

When Dual Incentives Become Dueling:
Public Health Consequences of Responsiveness to Pro-Life Sentiment

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Those elected into office are tasked with the dual responsibilities of representing public preferences as well as taking a leadership role in defense of the public health and safety of their electorate. What are the consequences when public opinion is in tension with public health interests? Looking within the context of women's health, over which there has been extensive federal and state-level activism resulting in numerous state-level constraints on access, I address the public health consequences of abortion clinic access in the states between the years of 2008 and 2013, relying on health outcomes measures provided by the Centers for Disease Control and Prevention and the Kaiser Family Foundation. I find that greater access to clinics is strongly associated with reductions in cases of sexually transmitted diseases, HIV diagnoses, the teen birth rate, and reliance upon emergency room as opposed to outpatient care. The results suggest that investment in these services have public health consequences including but extending far beyond the domain of abortion, such that responsiveness to pro-life sentiment in the states may come with adverse health and economic consequences.

While the American political parties often disagree pointedly on a number of key matters of public policy, there is relatively little dispute as to many of the key responsibilities of members of Congress, namely, to represent their constituents' preferences and to protect their public health and safety, the "general welfare" of the citizenry. Voters and their representatives thus engage in a principal-agent relationship wherein voters hold accountable members of the government who are tasked with representing their preferences and interests. This begs the question of what legislators' "best practice" is when the public's views on matters of health and welfare become in tension with the empirical facts on these issues. If our representatives are truly meant to *represent*, then there may be some normative desirability in responding to public preferences when casting votes in the legislature. But when Congress's dual incentives become dueling, what are the real-world policy consequences that responsiveness? This is the question that I work to explore in the context of women's health outcomes and responsiveness to pro-life sentiment in the states.

Among the more salient social policy issues in American politics is that of abortion, with Gallup reporting an electorate quite divided between identifying as pro-choice versus pro-life. Since the Supreme Court's landmark decision of *Roe v. Wade* (1973), a woman's right to terminate her pregnancy has, within limits, been established at the state and federal levels. However, the subsequent landmark case of *Planned Parenthood of Southeastern Pennsylvania v. Casey* (1992), while affirming the basic premise of *Roe*, invited states to take a leadership role in setting abortion policy, conditional upon not imposing an "undue burden." Thus, the Court established the admittedly murky bounds within which abortion would be permitted given the age or health of the woman, the extent of counseling provided, or the stage of the pregnancy, to name a few constraints enacted into law at the state level over the years.

Alongside shifts in public opinion on abortion, many states have witnessed declines in access to abortion clinics in the United States, with the average share of counties without abortion providers increasing from 76% in 2008 to 80% in 2011 according to the Guttmacher Institute (see also Jones and Jerman 2014). Some states have witnessed more dramatic changes, with Nevada moving from 76% to 88% of counties lacking a provider, while other more conservative states (*e.g.*, Mississippi) approached all counties lacking providers. Figure 1 plots the average number of clinics per state per year, demonstrating a noticeable decline since 2008. The overall number of clinics has declined

in recent years in the majority of states, with the adoption of so-called TRAP laws (Targeted Regulation of Abortion Providers)¹ yielding more marked declines in such regions as Texas, which saw approximately half of its clinics close between 2013 and 2016 (Ura et al 2016). Such regulations have been framed around protection of the health and safety of the woman receiving care, though the Supreme Court called into question the validity of those health-related claims in its invalidation of key aspects of Texas law H.B. 2 in *Whole Woman's Health v. Hellerstedt* (2016). Setting aside the merits of such regulations on abortion facilities, I evaluate here the consequences of changes in abortion clinic availability with respect to non-abortion public health outcomes.

Planned Parenthood's 2014-2015 Annual Report enumerates the distribution of the organization's services defined as "discrete clinical interactions," with 3% of services allocated toward abortions, 7% toward cancer screening and prevention, 45% toward the testing and treatment of sexually transmitted diseases, 31% toward contraception, 13% toward other women's health services including pregnancy testing and prenatal care, and 1% toward other services including adoption referrals. While there is variation by clinic location, some clinics additionally offer primary care services including diabetes screening, blood pressure screening, the treatment of urinary tract infections, physical exams, and smoking cessation.

The precise allocation of services has been widely debunked (Lee 2015), though what is undisputed is that many services are allotted to non-abortion care, suggesting that changes in access to these clinics would have effects including but extending beyond abortion access. Indeed, for two-thirds of the 491 counties surveyed by the Guttmacher Institute, Planned Parenthood clinics served at least half of the women receiving their contraceptive care from safety-net health centers, with one-fifth of those counties having Planned Parenthood as the *sole* source of contraceptive care (Frost & Hasstedt 2015). Constraints on Planned Parenthood facilities further were tied to an outbreak of Human Immunodeficiency Virus (HIV) in Indiana when clinics' defunding eliminated not just women's health services but Scott County's only HIV testing center (Rutter 2015), providing some evidence of the broader health ramifications of pro-life policy implementation where other

¹Such laws include requirements that abortion clinics meet hospital-like standards with respect to the size of rooms and width of hallways, that providers have admitting privileges at local hospitals, and that care be restricted to physicians as opposed to nurse practitioners.

means of access to these services is scarce.

Relying on the number of Planned Parenthood clinics located annually in each state, along with health-related data made public by the Centers for Disease Control and Prevention and the Kaiser Family Foundation, I evaluate here the public health consequences of abortion clinic closures in the states. I focus in particular on the prevalence of sexually transmitted diseases, the teen birth rate, HIV cases, and reliance on emergency room as opposed to on outpatient medical care, from the years 2008 through 2013.

Government Investment in Public Health

It is hardly a secret that despite poor outcomes on many dimensions,² the United States invests heavily in its healthcare system. According to the Centers for Medicare and Medicaid Services (CMS), in 2014 the United States healthcare spending increased to \$3 trillion, an increase from previous years due to the expansion of healthcare coverage under the Affordable Care Act, and accounting for approximately 17.5% of the American economy. Such immense investments are with the dual incentives of caring for existing sickness of the American population and investing in preventive care aimed at obviating the need for costlier treatment.

From both public health and economic perspectives, the federal government has a vested interest in the prevention of sexually transmitted diseases, of which the Centers for Disease Control and Prevention estimated a total of 110 million infections as of 2010, requiring \$16 billion in medical costs (Centers for Disease Control and Prevention, 2013). An additional \$20.8 billion was requested for the 2017 Fiscal Year toward the care and treatment of those with HIV and AIDS (Kaiser Family Foundation 2016), with the costs associated with one's own treatment an additional financial burden that places pressures on patients attempting to balance living and medical expenses.

The prevention of teenage pregnancy is further of economic and social importance to the United States government, with only 40 percent of teen mothers completing high school (Shugar 2012), in turn increasing the likelihood of incarceration and reducing the prospects of higher-paying employ-

²The Commonwealth Fund reported in its 2015 issue brief on international health policy that the United States vastly exceeded the 12 other Organization for Economic Cooperation and Development (OECD) nations with respect to health care spending per capita, though despite high allocations had shorter life expectancy and a greater prevalence of chronic conditions.

ment (Breslow 2012), with lower socioeconomic status (SES) in turn associated with poorer health outcomes (Adler and Newman 2002). The National Campaign to Prevent Teen and Unplanned Pregnancy estimated that the total cost to taxpayers associated with teen childbearing was \$9.4 billion in 2010, determined based on a combination of public sector health care costs (\$2.1 billion), child welfare costs (\$3.1 billion), and costs associated with incarceration (\$2 billion), along with other expenses not enumerated. Thus, investing in the prevention of teen pregnancy has additional public health and economic benefits that the government can potentially reap, and I expect there to be a substantial relationship between investment in women’s health clinics and subsequent declines in the extent to which we observe teen childbearing. This effect is borne out in Figure 2, which plots the relationship between the number of Planned Parenthood clinics and the teen birth rate, showing the expected substantial negative relationship between the two at this simple bivariate level.

Finally, the reliance on emergency room care has been cited as a strain on the American health-care system and a source of high costs, while being associated with homelessness, poverty, victimization, physical and mental illness, substance abuse, and poor access to primary care (Kushel et al 2002). Reducing emergency room overcrowding can potentially reap great financial reward, yielding shorter hospitalizations and shifting more care to being on an outpatient basis. While Weisz et al (2015) note that expansion of access to care under the Affordable Care Act would likely be inadequate to reduce emergency room overuse, they note that 30% of those whom they sampled had no primary care provider and 29% were unable to schedule a primary care appointment, suggesting that this dearth of access is at least one contributor to this public health problem.

Because of the range of services provided at Planned Parenthood and affiliate clinics, I expect that the changes in the extent of access to abortion clinics over time in the states will be associated with changes in the rates of sexually transmitted diseases, teen births, HIV diagnoses, and reliance on emergency room care.

The Data

I examine four separate outcomes of interest. The *STD Rate* is derived from the Centers for

Disease Control and Prevention’s Sexually Transmitted Disease Surveillances of 2008 through 2013, and is the combined rates of the common sexually transmitted diseases of chlamydia, gonorrhea, and syphilis, measured by state by year.³ The *STD Rate* has a mean of 533, and ranges from 171 to 1691 over the course of the sample. The *teen birth rate* is the number of live births that are to mothers between the ages of 15 and 19, estimated by state by year, using data provided by the Centers for Disease Control and Prevention. Birth rates are estimated by the mother’s state of residence, and are births per 1,000 women with population data drawn from the United States Census. *Teen birth rate* has a mean of 33, and ranges from 11 to 64.

HIV Diagnoses is the rate of diagnosis of HIV by state of residence by year, and are drawn from the Centers for Disease Control and Prevention’s HIV Surveillance Reports. It ranges from 1 to 200 over the course of the data. *ER Reliance* is the ratio of emergency room visits to outpatient medical visits, relying on data made public by the Kaiser Family Foundation. the hospital utilization data of which they report as being drawn from the American Hospitalization Association’s Annual Survey. Higher values indicate that there is a reduced emphasis on outpatient care as opposed to emergency room services. I multiplied the variable by 100 to facilitate easier interpretation of the results, and it ranges from 9 to 37 with a mean of 20. I expect that increasing abortion clinic access will have significant and negative effects on each of these four outcomes of interest.

The main independent variable is the *clinic access per capita*, which is the number of Planned Parenthood clinics in operation in each state in a given year between 2008 and 2013 – ranging from 0 to 113 – divided by the state population according to the United States Census.⁴ While looking instead at the raw number of clinics produces comparable results, it fails to account for the highly variable populations of states such as Texas versus New Hampshire, and thus is less informative.

Because of the widely noted relationship between economic standing and health outcomes (*e.g.*, Venkataramani et al 2016; Woolf and Braveman 2011; Fiscella et al 2000; Sorlie et al 1995), I control also for the state’s estimated *poverty rate*, as well as the rate at which the state’s population is estimated to be *uninsured* affording to annual data made public by the Kaiser Family Foundation.

³The data are comprised of reported rates of disease per 100,000 in the population for each state, estimated annually by state and local health departments.

⁴I divided the state populations by 100,000 to facilitate easier interpretation. Examining logged clinic access does not meaningfully affect the results.

Lastly, I include the *year* to account for a linear time trend.

The data are time-series cross-section, covering the fifty states plus the District of Columbia (N=51), over the time period of 2008 to 2013 (T=6), and allowing for the testing of theories pertaining to temporal as well as cross-sectional factors contributing to these health outcomes. Because the dependent variables are all continuous, I utilize ordinary least squares (OLS) with panel-corrected standard errors (PCSEs). While PCSEs address contemporaneous correlation, they do not address serial correlation, which is common to time series data.

To assess the presence of autocorrelation, I performed Wooldridge tests with respect to each of the four dependent variables. The significant test statistics that were produced in each case confirms the presence of autocorrelation, and thus I combine the PCSEs with Prais Winsten, which addresses AR(1) serial correlation. Because they are linear models, results can be interpreted directly, with a unit increase in x associated with a β -unit increase in y .

Results

Models 1 through 4 of Table 1 report the main results. While the effect of clinic access falls to the .10 level of statistical significance with respect to *HIV diagnoses*, in all other cases I observe a powerful and statistically significant effect of clinic access and the *STD rate*, the *teen birth rate*, and *ER reliance*. Indeed, a standard deviation increase in clinic access appears to be associated with a 14.12 standard deviation decline in the rate of sexually transmitted diseases, a .97-standard deviation decline in the rate of teen births, a .90-standard deviation decline in HIV diagnoses, and a 1.09 standard deviation decline in reliance on emergency room care.

Also consistent with expectations and the literature on the economic determinants of health, higher rates of poverty appear to be associated with vastly higher rates of STDs, teen births, HIV diagnoses, and reliance on emergency rooms. The effect of the *percent uninsured* is less clear, with the expected positive and significant effects on teen births and ER utilization, but effects that were not significant (and negatively signed) with respect to STD and HIV diagnoses. One possibility for these inconsistent effects is the difficulty that many report in using their health insurance due to out-of-pocket costs, thus potentially limiting the impact of nominally having coverage (Commonwealth Fund Biennial Health Insurance Survey of 2014), though this relationship deserves further inquiry.

Because one may not immediately feel the impact of changes to clinic access, as a robustness check I provide in Table 2 model specifications in which the main independent variable is instead the *clinic access* lagged by one year. Here, I find that the results are somewhat weakened overall, with continued negative and significant impacts on the teen birth rate as well as ER reliance, but with the STD and HIV diagnosis rates falling below conventional levels of statistical significance, albeit still negatively signed. Here, I find that a standard deviation increase in clinic access is associated with a 1.06 standard deviation decline in the teen birth rate and a 1.05 standard deviation decline in the reliance on emergency room care. The effects of poverty and the uninsured rates remain consistent with those reported in Table 1. Thus, while the effects on STD and HIV diagnoses are not robust to this alternative specification, the overall picture continues to suggest at least in the cases of teen births and ER utilization that the extent of clinic access has important health consequences beyond the specific domain of abortion.

Discussion

When state and federal representatives take office, they are faced with dual, and at times dueling, goals of representing the public's preferences while also protecting the well-being – economic and physical – of those very people. With candidates for elected office seeking to garner the support of voters through a combination of policy and personal appeals, to expect substantive representation by those ultimately elected is altogether reasonable, even normatively desirable. However, the tradeoffs between substantive representation and promotion of the general welfare in cases of reproductive health are not obvious. How legislators manage this tension can have important and lasting consequences for large swaths of the people whom they work to represent.

The policy issue of abortion is particularly heated, both as a partisan matter and a religious matter, and the reach of reproductive choice is discussed frequently in the context of elections and judicial hearings. While well-meaning people have committed themselves to both sides of this debate, this paper sought to investigate the broader public health consequences of reducing access to women's health clinics, which provide abortions among other services. That the prevalence of clinics allows for abortion access but also appears to powerfully reduce the rates of the costly public health problems of sexually transmitted diseases and teen births, along with reducing the reliance on

the costlier emergency room care, creates a normative tension in adjudicating between responding to pro-life sentiment and protecting the public health of the citizenry. The results suggest that it is advantageous to continue investment in women's health clinics, both from public health and economic standpoints, rather than reduce services at the risk of adverse health outcomes.

Figure 1: Average Number of Abortion Clinics Per State

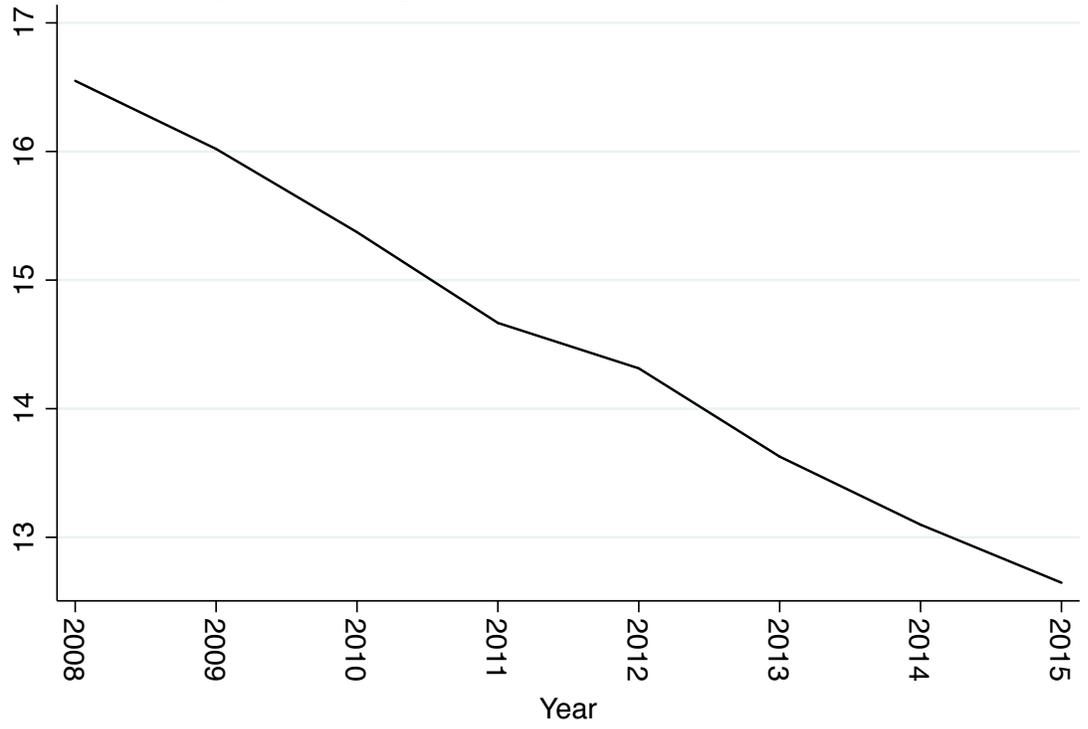
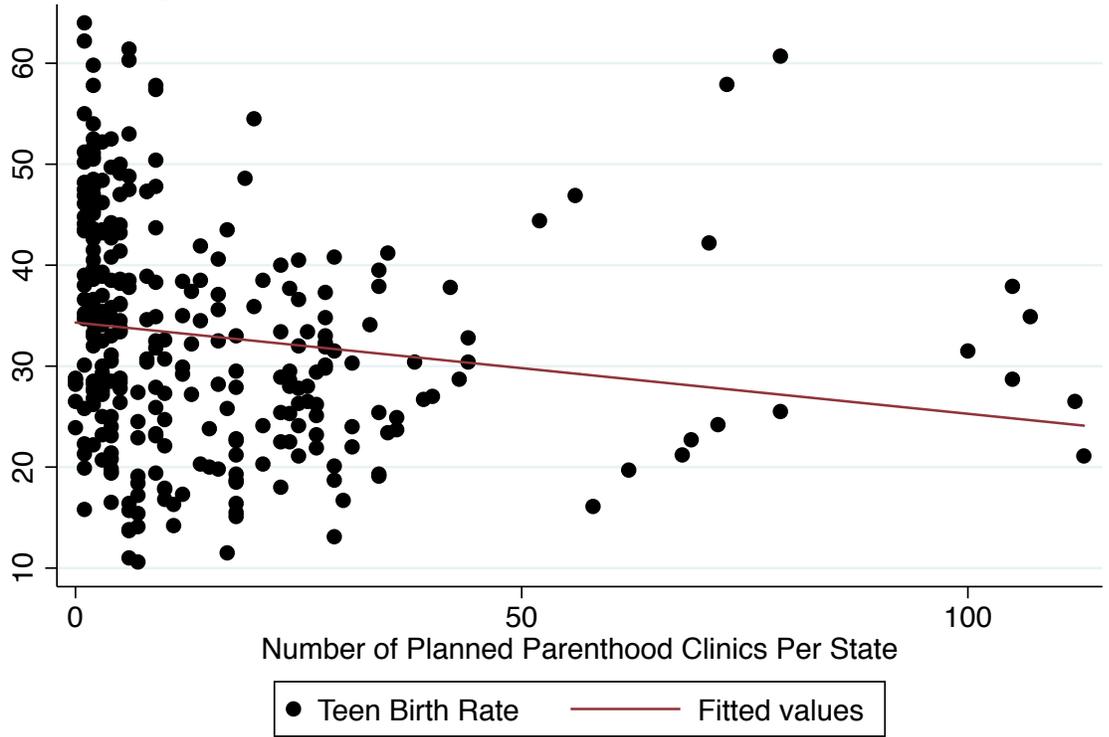


Figure 2: Effect of Clinic Access on Teen Birth Rate, 2008-2013



Source: Teen birth rate data drawn from Centers for Disease Control

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Table 1: Effects of Clinic Prevalence

| | (1) | (2) | (3) | (4) |
|-------------------|-----------|-----------------|--------------------|-------------|
| | STD Rate | Teen Birth Rate | HIV Diagnoses | ER Reliance |
| Clinic Access | -47.23* | -3.25*** | -3.01 [†] | -3.63** |
| | (21.63) | (1.02) | (1.63) | (1.31) |
| Poverty Rate | 28.72** | 1.52*** | 1.50*** | 0.42*** |
| | (5.23) | (0.25) | (0.45) | (0.11) |
| Percent Uninsured | -3.90 | 0.52*** | -0.48 | 0.23* |
| | (2.79) | (0.15) | (0.31) | (0.10) |
| Year | -4.59 | -3.74*** | -1.36*** | -0.21 |
| | (4.85) | (0.40) | (0.37) | (0.14) |
| Intercept | 9416.25 | 7516.83*** | 2767.14*** | 440.96 |
| | (9734.04) | (799.68) | (736.86) | (277.63) |
| N | 306 | 306 | 306 | 306 |
| R ² | 0.49 | 0.88 | 0.16 | 0.71 |

*** $p < .001$, ** $p < .01$, * $p < .05$, [†] $p < .10$

Table 2: Effects of Clinic Prevalence (Lagged)

| | (5) | (6) | (7) | (8) |
|------------------------------|------------------------|------------------------|-----------------------|--------------------|
| | STD Rate | Teen Birth Rate | HIV Diagnoses | ER Reliance |
| Clinic Access _{t-1} | -6.36 (23.54) | -3.47*** (0.92) | -0.83 (1.74) | -3.42** (1.32) |
| Poverty Rate | 28.50*** (5.70) | 1.55*** (0.25) | 1.57*** (0.44) | 0.43*** (0.11) |
| Percent Uninsured | -1.72 (3.12) | 0.57*** (0.15) | -0.21 (0.31) | 0.31** (0.12) |
| Year | -0.98 (5.14) | -3.59*** (0.47) | -0.83** (0.27) | -0.08 (0.15) |
| Intercept | -1825.09 (10313.48) | 7226.56*** (952.03) | 1673.56** (548.56) | 169.38 (295.28) |
| N | 255 | 255 | 255 | 255 |
| R ² | 0.52 | 0.88 | 0.14 | 0.71 |

*** $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$