perry, *Modern Equal Protection: A Conceptualization and Appraisal*, 79 COLUM. L. REV. 1023, 1068 (1979) ("Every time an agency of government formulates a rule—in particular, every time a legislature enacts a law—it classifies.").

187. *See* San Antonio Indep. Sch. Dist. v. Rodriguez, 411 U.S. 1, 40 (1973) ("A century of Supreme Court adjudication under the Equal Protection Clause affirmatively supports the application of the traditional standard of review, which requires only that the State's system be shown to bear some rational relationship to legitimate state purposes."); James M. McGoldrick, Jr., *The Rational Basis Test and Why It Is So Irrational: An Eighty-Year Retrospective*, 55 SAN DIEGO L. REV. 751, 752 (2018) ("Under the equal protection clause, the classifications within the law usually must rationally relate to some legitimate state interest.").

188. McGoldrick, Jr., *supra* note 187, at 752–53 ("The rational basis test as applied by the Supreme Court is such a permissive level of review that it is effectively not judicial review at all.").

189. This argument is informed and animated by Katie Eyer's excellent work, problematizing the stock understanding of rational basis as an ineffective tool for constitutional change. *See* Katie R. Eyer, *The Canon of Rational Basis Review*, 93 NOTRE DAME L. REV. 1317, 1321–23, 1335–41 (2018) (arguing that rational basis review is more nuanced, allowing successful challenges to the status quo in a variety of circumstances and cases).

190. *See* JAMES A. KUSHNER, GOVERNMENT DISCRIMINATION: EQUAL PROTECTION LAW AND LITIGATION § 4:30 (2019) (collecting cases in which courts have found classifications irrational, including those involving "regulation of access to justice, adoptions, alcoholic beverages, automobile guest statutes, bail bonds, bottles, business licensing or regulation, cable television, casket sales, clemency, conditions of incarceration, consumer protection, crimes, criminal justice damages, driving, drunk driving, insurance, juvenile commitments and incarceration, sentencing, sex offenders, damages, employment, entertainment, federal land management, fishing, food stamps, foster parenting, gambling,

rational basis review shifted throughout time.[191] The crux of rational basis review is that there must be some reason to believe the law will further a legitimate government interest.[192]

Most would agree that protection and promotion of fetal and infant health and life is a legitimate government purpose, and several decades of Supreme Court precedent confirm that it is so.[193] Therefore, the satisfaction of equal protection's mandate turns on whether fetal endangerment laws make a classification that is rationally related to that goal. The question thus becomes whether classifying pregnant women as susceptible to criminal prosecution or civil commitment for behavior that would not result in the same state action had they been nonpregnant is a rational method of promoting fetal and infant health.[194]

When states began to implement fetal endangerment policies in the 1970s—and even through the 1990s—it might have been arguable that such an approach would rationally serve the legislative intent, at least in the absence of evidence to

gender, guns, health care, homestead rights, insurance, jury service, . . . juvenile curfews, . . . juvenile judicial proceedings, . . . labor regulation, land development, landlords and tenants, massage parlors, Medicaid, medical assistance, medical malpractice, . . . mental or other commitments, municipal services, motor vehicles, names, narcotics, parole and probation, poolrooms, professional licensing, parking, prostitution, public officials, public contracting, retail sales, . . . retirement, . . . schools, sex offenders, Social Security, . . . signs and billboards, smoking, social welfare programs, sovereign immunity, sports, statutes of limitations, suicide, Sunday closing laws, support, taxes, taxi cabs, tort recovery, towing, unemployment compensation, utilities, wages, [and] workers' compensation" (footnotes omitted)).

191. *See* Eyer, *supra* note 189, at 1323 ("[T]here has been variation in the availability of meaningful rational basis review: as emerging social movements gain credence, their use of rational basis review tends to expand opportunities—both for their own litigation priorities, and also for others to access more meaningful minimum-tier review.").

192. *See* Jeffrey D. Jackson, *Putting Rationality Back into the Rational Basis Test: Saving Substantive Due Process and Redeeming the Promise of the Ninth Amendment*, 45 U. RICH. L. REV. 491, 535 (2011) ("[T]he rational basis test is rooted in the English common law concept that laws cannot be 'arbitrary,' but instead must be based on reason.").

193. *See, e.g.*, Planned Parenthood of Se. Pa. v. Casey, 505 U.S. 833, 869 (1992) ("The woman's liberty is not so unlimited, however, that from the outset the State cannot show its concern for the life of the unborn, and at a later point in fetal development the State's interest in life has sufficient force so that the right of the woman to terminate the pregnancy can be restricted."); Roe v. Wade, 410 U.S. 113, 163 (1973) ("With respect to the State's important and legitimate interest in potential life, the 'compelling' point is at viability."); *see also* Mary Ziegler, *After Life: Governmental Interests and the New Antiabortion Incrementalism*, 73 U. MIAMI L. REV. 78, 95 (2018) (reviewing this precedent). There is, of course, compelling evidence that the goal of fetal endangerment laws is not *actually* the promotion of fetal life, but instead the punishment of women who deviate from societal standards of "good" mothering. *See* GOODWIN, *supra* note 18, at 146–48; *see also* Lollar, *supra* note 7, at 952–53 (rejecting premise that state legislators pursue these policies simply out of ignorance or an overreliance on intuition that such laws will result in positive outcomes for infant health).

194. It is fair to say that pregnant individuals are differently situated than nonpregnant individuals. This difference alone, however, does not validate state action treating them differently if it is not rationally related to a legitimate state goal. *Cf.* City of Cleburne v. Cleburne Living Ctr., 473 U.S. 432, 448 (1985) (noting that although "the mentally retarded as a group are indeed different from others not sharing their misfortune," such a "difference is largely irrelevant" unless the group home and those within it "would threaten legitimate interests of the city in a way that other permitted uses such as boarding houses and hospitals would not").

the contrary.[195] But in light of the evidence and professional consensus that has accumulated over the subsequent decades about the harm of fetal endangerment policies to public health—including the empirical evidence presented in this Article—it is no longer even arguable.[196] Fetal endangerment laws result in state-created harm to fetal and infant life. Even the case that is often cited as the first articulation of the modern, post-*Lochner* rational basis test—*United States v. Carolene Products Co.*—demonstrates that a law would correctly be pronounced unconstitutional under the test when in "light of the facts made known or generally assumed [the law] is of such a character as to *preclude the assumption that it rests upon some rational basis* within the knowledge and experience of the legislators."[197] The wealth of information regarding the inefficacy of fetal endangerment laws—and indeed their tendency to create perverse outcomes contrary to the legislative intent—make these laws emblematic of the reasoning of *Carolene Products*: legislators are precluded from assuming such laws will rationally promote their purpose.[198]

This is not to say that states must, from the outset, justify their actions with evidence or other empirical data suggesting the correctness of their approaches. This is decidedly not required.[199] It is entirely possible that state actors pursued these policies under the rational theory that by bringing the force of the criminal justice system to bear on pregnant women, these women would either be deterred from engaging in risky behavior from the outset or be prevented from continuing that behavior through incarceration.[200] Such an argument has at least minimum logical merit. Without information to the contrary, a state could reasonably conclude that such an approach might prevent additional harm to fetal life.[201] Yet qualita-

195. *See* GOODWIN, *supra* note 18, at 132 (describing the "intuitive pull" of an argument that punitive state interventions in pregnancies will promote fetal health despite the lack of evidence for their efficacy); *cf.* W. Coast Hotel Co. v. Parrish, 300 U.S. 379, 399 (1937) ("Even if the wisdom of the policy be regarded as debatable and its effects uncertain, still the legislature is entitled to its judgment.").

196. *Cf.* Minnesota v. Clover Leaf Creamery Co., 449 U.S. 456, 464 (1981) ("[T]hose challenging the legislative judgment must convince the court that the legislative facts on which the classification is apparently based could not reasonably be conceived to be true by the governmental decisionmaker." (quoting Vance v. Bradley, 440 U.S. 93, 111 (1979))).

197. 304 U.S. 144, 152 (1938) (emphasis added).

198. *See id.*

199. *See* Heller v. Doe, 509 U.S. 312, 320 (1993) (alteration in original) ("[A] legislative choice is not subject to courtroom factfinding and may be based on rational speculation unsupported by evidence or empirical data." (quoting FCC v. Beach Comm., Inc., 508 U.S. 307, 315 (1993))). *But see* St. Joseph Abbey v. Castille, 712 F.3d 215, 223 (5th Cir. 2013) ("[A]lthough rational basis review places no affirmative evidentiary burden on the government, plaintiffs may nonetheless negate a seemingly plausible basis for the law by adducing evidence of irrationality.").

200. *See* Lollar, *supra* note 7, at 965 ("Underlying the actions of the state courts, legislators, and prosecutors in their decisions to allow the pursuit of criminal charges against women for using drugs while pregnant is the intuitive belief that such drug use causes harm, or at the very least, a serious risk of harm, to both the developing fetus and the child subsequently born.").

201. And Supreme Court Justices have emphasized the need for at least some space for legislatures to experiment with novel solutions to societal problems. *See* New State Ice Co. v. Liebmann, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting) ("Denial of the right to experiment may be fraught with serious

tive and quantitative data collected since the introduction of fetal endangerment laws—including the empirical analysis contained herein—make that assumption illogical.[202] Although a state is not required to produce evidence to support its legislative actions, it is not free to ignore empirically observable, adverse outcomes of its own actions once that evidence exists.[203] "The [s]tate may not rely on a classification whose relationship to an asserted goal is so attenuated as to render the distinction arbitrary or irrational."[204] Simply put, it is not "rational" to continue to engage in acts that have the opposite outcome of your stated intent.[205] This remains true even if the intent is ostensibly laudable.[206] The prediction about outcomes that supposedly formed the foundation for the original law no longer has any basis.

This does not mean that any law that fails to meet its stated goal—as long as it is otherwise rational—should be struck down under the constitutional framework asserted here. It is not only that fetal endangerment laws fail to protect fetal and infant life, which is their professed purpose. Ineffective laws may still be constitutional, but inefficacy is not at issue here—perversity is. These laws have a *perverse* effect on the stated goal; they increase the exact outcome they are intended to protect against. If consistent and compelling evidence proves that a law is such an abysmal failure in achieving its purpose that it exacerbates the problem it was intended to solve—like the laws analyzed in this Article—legislatures cannot be

consequences to the nation. It is one of the happy incidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country.").

202. *See* Terplan et al., *supra* note 10, at 3 (stating that scientific evidence does not support the utility of fetal endangerment laws that criminalize prenatal drug use, but instead that such policies have "adverse effects . . . on the engagement of substance-using women in prenatal care and/or the disclosure of their substance use to health care professionals").

203. *Cf.* Minnesota v. Clover Leaf Creamery Co., 449 U.S. 456, 464 (1981); *St. Joseph Abbey*, 712 F.3d at 226 ("The great deference due state economic regulation does not demand judicial blindness to the history of a challenged rule or the context of its adoption nor does it require courts to accept nonsensical explanations for regulation.").

204. City of Cleburne v. Cleburne Living Ctr., 473 U.S. 432, 446 (1985).

205. *See* Williams v. Vermont, 472 U.S. 14, 25, 28 (1985) (striking down under rational basis review a state tax scheme that was likely to result in the opposite of the state's stated interest in protecting local business).

206. There are persuasive arguments that the intent of the fetal endangerment laws is *not* laudable, and instead the laws are intended to harm and further marginalize poor women and women of color. *See supra* notes 93, 193, and accompanying text. For purposes of the present Article, however, the state's stated interest is accepted at face value. And unlike in other circumstances, the proponents of fetal endangerment laws only rarely substantiate their support—and when they do, they often use fabricated or distorted facts. Instead, they focus on the need to protect fetuses and children (and assume that these laws further that aim). Lawmakers who actively distort the factual basis of law present an even thornier issue for rational basis review. *See generally* Caitlin E. Borgmann, *Rethinking Judicial Deference to Legislative Fact-Finding*, 84 IND. L.J. 1 (2009) (asserting the need for the judiciary to independently review legislators' fact-finding when legislation implicates individual rights); Joseph Landau, *Broken Records: Reconceptualizing Rational Basis Review to Address "Alternative Facts" in the Legislative Process*, 73 VAND. L. REV. 425 (2020) (discussing how lawmakers increasingly justify legislative acts through reliance on false or misleading information and suggesting a procedural change to rational basis review to address such "broken records").

free from constitutional review when they persist in enforcing such laws and enacting additional ones.[207]

C. ADDITIONAL CONSTITUTIONAL ARGUMENTS

Beyond demonstrated perversity as a means to show fetal endangerment law's irrationality, there are three additional reasons to believe that fetal endangerment laws are constitutionally suspect. First, even assuming the laws furthered a legitimate government interest, they are both irrationally under and overinclusive. The second critique is that the laws were likely motivated by moral animus toward a politically unpopular group—pregnant drug users—and such laws are constitutionally infirm as a result. And finally, there are compelling reasons to believe that, because of who and what the laws seek to regulate, they should be subject to a higher standard of scrutiny, in which case they would almost certainly fail to pass muster. These arguments are briefly explored below.

If all the evidence marshalled herein is still not enough to convince courts and legislators that fetal endangerment laws are counterproductive to the stated intent of fetal protection, then legislators must at least enforce the identified state interest in a manner that is rational and nonarbitrary. To this end, these laws should not be underinclusive. Specifically, pregnant women who misuse prescription drugs, alcohol, or tobacco products—all of which are just as or more harmful than illicit drug use—should also be aggressively prosecuted as criminals.[208] The consumption of unhealthy, nonnutritious food during pregnancy should similarly be criminalized.[209] Impoverished pregnant women would likely come under the purview of the law because poverty is related to poor fetal and infant outcomes.[210] Similarly, men who use drugs, alcohol, or tobacco and then father children should also be prosecuted as criminals because evidence increasingly shows that such behavior results in fetal and infant harm as well.[211]

---

207. *Cf. St. Joseph Abbey*, 712 F.3d at 223 ("Mindful that a hypothetical rationale, even post hoc, cannot be fantasy, and that the [state's] chosen means must rationally relate to the state interests it articulates, we turn to the [state's] proffered rational bases for the challenged law."). The question left open is what level of factual perversity must exist in order for a court to invalidate a law on these grounds. Although the subject of this Article presents a compelling example, the contours of the relationship between perversity and irrationality in less factually clear contexts is the subject of future work of the authors.

208. *See* GOODWIN, *supra* note 18, at 140 (describing consensus on the harmful effects of alcohol and smoking on fetal health).

209. The consumption of tap water in some cities could as well. *See id.* at 43.

210. *See id.* at 136–40 (describing how poverty itself results in poorer fetal outcomes and stating that "[a]ny number of the common realities of womanhood and poverty pose risks of harm to fetuses, even under a pregnant woman's most vigilant efforts to protect herself and her pregnancy"); *see also* Press Release, *Victory in the New Mexico Supreme Court!*, NAT'L ADVOC. FOR PREGNANT WOMEN (May 11, 2007), https://perma.cc/ZC7F-2JXT ("Making child abuse laws applicable to pregnant women and fetuses would, by definition, make every woman who is low-income, uninsured, has health problems, and/or is battered who becomes pregnant a felony child abuser. In oral argument, the state's attorney conceded that the law could potentially be applied to pregnant women who smoked." (quoting National Advocates for Pregnant Women staff attorney Tiloma Jayasinghe)).

211. *See, e.g.*, Cynthia R. Daniels, *Between Fathers and Fetuses: The Social Construction of Male Reproduction and the Politics of Fetal Harm*, 22 SIGNS: J. WOMEN CULTURE & SOC'Y 579, 597–98 (1997) (discussing research reports on how men, through their sperm, could cause abnormalities in

If such a proposal strikes the reader as disturbing and dystopian, it should. And yet it rests on the same underlying theories of harm and state interest that form the basis for fetal endangerment laws. Thus, fetal endangerment laws are underinclusive; they fail to address other harmful conduct that has similar effects to the alleged harm of prenatal drug use.[212]

As the discussion on the science of prenatal drug use above portrays, these laws are also overinclusive. Fetal endangerment laws punish pregnant women even in the absence of identifiable harm to fetal or infant life, or when the evidence of such harm is attenuated at best. A recent case in Alabama illustrates this principle. A pregnant woman consumed poppy seed bread the day before she gave birth, and as a result, she tested positive for opioid use at the time of delivery.[213] Although the baby tested negative for opioids and the mother was not abusing opioids, the baby was taken into state custody a mere four hours after delivery.[214] The hospital maintains that it allowed this to happen because of its "commit[ment] to following [state] law and regulatory requirements."[215] A law that deprives women of rights in such circumstances is overinclusive.[216]

In addition to these over and underinclusiveness problems, the Supreme Court has been particularly willing to strike down legislation under rational basis review when it is apparent that the legislation is the result of animus toward a particular group of people.[217] Harm to a politically unpopular segment of the population is an inappropriate government objective.[218] Certainly there is ample evidence that women who use drugs while pregnant are subject to a great deal of

---

offspring due to smoking, alcohol consumption, and drug use); Hye Jeong Lee, Jae-Sung Ryu, Na Young Choi, Yo Seph Park, Yong Il Kim, Dong Wook Han, Kisung Ko, Chan Young Shin, Han Sung Hwang, Kyung-Sun Kang & Kinarm Ko, *Transgenerational Effects of Paternal Alcohol Exposure in Mouse Offspring*, 17 ANIMAL CELLS & SYS. 429, 429–33 (2013) (investigating the transgenerational effect of paternal exposure to alcohol in mouse fetuses and finding that "paternal alcohol consumption prior to conception represents a potential risk to fetal and postnatal development").

212. *See* City of Cleburne v. Cleburne Living Ctr., 473 U.S. 432, 450 (1985) (invalidating ordinance, in part, because it subjected a particular group to regulation that it did not impose on other individuals despite the presence of an identical state interest).

213. Ben Kesslen, *Alabama Mom's Newborn Taken Away After False-Positive Drug Test*, NBC News (Feb. 1, 2020, 8:25 PM), https://www.nbcnews.com/news/us-news/alabama-mom-s-newborn-taken-away-after-false-positive-drug-n1128216 [https://perma.cc/7SMW-N2SH].

214. *Id.*

215. *Id.*

216. Not all over or underinclusive laws have been struck down under rational basis review because the Supreme Court has tolerated "imperfect" fits between a legislative purpose and the means selected to achieve it. *See* Erwin Chemerinsky, *The Rational Basis Test Is Constitutional (and Desirable)*, 14 GEO. J.L. & PUB. POL'Y 401, 414–15 (2016) (collecting examples of over and underinclusive laws that survived rational basis review). But extreme versions of under and overinclusiveness—often paired with concerns regarding animus—have formed the basis for holding a law irrational and thus unconstitutional. *See City of Cleburne*, 473 U.S. at 446–47.

217. *See* U.S. Dep't of Agric. v. Moreno, 413 U.S. 528, 534 (1973) ("[A] bare congressional desire to harm a politically unpopular group cannot constitute a *legitimate* governmental interest.").

218. *See City of Cleburne*, 473 U.S. at 446–47 ("[S]ome objectives—such as 'a bare . . . desire to harm a politically unpopular group,'—are not legitimate state interests." (quoting *Moreno*, 413 U.S. at 534)).

moral judgment,[219] and that such judgment is one of the animating (but often unspoken) principles of fetal endangerment laws.[220] In the face of such moral animus, state laws that single out pregnant drug users for the ultimate deprivation of liberty through the criminal justice system should, at the minimum, be viewed with skepticism.

Finally, it is unclear that rational basis review is the correct governing standard in determining the appropriateness of fetal endangerment laws.[221] These laws, which concern traditionally private decisions regarding reproduction and health, implicate fundamental concerns about equality, autonomy, and choice.[222] Further, setting pregnant women apart as a category subject to additional criminalization may trigger at least the application of intermediate scrutiny.[223] Finally, laws that affect children's lives and well-being through an attempt to control the conduct of adults are likely subject to a more searching level of constitutional review.[224]

***

It is not just the enforcement method that makes these laws dangerous to the health of women and babies.[225] The negative impact of these laws is not limited

---

219. *See* Brico, *supra* note 85 (quoting Stephen Patrick, a neonatologist and an Associate Professor of Pediatrics and Health Policy at Vanderbilt University, who said that "[a]mong people with substance use disorders, there's no one more stigmatized than pregnant women").

220. *See supra* notes 93, 193.

221. The outcome also might reasonably depend on the flavor of rational basis that a court employs. *See* Clark Neily, *No Such Thing: Litigating Under the Rational Basis Test*, 1 N.Y.U. J.L. & LIBERTY 898, 898 (2005) ("[T]he rational basis test is nothing more than a Magic Eight Ball that randomly generates different answers to key constitutional questions depending on who happens to be shaking it and with what level of vigor."). *See generally* Robert C. Farrell, *Successful Rational Basis Claims in the Supreme Court from the 1971 Term Through* Romer v. Evans, 32 IND. L. REV. 357 (1999) (arguing that the Supreme Court's approach to rational basis scrutiny has been inconsistent and cannot be explained by the subject of the classification, the political leanings of the authoring justices, or any other factor).

222. *See City of Cleburne*, 473 U.S. at 440 (noting that strict scrutiny is required "when state laws impinge on personal rights protected by the Constitution").

223. *See* Ocen, *supra* note 12, at 1169 (arguing that the prosecution of pregnant women implicates fundamental rights and privacy and noting that "criminalization and incarceration have long been used as a means to police gender norms"); *see also* GOODWIN, *supra* note 18, at 176–77 ("A sex equality argument in fetal protection would ask whether state interventions are really about promoting fetal health, or whether fetal protection laws might also manifest constitutionally repugnant judgments about women, particularly pregnant women."). Indeed, the Court has held that discrimination on the basis of pregnancy does not constitute gender discrimination. *See* Geduldig v. Aiello, 417 U.S. 484, 485, 496–97 (1974). However, there are reasons to believe the Court might rule differently if it were presented with that question today. *See* GOODWIN, *supra* note 18, at 180–82.

224. *See* Plyler v. Doe, 457 U.S. 202, 223–24 (1982) ("In determining the rationality of [the state legislation], we may appropriately take into account its costs to the Nation and to the innocent children who are its victims. In light of these countervailing costs, the discrimination contained in [the legislation] can hardly be considered rational unless it furthers some substantial goal of the State.").

225. Although reliable data on the exact number of prosecutions under fetal endangerment laws is not available, prosecutions are still relatively uncommon. Contrast the approximately 1,000 confirmed prosecutions with the "tens of thousands of . . . women" who likely have used opioids in pregnancy. Bridges, *supra* note 43, at 793, 804. The number of prosecutions, however, is also seriously underreported. *See id*. at 804 n.196.

to those women who are actually charged with a crime.[226] The mere threat of potential prosecution—and with it the possibility for a loss of liberty and parental rights—is sufficient to undermine the doctor–patient relationship and disincentivize prenatal care and substance abuse treatment.[227] This is especially true for populations that are already marginalized and are rationally distrustful of the healthcare and criminal justice systems. Moreover, these laws can embolden private and state actors to overstep the mandates of such laws.[228] Thus, the harm that accrues as a result of fetal endangerment laws is outsized to the small number of prosecutions.

CONCLUSION

Looking out at the horizon, it would be rational to conclude that the world is flat. To do so in the face of overwhelming scientific evidence to the contrary, however, would be patently irrational.

This Article adds yet another piece of compelling evidence to the unanimous consensus[229] that fetal endangerment laws cause harm. In making that argument, it relies on new empirical evidence that these laws create outcomes perverse to their stated intent—namely, that they increase fetal and infant harm. As such, this Article concludes that states should be constitutionally prohibited from continuing to enforce fetal endangerment laws or enacting new ones.

The world is round. Insistence to the contrary by those who have the power to enforce their worldview through criminal sanction is intolerable.

---

226. *See* GOODWIN, *supra* note 18, at 28 ("[T]he full scope of liberty-infringing pregnancy interventions, including threats of arrest and other coercive conduct that does not necessarily lead to criminal punishment, is unknown.").

227. *See* Editorial, *supra* note 59 ("Rarely will a woman who lost an unborn child be charged with murder. Yet the mere existence of criminal statutes aimed at forcing women to make decisions to protect their fetuses — even at the expense of their own health — has injected fear into maternity wards and operating rooms, complicating even routine health care decisions.").

228. *See* Goodwin, *supra* note 6, at 797 ("[F]etal protection laws embolden some doctors to threaten criminal punishment even when no crime has been committed."); Grimes, *supra* note 7 (detailing efforts of Texas prosecutors to bring charges against pregnant women for prenatal drug use despite clear Texas law that prohibits such prosecutions).

229. *See supra* Part II; *supra* notes 162–67 and accompanying text.