

# Contraception Deserts: The Effects of Title X Rule Changes on Access to Reproductive Health Care Resources

*Candis Watts Smith* 

Penn State University

*Rebecca J. Kreitzer*

University of North Carolina–Chapel Hill

*Kellen A. Kane*

University of North Carolina–Chapel Hill

*Tracee M. Saunders*

University of Iowa

Historically, access to contraception has been supported in a bipartisan way, best exemplified by consistent congressional funding of Title X – the only federal program specifically focused on providing affordable reproductive health care to American residents. However, in an era of partisan polarization, Title X has become a political and symbolic pawn, in part because of its connection to family planning organizations like Planned Parenthood. The conflicts around Title X highlight the effects of intertwining abortion politics and contraception policy, particularly as they relate to reproductive justice and gendered policy making. Family planning organizations like Planned Parenthood have responded to these battles by bowing out of the Title X network. To what

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extent have contraception deserts — places characterized by inequitable access to Title X — developed or expanded in response to policy changes related to contraception and reproductive health? What is the demographic makeup of these spaces of inequality? We leverage data from the Office of Population Affairs and the U.S. Census Bureau and use the integrated two-step floating catchment area method to illustrate the effects of a major change in the Title X network in 10 states. Our results reveal the widespread human ramifications of increasing constraints on family planning organizations as a result of quiet but insidious federal bureaucratic rule changes.

**Keywords:** federalism, contraception, abortion, Title X, Planned Parenthood, spatial analysis, inequality, gendered policy making, reproductive justice

Between the 1960s and the early 2000s, public policy concerning access to contraception garnered widespread bipartisan support. Democrats and Republicans did not necessarily have the same reasons for supporting access to affordable, voluntary, evidenced-based contraception (McFarlane and Meier 2001),<sup>1</sup> but their combined enthusiasm allowed important (though not all) aspects of reproductive justice to be enjoyed by a large swath of Americans.<sup>2</sup> As a result of this bipartisan orientation, the federal government, during the latter part of the twentieth century, implemented programs like Title X, which aimed to promote access to affordable contraception, especially for those who are young, low-income, and members of historically underserved groups. Nonetheless, over the past two decades, the politics of contraception has become increasingly intertwined with the politics of abortion (Aiken and Scott 2016; Gold and Hasstedt 2016). These changing dynamics are part and parcel of the partisan realignment and polarization of gendered policy platforms that began in the 1980s (Conover and Gray 1983; Wolbrecht 2000). They have resulted not only in greater political tension around access to reproductive health care, but also, as we reveal here, higher barriers to the resources channeled through programs like Title X and the expansion of contraception deserts.

Even though many states enacted contraception mandates long before the implementation of the Affordable Care Act (VanSickle-Ward and Wallsten 2019), the controversy over what kinds of entities should be

1. What is considered “evidence-based” and “broad range” is in flux. In March 2019, the Trump administration published a rule that removed the requirement that contraception be “medically approved” methods (Hasstedt 2019).

2. Solinger (2013) explains that the reproductive justice movement “regards women’s right to reproduce as a foundational human right” and notes that this movement makes three broad claims: “First, that women has the right to manage their reproductive capacity,” including the right to an abortion. “Second, that women has the right adequate information, resources, services and personal safety while pregnant,” and “finally, a woman has the right to be the parent of her child.”

required to incorporate reproductive resources into the wider sphere of high-quality health care has recently come into high relief, partly as a result of U.S. Supreme Court cases such as *Burwell vs. Hobby Lobby Stores Inc.* (2014) and *Little Sisters of the Poor vs. Pennsylvania* (2020). What is more, these prominent cases revealed that, on a basic level, access to evidenced-based, Food and Drug Administration (FDA)–approved medications that largely affect women’s health is, in and of itself, a matter of debate. These cases ultimately made clear that closely held companies and religious organizations did not have to provide coverage for contraception if doing so violated sincerely held beliefs.

Conservatives have suggested that the policy ramifications of decisions like *Hobby Lobby* or *Little Sisters* do not preclude women from gaining access to affordable contraception because they can rely on the resources provided by the federal government, through a program called Title X (Totenberg 2020). Indeed, Title X is the only federal program exclusively dedicated to providing affordable, confidential contraception and related reproductive health care to American residents (McFarlane and Meier 2001), so there is some truth to this. While closely held companies are not legally required to provide comprehensive reproductive health care or to do so in a way that would allow women, in particular, to fully control their destinies, a federal government that elects to provide reproductive health care must do so equitably. Extant research highlights the patchwork of inequality in the way that federally funded health care resources like Medicaid are allocated (Michener 2018). This article contributes to this growing literature and critical body of evidence by illuminating the geography of inequality as it relates to federal resources for contraception and other related reproductive health care.

To be sure, Title X, a key case study in gendered policy, has become a pillar of the American health care system (Flynn 2013), and yet it has also become increasingly unable to fulfill its original mandate to provide affordable, voluntary, high-quality reproductive resources to American families. This is largely due to its connection with Planned Parenthood. Among Title X–funded clinics, Planned Parenthood represents just over one in 10 of these clinics, but the organization treats two out of five Title X clients. Although Title X funds cannot be used for abortions, many conservatives reason that allowing organizations that provide abortions to receive Title X funds is akin to making a distinction without a difference; from this perspective, “money is fungible, they say, so any reimbursement or grant frees up money for Planned Parenthood to terminate pregnancies” (Green 2019). This logic, viewed from another

perspective, suggests that attacks on programs like Title X are a roundabout way to reduce access to abortion, with contraception as collateral damage.

This debate has turned Title X into a symbolic political pawn. The program, which focuses on *contraception* and reproductive health care for low-income people, has been transformed to more closely align with the desires of *anti-abortion* proponents through a series of bureaucratic rule changes initiated and implemented by Donald Trump's administration. In the wake of the first rule change in April 2017, and in anticipation of additional changes to come, researchers and health care professionals predicted that many providers would (be forced to) drop out of the program and that millions of Americans would be negatively affected, especially low-income people and people of color (Beaman and Schillinger 2019; Bronstein 2018).

The first prediction has come to pass: prominent grantees of the program — including Planned Parenthood as well as states such as Maine, Vermont, and Washington — have refused to comply with the rule changes, and thus have withdrawn from the program. Our goal in this article is to ascertain the magnitude of these effects with respect to the number and demographic profile of individuals who may face increasing difficulty accessing affordable, evidenced-based reproductive health care services. We seek to answer the following questions: How have changes to Title X eligibility and funding rules influenced access to Title X clinics? Specifically, does the loss of Title X funding to Planned Parenthood translate into declining access to this publicly funded program? Who is most likely to be affected?

Keeping in mind that Title X is implemented quite differently across the states, we also seek to discern whether some states have been more inoculated from the effects of the most recent rule changes. Kreitzer, Smith, and their colleagues (Kreitzer and Smith 2016; Saunders, Kreitzer, and Smith 2018) put forward the concept of *contraception deserts* — spaces characterized by inequitable access to Title X resources, and thus marked by concentrated disadvantage. Here, we build on this research by conducting a comparative analysis of these effects across 10 states to determine whether contraception deserts have grown because of Planned Parenthood's withdrawal from Title X.

We begin this article by describing the relationship between Title X and Planned Parenthood; this entanglement and any changes to it are likely to have widespread ramifications for reproductive health care access for millions of Americans. Then, we discuss frameworks of access and the notion of a geography of health. Thereafter, we examine more closely

the concept and measurement of contraception deserts. Contraception deserts illuminate ramifications that stem from the confluence of race, class, space, and health. To uncover the existence and scope of contraception deserts, we adopt a methodological strategy used by scholars of geography and public health that accounts for spatial and aspatial barriers to accessibility: the integrated two-step floating catchment area (2FCA) method.

With this information as a backdrop, we ascertain the demographic profile of Americans most acutely affected by these rule changes. We determine the number of people who lived in contraception deserts in 10 states prior to the removal of Planned Parenthood from the Title X program, as well as those captured in new or expanded contraception deserts after the organization withdrew from the program. We close with a note on the implications of our findings, limitations of this research, and new questions that arise.

## TITLE X AND PLANNED PARENTHOOD

Both Democrats and Republicans have historically supported affordable, voluntary access to contraception. In 1967, then-congressman George H. W. Bush asserted that federal agencies should “work even more closely with going private agencies such as Planned Parenthood” to ensure that all American women who wanted birth control had access to it (Rodberg 2011). Just a few years later, Richard Nixon asserted, “It is my view that no American woman should be denied access to family planning assistance because of her economic condition” (quoted in Bailey 2012, 62). Soon after, in 1970, when Congress passed and President Nixon signed Title X of the Public Health Services Act, they ensured that American families had voluntary access to contraception. Title X is the only federal program focused specifically on providing access to family planning and reproductive health resources (McFarlane and Meier 2001).

### The Mechanics of Title X

Although programs like Medicaid provide a great deal of resources for reproductive health care, Medicaid is *insurance*. Even with insurance, individuals still need a place to attain services. A key attribute of Title X-funded clinics is that they are *physical places* where the public can go to attain confidential, evidence-based services and resources for

reproductive health care regardless of financial need, citizenship or immigration status, gender, age, or insurance status. Additionally, while private doctors are neither required to accept Medicaid nor to provide services to the public in an equitable manner, Title X–funded clinics must.

Title X differs from Medicaid and other federal programs in other ways. Title X is administered by 10 regional offices of the U.S. Public Health Service rather than by state or welfare departments. Organizations – be they states, federally qualified health centers (FQHCs), or nonprofits – must apply for funds. Grants are awarded on a competitive basis, so Title X grantees must “win” their funds from the federal government (McFarlane and Meier 2001). Each state has at least one Title X grantee. In about half the states, the state is the sole grantee, while in others, there are multiple grantees; in either case, grantees may allocate the funds and tasks to subgrantee organizations (National Family Planning and Reproductive Health Association 2016).

Historically, each Title X–funded clinic was required to offer “a broad range of acceptable and effective medically approved contraceptive methods and related services” (Office of Population Affairs 2014). Aside from a complete exclusion of abortion procedures, clinics provide a plethora of combinations of resources. Generally speaking, Title X–funded clinics also deliver preventive health services, such as cervical and breast cancer screening; HIV prevention education, testing, and referral; and pregnancy diagnosis and referral. The services must be provided on a voluntary and confidential basis. Confidentiality was also guaranteed to unemancipated minors. Although Title X was initially intended “to assist in making comprehensive voluntary family planning services available to all persons desiring such services,” the implementation has largely focused on low-income and young people (McFarlane and Meier 2001, 61). Nonetheless, grantees may choose to require a fee based on a sliding scale to those whose incomes are above the federal poverty level.

The standards to be a successful applicant to the program are high, but organizations like Planned Parenthood are quite adept at providing the kind of care and resources that have traditionally been required by Title X. In 2019, the Title X network included approximately 4,000 clinics across the nation, which, in turn, *directly* provide services to about 4 million people. While Planned Parenthood clinics make up only 13% of all Title X clinics, they directly serve 41% of all Title X patients (Planned Parenthood Action Fund [n.d.](#)). We emphasize “directly” because Title X grants make up almost 20% of revenue for many family planning

organizations that participate in the program. These funds go toward staff salaries, training, and rent (Sobel and Salganicoff 2019). Taken together, one can safely predict that any disruption in Title X, particularly with respect to Planned Parenthood, could produce major ripple effects that would extend beyond the 4 million Title X clients.

### State Variations and Federal Rule Changes

Changes in the relationship between Title X and Planned Parenthood due to the political dynamics of intertwining abortion and contraception policy have been foreshadowed in state houses as well as in Congress. For instance, in 2011, congressional Republicans made the first-ever effort to completely eliminate the program (Hasstedt 2013; Rodberg 2011). The U.S. Senate and President Barack Obama were able to halt these plans, but where congressional Republicans failed, many conservative-led state legislatures were able to use their power to produce the intended outcomes of their congressional counterparts. During the Obama administration, experts noted, the “danger for Title X [was] more at the state level” (Flynn 2013).

States have a great deal of power over the distribution of family planning services, not only because many states are the sole Title X grantee, but also because state legislatures can implement policies that dictate how federal funds are allowed to be used by (nongovernmental) organizations. Consequently, there is a great deal of state-by-state variation in how Title X funds are allocated, especially to organizations like Planned Parenthood. Several states have made efforts to prevent state funds from flowing through family planning organizations that provide abortions alongside other reproductive health care services (Gold and Hasstedt 2016).

For instance, research shows that when Texas prevented Title X funding from going to Planned Parenthood, the effects were swift and clear. Andrea Flynn (2013) explains, “Four out of the eight Planned Parenthood clinics in the Rio Grande Valley — one of the nation’s most underserved regions — were forced to close, and those that remained open reduced hours, cut staff, and stopped providing some of the most desirable and effective methods of birth control.” At the very least, states that are sole grantee can elect not to designate planning organizations like Planned Parenthood as subgrantees. In contrast, Planned Parenthood is a central player in the way these federal resources are allocated in some other states. For example,

Planned Parenthood served about 70% of Michigan's Title X clients and 90% in Utah (Green 2019; Sadeghi and Wen 2019).

The tug-of-war between state and federal power and policy during the Obama administration was turned on its head during the Trump administration; ultimately, through a slate of bureaucratic rule changes, the executive branch of the federal government produced a deep rift between Title X and Planned Parenthood. Beginning in 2017, the Trump administration turned back Obama-era rules and implemented policies that not only transformed the way that Title X works but also severed the relationship between Title X and family planning organizations like Planned Parenthood. Both outcomes were intended by many contemporary conservative policy makers and interest groups (Bazelon 2017). Table 1 outlines the major changes to the policy and their ramifications for service delivery. In response to the accumulation of these changes, a number of states as well as family planning organizations like Planned Parenthood chose to withdraw from the Title X program.<sup>3</sup>

These changes have put a greater strain on a program whose budget has not grown in proportion to its demand or to inflation, making many of the remaining Title X-funded clinics less sustainable over the past several years (Flynn 2013). The withdrawal of a family planning organization like Planned Parenthood could produce or expand what Kreitzer and Smith (Kreitzer and Smith 2016; Saunders, Kreitzer, and Smith 2018) refer to as *contraception deserts*, places where individuals who need affordable reproductive health care services face barriers to accessing them. An underlying goal of this article, then, is to speak to the meaning of the increasing restrictions on Title X for federalism and state policy making, as well as the ramifications for gendered policy that disproportionality impacts marginalized and vulnerable Americans.

## CONCEPTUALIZING CONTRACEPTION DESERTS

A growing body of literature reveals that where you live has an incredible impact on your life chances and your health, a specific point of concern for this article (Center on Society and Health 2015; Chetty et al. 2016;

3. Sobel and Salganicoff (2019) explain, "In addition to the 400 Parenthood sites, over 600 additional clinics, composed of state health departments, federally qualified health centers, and nonprofit organizations are no longer using Title X funds to support services for low-income and uninsured individuals."



*Table 1.* Federal policy changes to Title X and related policy

<i>Policy Change</i>	<i>Consequence for Title X and Delivery of Services</i>
1970: Title X of the Public Health Services Act was enacted with bipartisan support of Congress and signed by Republican President Richard Nixon.	
2010: The Affordable Care Act, which includes a “contraception mandate,” was enacted.	→ Title X-funded clinics became a more critical component of the health care system, as they served to accommodate the increased number of individuals who could obtain services.
2011–13: Several state-level legislatures enacted policies to curtail the flow of funds to the kinds of family planning organizations Congress intended to receive. Meanwhile, other states reduced family planning budgets altogether. <sup>a</sup>	→ These changes increased the strain on traditional, high-quality family planning organizations, such as Planned Parenthood. The Obama administration responded to these state-level changes by entrusting reputable family planning organizations as grantees. Texas, in particular, was made ineligible from receiving funds after state-level changes. <sup>b</sup>
December 2016: President Obama signed a rule making it difficult for states to continue to receive federal funding if they did not allocate Title X funds based on quality and quantity of services, as originally intended.	
April 2017: President Donald Trump signed a bill reversing the December 2016 Obama rule. <sup>b</sup>	
February 2018: The U.S. Department of Health and Human Services (HHS) revised Title X grant criteria, allowing a greater focus on abstinence and the rhythm method. <sup>c</sup>	→ This was a major shift from Title X’s traditional criteria (and definition) of evidenced-based methods of reproductive health care. It also broadened the range of organizations eligible to receive Title X funds, such as crisis pregnancy centers.

*Continued*

Table 1. *Continued*

Policy Change	Consequence for Title X and Delivery of Services
June 2018: Trump administration announced new changes to Title X, including the so-called gag rule, the physical separation rule, and changes to rules concerning unemancipated minors. <sup>b,c</sup>	→ Gag rule: Prohibited Title X grantees from providing or referring patients for abortion, except in cases of rape, incest, or medical emergency. Physical separation: Physically and fiscally separated Title X–funded resources, facilities, and staff from abortion-related resources, facilities, and staff.
March 2019: HHS published final rule, mirroring the June 2018 proposed rule. <sup>b</sup>	→ The final rule incorporated both the gag and physical separation rules. It also allowed clinics that only offer natural family planning, and not a single FDA-approved method of contraception, to be eligible for grants; required efforts to incorporate families for minors; and allowed providers to refuse to provide any recommendation for abortion services even if requested because of the provider’s moral objections.
August 2019: New rules (with the exception of the physical separation rule) went into effect.	→ 26% of Title X sites stated that they would not accept these federal funds. This included 400 Planned Parenthoods, 600 family planning sites, and several states. <sup>d,e</sup>
March 2020: The “physical separation” began to be enforced.	

Sources: (a) Flynn (2013); (b) Sadeghi and Wen (2019); (c) Planned Parenthood Action Fund (2019); (d) Sobel and Salganicoff (2019); (e) Kaiser Family Foundation (2019).

Roeder 2014). Sandefur and Smyth (2011, v) assert that “geography is destiny: the services available to people from eligible populations . . . are determined not by what their problems are or the kinds of services they may need, but rather by where they happen to live.” Additionally, scholars of public health, sociology, and geography have made it quite clear that many of the health disparities evidenced across socioeconomic status and racial groups are not rooted in individual behavior, but are due to the structure of the built environment and access to care (Center on Society and Health 2015; Gordon et al. 2011; Smith and Morton 2009; Williams and Collins 2001). We should also like to note that the concept of access is multidimensional, and the framework and measurement of contraception deserts incorporate insights from scholars across these disciplines. To build a foundation for the readers’ understanding of contraception deserts and our measurement strategy, we briefly highlight some key conceptual components from the literatures in public health, sociology, and geography.

### Access as a Multidimensional Concept

A nuanced delineation of access differentiates between *potential* and *realized* access. Potential access centers the characteristics of the delivery system, such as the availability of facilities and health care providers, and the characteristics of those who live in a particular area (e.g., age, access to insurance). Meanwhile, realized access concerns the rates of use and subjective levels of satisfaction with a particular system (Andersen et al. 1983).

Additionally, we note that there are *spatial* and *aspatial* determinants of access (Wang and Luo 2005). Spatial access refers to the geographic barriers that may prevent people from attaining care; the time it takes one to travel or the terrain that one may need to navigate to see a provider are examples of this dimension. Aspatial access speaks to the nongeographic barriers that may prevent a person from gaining access to a particular place; here, we may consider the experience of poverty or the lack of English-language proficiency to be aspatial barriers to an American resident who may seek care but have difficulty in attaining it.

Conceptually, we can define spatial and aspatial barriers as well as potential and realized access separately, but in practice, these notions are inextricably linked. For instance, poor infrastructure (spatial) is more likely to occur in areas with a greater population of marginalized people

(aspatial). Relatedly, many rural areas (spatial) are likely to be the residence of lower income (aspatial) people.

Meanwhile, scholars of racial disparities in health highlight the intertwined relationship between potential and realized access. For instance, those who study help-seeking efforts note that high-quality research that aims to ascertain the existence and scope of racial inequality in health will incorporate “a broad framework that includes structural inequalities in income and health insurance, stereotyping bias among medical professionals, cultural and communication barriers, as well as the individual’s own social networks, attitudes, and circumstances” (White, McQuillan, and Greil 2006, 853). Further, scholars document the well-earned mistrust that Black women and other women of color may have with respect to reproductive health care providers, given the history of imposed contraception, forced sterilization, and unconsented experimentation (Owens 2017; Roberts 1999). Relatedly, queer and transgender people tend to be subjected to ill-trained medical providers and an array of indignities in their efforts to attain medical care (Seelman et al. 2017). Taken together, it becomes more apparent how potential access may not necessarily lead to realized access in a society marked by racism, sexism, as well as trans- and homophobia.

### Geographies of Health: Food, Abortion, and Contraception Deserts

Scholars have ascertained that political rebukes of abortion rights and providers have led to the development of abortion deserts, or localities where people must drive more than 100 miles to access this medically safe but politically controversial procedure (Cartwright et al. 2018). Because of major changes to programs like Title X, *contraception deserts* are also likely to arise (Kreitzer and Smith 2016; Saunders, Kreitzer, and Smith 2018). This phenomenon should be tracked, given that 30 times more women obtain publicly funded contraception a year than obtain an abortion. A contraception desert is a locality characterized by inequitable access to public, affordable, evidenced-based reproductive health care. We define equity as the provision of resources in response to their necessity.

We center access to Title X-funded Planned Parenthood clinics in this study for two main reasons. First, we take a note from the food desert literature, which highlights that despite high rates of Americans who are food insecure, there is no shortage of food in the country; there is, however, an inequitable distribution of high-quality grocery stores that

sell fresh, healthy food at affordable prices (Gordon et al. 2011; Smith and Morton 2009). The corollary here is that while there are many facilities that provide contraception around the country, Title X-funded clinics and Planned Parenthood clinics in particular can be likened to well-endowed, affordable grocery stores. We want to track who has access to a wide range of evidenced-based, effective contraception, which is not necessarily provided by other kinds of health care facilities, including FQHCs or crisis pregnancy centers (Hassett 2017).

Second, we focus on Planned Parenthood because these clinics provide a disproportionate amount of services to the federal government's intended target groups. It is often the case that Planned Parenthood clinics are the "only game in town" for comprehensive reproductive health care. Fifty-six percent of Planned Parenthood clinics are located in rural or medically underserved areas, both of which tend to be populated by low-income, uninsured, or Medicaid-reliant individuals (Planned Parenthood Action Fund 2017). Furthermore, although the "American imagination" tends to link "whiteness" and "rural," rural and small-town census tracts whose residents are primarily from nonwhite groups are not uncommon. Indeed, people of color account for 75% of recent growth in rural and small-town areas (Housing Assistance Council 2012).

The concept and measure of contraception deserts center potential access and incorporate notions of both spatial and aspatial barriers. Potential access brings into high relief the structural components that determine whether residents of a locality can successfully gain access to reproductive resources if they need or desire to. Taking the heed of Wang and Luo (2005, 132), who say that "successful integration of spatial and non-spatial factors is critical to design an effective method of assessing healthcare access," our measure of contraception deserts simultaneously factors in both aspatial and spatial components of accessibility to measure potential access.

To be specific, we designate two types of contraception deserts. The first focuses primarily on spatial access. If we find that residents of a locality would have difficulty traveling to a Title X clinic in a timely manner, we designate this space a contraception desert. What constitutes a "timely manner" is highly contextual, and we delineate how our measurement strategy accounts for this complexity below. The second type of desert speaks not only to spatial barriers but also aspatial barriers — here, we highlight localities where spatial access is low and the people who live there are identified to have high needs, with a special emphasis on low-income Americans.

With this in mind, we ask, How have changes to Title X eligibility and funding rules influenced access to Title X clinics? Specifically, does the loss of Title X funding to Planned Parenthood translate into declining access to this publicly funded program? Who is most likely to be affected? Our goals here are to illuminate not only the existing contraception deserts in 10 states but also to determine how the withdrawal of Planned Parenthood from the Title X network influences the shape, scope, and number of contraception deserts that exist across these states. Additionally, we also seek to ascertain the demographic profile of newly expanded contraception deserts if they appear.

## EMPIRICAL EXPECTATIONS

In the wake of a series of changes to the Title X rules (outlined in [Table 1](#)), many scholars and physicians predicted that family planning organizations meeting the “old” expectations of Title X – to have a “broad array” of evidenced-based, FDA-approved reproductive health care resources – would opt out of the program, and further, that millions of people would be negatively affected (Beaman and Schillinger 2019; Bronstein 2018). We empirically assess these predictions with an eye toward Planned Parenthood, for the reasons outlined earlier. Our hypotheses mimic these experts’.

Extant research reveals that contraception deserts do exist and that they are the norm rather than the exception in several U.S. states (Kreitzer et al. 2021). However, a key lesson from 2020 is that things can get worse. Therefore, we predict that the withdrawal of Planned Parenthood from the Title X network will lead to expanding contraception deserts or even creating new ones because the most efficient and effective way to create or prevent the development of contraception deserts is through siting decisions. Grantees of Title X can be strategic about how and where funded clinics are located. For instance, North Carolina distributes Title X funds through county health departments; given the state’s relatively small land area but large number (100) of counties, this produces a greater spread of funds. However, in May 2019, the federal government prevented Planned Parenthood of North Carolina from receiving Title X funds.<sup>4</sup> The four Planned Parenthood clinics that

4. The Trump administration denied the application of Planned Parenthood in North Carolina as well as those in Hawaii, Ohio, Wisconsin, and Virginia in May 2019 (see Planned Parenthood Action Fund 2019). Planned Parenthood of North Carolina was delegated Title X responsibilities during the Obama administration when the state legislature made efforts to restrict access to funds.

participated in the program are located in high-density areas. In this case, the initial decision to make these clinics eligible for funds was quite strategic, given that these four sites could provide greater potential access to those who might encounter the higher spatial and aspatial barriers of an urban environment. Just as well, the removal of these four sites from the Title X program, specifically, has the potential to produce contraception deserts where they did not exist previously.<sup>5</sup>

In all, we expect to find that contraception deserts will expand geographically as a result of the removal of the organization's participation in the program. Put simply:

**H<sub>1</sub>:** Contraception deserts will expand when Planned Parenthood clinics are removed from the Title X network.

Second, research on the geography of health reveals that race, class, and space intersect to produce areas of concentrated disadvantage (Michener 2016). While scholars reveal that poor people and people of color tend to have lower quality of health, this can be explained largely by structural factors (Center on Society and Health 2015; Gordon et al. 2011; Smith and Morton 2009; Williams and Collins 2001). However, Planned Parenthood facilities are often strategically located. If we return to our previous example, it would be worth noting that two of the four Planned Parenthood clinics in North Carolina removed from the program were in majority-minority cities; nearly all of the Planned Parenthood clinics in North Carolina are located in "college towns." Here, we see that race, space, and class (or occupation, in the case of students) intersect to (potentially) produce greater inequity. Given that race and class are strongly correlated and that the United States is racially segregated, we expect to find that poor people and people of color will be disproportionately affected by the change in the makeup of the Title X network. Specifically, we expect to find that where new contraception deserts develop, people of color and poor people will be disproportionately affected.

**H<sub>2a</sub>:** People of color — Black, Latinx, Asian American, and Native American people — will be disproportionately represented in new contraception deserts.

In this case, the federal government's actions are likely to produce or exacerbate the size of contraception deserts in these states.

5. To be clear, Planned Parenthood clinics have not and may not close because of the withdrawal of the Title X network, but they are no longer spaces where the public can attain resources funded by this federal program; the ability to access resources funded by Title X is central to our concern and to the concept of contraception deserts.

**H<sub>2b</sub>:** Low-income people will be disproportionately represented in new or expanded contraception deserts.

## DATA

We evaluate the effects of the removal of Planned Parenthood from the Title X network in 10 states: California, Florida, Iowa, Massachusetts, Michigan, North Carolina, New York, Pennsylvania, Texas, and Washington.<sup>6</sup> Though this sample is not necessarily nationally representative, these states differ in meaningful ways across an array of characteristics: geographic region and size, diversity in socioeconomic and ethnoracial demographics, rural/urban dynamics, and partisan politics. These states also vary in terms of how Title X funds are allocated as well as their dependence on Planned Parenthood. For instance, most Southeastern states are the primary Title X grantee, and they tend to funnel these federal funds through county health departments; thus, they rely less on organizations like Planned Parenthood. In contrast, states like California and Washington rely on a mix of Planned Parenthood clinics, FQHCs, and health departments. As mentioned, in states like Michigan, Planned Parenthood plays an outsized role in delivering services to Title X clients, serving most of the state's Title X clients even though it accounts for only 15.9% of the Title X-funded clinics in the state. Table 2 highlights some of the variation in political and demographic dynamics across the 10 states under study.

We use Title X clinic location data from the Office of Population Affairs' 2019 Title X Family Planning Directory, which provides the physical addresses of all Title X grantees and subgrantees in each of these states. Finally, we use data from the 2017 American Community Survey, which provides demographic data, such as race, socioeconomic status, and age, at the census-tract level.

## METHOD

We use a methodological strategy employed by geographers to develop nuanced assessments of potential access to goods and services. Specifically, we use the integrated two-step floating catchment area (I2FCA) method. This methodological approach best serves the central

6. As mentioned, Kreitzer et al. (2021) developed the measure of contraception deserts and illustrated the concept with data from 14 states. Of these 14 states, 10 of them have Title X-funded Planned Parenthood clinics; we analyze changes in the size and scope of contraception deserts in these 10 states.



Table 2. Political and demographic dynamics across the states under study

<i>State</i>	<i>2016 Pres. Election</i>	<i>Title X– Funded Clinics</i>	<i>Title X– Funded Planned Parenthoods (% of Total Title X in State)</i>	<i>Medicaid Expansion</i>	<i>% Black</i>	<i>% Latinx</i>	<i>% Native</i>	<i>% Asian</i>	<i>% Below 150% Federal Poverty Level</i>	<i>Census Bureau Region</i>
California	Dem	391	98 (25.1%)	Yes	5.7%	38.8%	0.7%	14.2%	24.7%	West
Florida	Rep	213	3 (1.4%)	No	15.9%	24.9%	0.3%	2.7%	26.0%	South
Iowa	Rep	60	7 (11.7%)	Yes	3.3%	5.7%	0.3%	2.3%	20.4%	Midwest
Massachusetts	Dem	102	6 (5.9%)	Yes	7.3%	11.2%	0.2%	6.2%	17.4%	Northeast
Michigan	Rep	120	19 (15.9%)	Yes	13.6%	4.9%	0.5%	2.9%	24.5%	Midwest
North Carolina	Rep	223	65 (29.1%)	No	21.2%	9.2%	1.2%	2.7%	26.5%	South
New York	Dem	121	7 (5.8%)	Yes	15.5%	18.9%	0.4%	8.4%	23.5%	Northeast
Pennsylvania	Rep	260	24 (9.2%)	Yes	10.8%	6.8%	0.2%	3.3%	21.2%	Northeast
Texas	Rep	93	9 (9.7%)	No	11.8%	39.1%	0.5%	4.6%	26.4%	South
Washington	Dem	82	36 (43.9%)	Yes	3.6%	12.3%	1.3%	8.1%	20.0%	West

research question and the nature of our data. First, the I2SFCA approach is better suited for identifying the *geography* of contraception deserts based on factors such as demand, provider sites, and appropriate travel times than other traditional methods that examine change (e.g., difference-in-differences). Additionally, I2SFCA allows us to simultaneously consider how nonspatial dimensions of access (e.g., low-income or being a member of a historically underserved group) layer over spatial barriers to access. Spatial and aspatial accessibility factors may interact to exacerbate inequality, so the two dimensions ought to be simultaneously considered in efforts to paint an accurate depiction of the geography of opportunity (Wang and Luo 2005). Without such consideration, we would not be able to speak to those who would be most disenfranchised by the expansion of contraception deserts. The I2FCA method allows us to meet this challenge.

### Reasonable Driving Distance

To use this method, we must first define a “reasonable driving distance.” While federal guidelines for maximum distance to a primary care provider for the purpose of determining a Health Professional Shortage Area specify 30 minutes (U.S. Department of Health and Human Services 1993), we leverage our data and methods to be more nuanced in our approach. We consider the idea that a “reasonable” driving distance may be longer or shorter based on the services provided as well as where one resides. A reasonable driving distance to a cancer treatment facility may be further away than a reasonable distance to a pharmacy (Luo and Qi 2009), and still a person who lives in a metropolitan areas may expect a much shorter commute than someone who lives in a rural area. To capture this complexity, we use the Rural-Urban Commuting Area (RUCA) codes from the 2010 Census, which classifies census tracts using measures of population density, urbanization and daily commuting patterns. For census tracts with a RUCA score of 1–3 (metropolitan area), we consider a 15-minute driving distance to be “reasonable.” Likewise, we use a 30-minute driving time for tracts with a RUCA score of 4–6 (micropolitan area), 45 minutes for tracts with a RUCA score of 7–9 (rural), and 60 minutes for tracts with a RUCA score of 10 (isolated community).<sup>7,8</sup>

7. It is important to keep in mind, however, that the X-minute driving distance is based on driving a direct route in a vehicle, not on the travel time needed to go to a clinic using public transportation, which may be much longer.

8. We use ArcOnline’s capacity to measure rural driving time for the latter two categories, which allows for the calculation of routes along small and unpaved roads.

## The I2FCA

Our approach is based on the basic FCA model, which draws an X-minute polygon, where X represents some reasonable driving distance, around the population-weighted centroid of a census tract to create a “catchment area.” A similar polygon “floats” from tract to tract, and the provider-to-patient ratio is then calculated for each tract. The underlying assumption of this method is that all services within the catchment area are fully available to all residents in that catchment. This is not necessarily the case, however, as providers on the edge of one catchment may be more than X minutes away from some residents in the catchment, and some providers on the edge of a catchment may provide services to residents of a nearby catchment (and thus be less available to provide services to residents in their own catchment). Radke and Mu (2000) overcome this problem by repeating the process of creating “floating catchments” twice: once based on provider locations and once based on population locations. This is now widely known as the “two-step floating catchment area” method. The *integrated* 2SFCA incorporates a measure of nonspatial accessibility when making shortage designations; we focus on measures of poverty, given the mission of the Title X program (Luo 2004; Radke and Mu 2000).<sup>9</sup>

We merge Title X-funded clinic locations data with census-tract population and demographic data using the census geographic identifier. Based on this information, we create several variables. The *weighted population* reflects the number of people of reproductive age, between 15 and 44 years old, who have access to a given clinic in a given tract. This is the product of the percentage of people of reproductive age in a census tract “caught” by the catchment areas and the total reproductive-age population of the census tract. The *clinic count*<sup>10</sup> reflects the number of clinics that people living in a census tract have access to, and the *frequency* reflects the number of census tracts for which a given clinic is responsible (i.e., the number of census tracts that contribute population to a given clinic). We then create a measure of *clinic*

9. This method is relatively new in political science. Scholars who are interested in learning more about this method can rely on articles by program Luo and colleagues (Luo 2004; Luo and Qi 2009; Wang and Luo 2005).

10. Other applications of the 2SFCA use the number of physicians rather than the number of clinics in their calculations. The number of physicians at a clinic location is a more refined measure; however, that information is simply not available for Title X clinics.

*availability* by summing the *weighted population* by clinic locations. The provider-to-population ratio is then summed by the population locations, creating a measure of *tract spatial accessibility*, which represents the availability of clinics that are reachable from a residential location. More succinctly, the tract spatial accessibility score is essentially the following ratio filtered by a threshold travel time of X minutes, depending on the RUCA designation of the census tract:

$$\frac{\text{number of clinics accessible to a given tract}}{\text{total population of reproductive age for which a clinic is responsible}} \\ = \frac{\Sigma \text{ clinic count}}{\Sigma \text{ clinic availability}}$$

We integrate the spatial access data with a measure of nonspatial access, the percentage of the population with income below 150% of the federal poverty level. We repeat this procedure but omitting all Planned Parenthood clinic locations. This allows us to set a baseline of accessibility of affordable family planning as well as to identify areas that lose access in the absence of Planned Parenthood.

### Designating Contraception Deserts

We designate two types or tiers of severity of contraception deserts; these are differentiated by color in [Figures 1](#) and [2](#). First, if the population centroid of a tract has no access to a clinic in the first catchment, we assign a spatial accessibility score of 0 and designate the tract a desert; these areas include tracts with no spatial access but average- or low-need populations. This type of contraception desert is indicated by gray (cobalt blue). Second, we identify a subset of this first category if more than 50% of the population is below 150% of the federal poverty level. In other words, these spaces are in dire straits, as they have no spatial access *and* there is a preponderance of high-need populations in the area; these spaces indicated by dark gray (navy blue).

Again, our aim is to determine whether and how the shape of contraception deserts are transformed when Planned Parenthood is removed from the Title X network. As a final step, we identify tracts that were not identified in our first round of analysis as contraception deserts but are identified as deserts when Planned Parenthood locations are excluded. These new extensions of contraception

**Before: Contraception Deserts Prior to the Exclusion of Planned Parenthood**

**After: Expanded Contraception Deserts without Planned Parenthood**

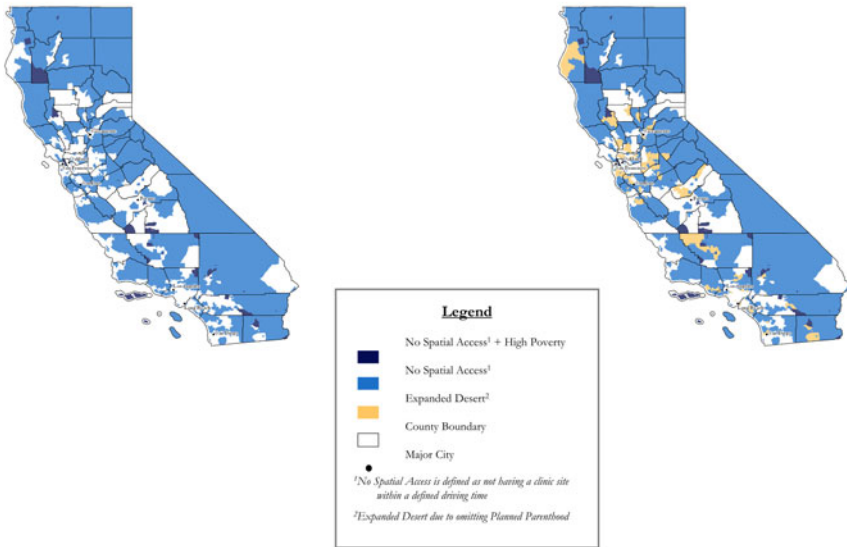


FIGURE 1. California's Contraception Deserts.

deserts are indicated in light gray (yellow). White areas of the map have spatial access to Title X clinics or poor access but are not high in need.

## RESULTS

### Expanded or New Contraception Deserts

Our first hypothesis asserted that existing contraception deserts would expand and/or that new ones would arise. Our results provide a great deal of evidence for this hypothesis. Figure 1 provides a before-and-after glimpse of one state, California, in an effort to make clear the “changes” we seek to highlight in the nine other states. Figure 1's left panel depicts the two kinds of contraception deserts that we outlined earlier, which existed prior to the removal of Planned Parenthood from the Title X network. Again, the gray/cobalt areas are those where residents, no matter their race or socioeconomic status, do not have access to a Title X-funded clinics within a reasonable driving distance. The darker gray/navy areas are those inhabited by historically underserved socioeconomic

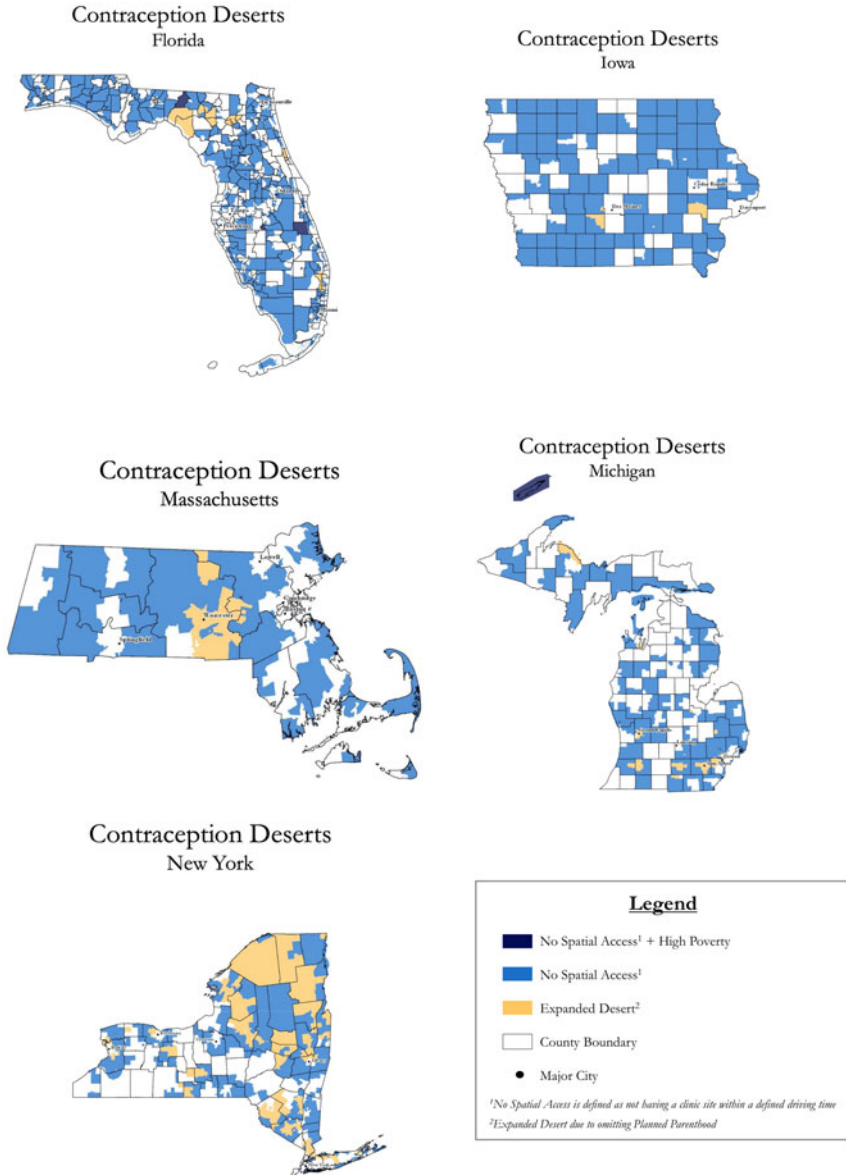


FIGURE 2. Contraception Deserts in Florida, Iowa, Massachusetts, Michigan, and New York.

groups and are not within a reasonable driving distance from these public resources. Meanwhile, the light gray/yellow areas highlighted in the figure's right panel reveal the new or expanded contraception deserts developed

because of the withdrawal of Planned Parenthood from the Title X network. The nine remaining states' "after" depictions are included in [Figures 2 and 3](#); they are in alphabetical order, and larger images of each state can be found in the supplementary material online.

First, it is important to note that contraception deserts were already quite prevalent prior to the removal of Planned Parenthood organizations, illustrated by the preponderance of darker grays/blues in the figures. But there are differences across the states as well. For example, most of Texas would be identified as a contraception desert, while states and organizations in Michigan and New York seem to have been more strategic in their siting decisions prior to the rule changes. This characterization is evidenced by the swaths of white areas (many now turned light gray/yellow) or the relative minimization of the darker grays/blue areas. Still more, there is something to be said about the prevalence of the second kind of contraception deserts — ones marked not only by poor spatial access but also by high poverty; these areas are marked by dark gray/navy. For instance, though North Carolina relies on nearly 100 county health departments to distribute Title X services, this distribution plan is not always equitable, as there are several pockets of the more insidious kind of contraception deserts; Florida mimics this strategy and outcome.<sup>11</sup>

Given the fact that contraception deserts were common prior to the most recent rule changes in Title X, it becomes clear that any additional disruption would produce larger areas of inaccessibility. Evidence for this prediction is highlighted in light gray/yellow in each state map. Again, we see if states primarily rely on county health departments widely spread across the state (North Carolina and Florida), they can minimize the *size* of the new contraception deserts. However, New York, which was able to constrain the size of contraception deserts with the help of Planned Parenthood, is clearly affected by the organization's removal from the Title X network. Meanwhile, though major several cities in Washington are spared, other micro- and metropolitan areas (e.g., Spokane) would now be considered contraception deserts in the wake of these changes.

States like North Carolina, Florida, Michigan, and Texas seem to be relatively spared, marked by small pockets of light gray/yellow, but as the following analysis will show, these effects are more pernicious for some groups more so than others. What is more, even though the size of the

11. The left panel image of [Figure 1](#) is adapted from Kreitzer et al. (2021).

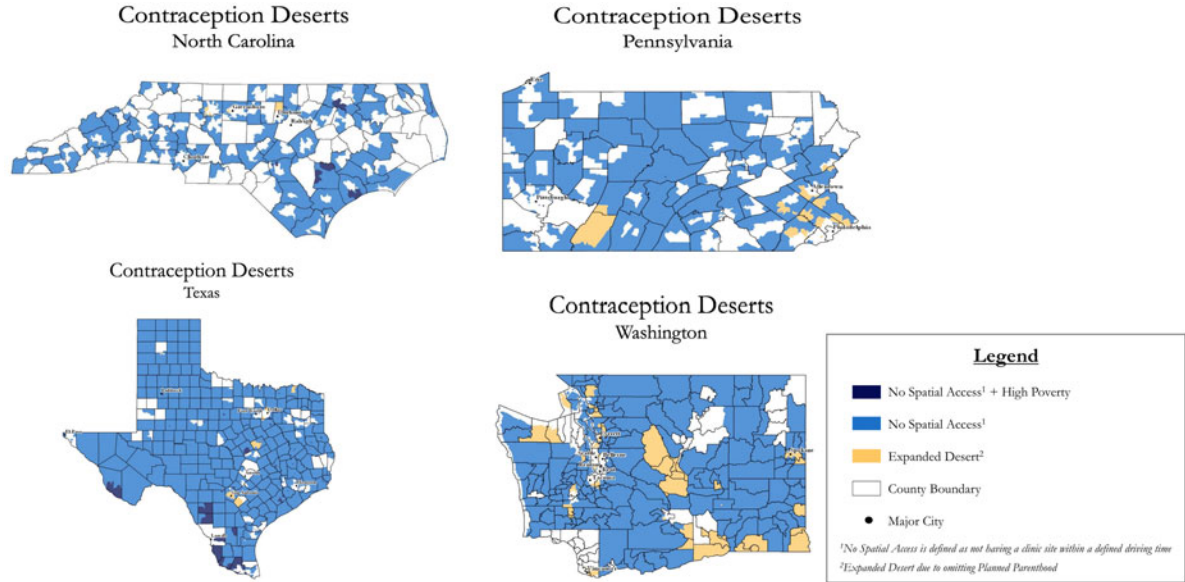


FIGURE 3. Contraception Deserts in North Carolina, Pennsylvania, Texas and Washington.



landmass appears small, the sheer number of people who live in these spaces need to be accounted for to understand the ramifications for the policy change and Planned Parenthood's response to it.

### Who Is Affected Most?

The second hypothesis asserted that people of color and poor people will be disproportionately represented in new or expanded contraception deserts. [Table 3](#) highlights the demographic makeup of the two types of contraception deserts that existed prior to the rule changes (which correspond to the darker grays/blues areas in [Figures 1, 2, and 3](#)) as well as the demographic composition of expanded deserts across the states (the light gray/yellow areas in [Figures 1, 2, and 3](#)).

To be sure, people of color and poor people were already disproportionately located in the contraception deserts that speak directly to inequity — high-need areas with no spatial access. For example, 15.9% of Florida's population is Black, but, as noted in [Table 3](#), if you walked into a high-need, no-spatial-access desert in that state, 37.9% would be Black. Or, as an additional example, 12.3% of the population in Washington is Latinx, but 32% of the population in the worst kinds of contraception deserts are represented by Latinx community members.

The “expanded deserts” rows in [Table 3](#) provide mixed support for our second hypothesis. While people of color and poor people are disproportionately represented in the existing contraception desert in each state under study, we find that expanded contraception deserts are, more or less, an equal opportunity blight. That is to say, the population of most of the newly expanded deserts proportionately represents the population of the state. Nonetheless, there are still important imbalances and inequities to highlight. For instance, Asian and Asian American communities are disproportionately overrepresented in the new deserts in four states (Iowa, Michigan, North Carolina, and Pennsylvania). The same can be said for Black people in two states and Latinx people in five states. In fact, Latinx Texans represent about 39% of the state's population but about 50% of those in newly expanded deserts. It is worth pointing out that we see increased disparities for Black, Latinx, and Asian American Michiganders, a state where 70% of its Title X clients were served through Planned Parenthood.

Determining proportional representation is only one way to consider the effects of a change in policy; in fact, we see that the removal of Planned

Table 3. Demographic characteristics of contraception deserts

<i>State</i>	<i>Contraception Desert Type</i>	<i>% of Desert Black</i>	<i>% of Desert Latinx</i>	<i>% of Desert Native American</i>	<i>% of Desert Asian</i>	<i>% of Desert Below 150% Federal Poverty Level</i>
California	No spatial access	3.67%	29.33%	0.76%	13.07%	18.98%
	No spatial access + high need	5.86%	67.81%	1.59%	5.17%	58.97%
Florida	Expanded deserts	4.37%	33.32%	0.66%	14.58%	21.76%
	No spatial access	13.50%	23.94%	0.27%	2.91%	21.18%
	No spatial access + high need	37.90%	43.08%	0.30%	0.83%	56.09%
Iowa	Expanded deserts	13.27%	16.74%	0.19%	3.03%	21.41%
	No spatial access	1.47%	3.72%	0.20%	1.66%	18.25%
	No spatial access + high need	4.52%	3.93%	0.35%	6.36%	68.67%
Massachusetts	Expanded deserts	5.51%	5.07%	0.15%	7.09%	22.11%
	No spatial access	3.08%	5.31%	0.11%	5.15%	11.39%
	No spatial access + high need	15.80%	38.26%	1.22%	8.57%	56.24%
Michigan	Expanded deserts	6.08%	12.26%	0.17%	6.19%	16.82%
	No spatial access	9.37%	4.05%	0.38%	3.79%	18.18%
	No spatial access + high need	49.55%	8.55%	0.46%	2.10%	60.73%
North Carolina	Expanded deserts	18.57%	5.08%	0.31%	5.45%	23.65%
	No spatial access	15.90%	7.74%	0.73%	2.37%	21.58%
	No spatial access + high need	35.35%	26.69%	0.50%	1.72%	57.92%
	Expanded deserts	21.32%	7.20%	0.55%	3.47%	14.48%

Continued

Table 3. Continued

<i>State</i>	<i>Contraception Desert Type</i>	<i>% of Desert Black</i>	<i>% of Desert Latinx</i>	<i>% of Desert Native American</i>	<i>% of Desert Asian</i>	<i>% of Desert Below 150% Federal Poverty Level</i>
Michigan	No spatial access	5.18%	11.51%	0.34%	5.67%	17.01%
	No spatial access + high need	9.78%	22.80%	0.33%	20.26%	58.95%
Pennsylvania	Expanded deserts	6.40%	12.69%	0.40%	5.71%	18.70%
	No spatial access	3.47%	4.34%	0.15%	2.95%	15.53%
Texas	No spatial access + high need	13.63%	41.96%	2.14%	1.93%	62.32%
	Expanded deserts	6.89%	10.23%	0.36%	4.25%	17.22%
Washington	No spatial access	9.60%	31.55%	0.51%	4.93%	21.02%
	No spatial access + high need	14.41%	66.38%	0.58%	2.39%	57.47%
Washington	Expanded deserts	10.25%	50.34%	0.50%	3.88%	28.73%
	No spatial access	2.16%	12.20%	1.50%	5.64%	18.89%
	No spatial access + high need	2.28%	32.10%	2.86%	5.50%	58.01%
	Expanded deserts	2.28%	15.38%	1.01%	5.80%	22.75%

Table 4. Additional people subsumed in a contraception desert after Planned Parenthood withdrawal

State	Black	Latinx	Native American	Asian American	Below 150% Federal Poverty Level
California	303,868	2,317,039	46,233	1,013,756	1,513,010
Florida	93,178	117,564	1,341	21,290	150,360
Iowa	8,297	7,643	221	10,685	33,320
Massachusetts	34,168	71,959	1,371	37,460	103,091
Michigan	273,158	74,780	4,602	80,191	347,843
North Carolina	26,893	9,078	691	4,381	18,264
New York	189,616	376,109	11,982	169,247	554,082
Pennsylvania	88,165	130,993	4,571	54,402	220,414
Texas	235,802	1,157,992	11,420	89,205	660,785
Washington	45,057	303,388	19,856	114,389	448,880
Total	1,298,202	4,566,545	102,288	1,595,006	4,050,049

Parenthood has an “equal” effect across all groups in many states. However, given the different size of each state’s population, the human toll of these changes is not made clear by percentage of the population. As such, Table 4 illuminates the raw number of people from each of the groups analyzed above in each state. Overall, we find that across these 10 states, approximately 1.3 million Blacks, 4.6 million Latinx, more than 100,000 Native Americans; 1.6 million Asians, and 4 million people across all racial groups who are in poverty *who previously had access to a Title X-funded clinic will no longer have spatial access* to this federally sponsored program because of the removal of Planned Parenthood’s participation in the program.

## DISCUSSION AND CONCLUSION

A first reading of these results provides evidence for medical professionals’ and health scholars’ predictions: as a result of major changes to Title X rules, fewer organizations that rely on evidence-based, FDA-approved contraception are participating in the program, negatively affecting millions of Americans. People of color and poor people are disproportionately represented in contraception deserts, and expanding or new contraception deserts serve to exacerbate inequitable access to reproductive health care resources. We focus on Title X and Planned

Parenthood, but ultimately, this research highlights how an evolution in political orientation toward what used to be a bipartisan policy stance can constrain access to what should be equitably distributed public resources. Polarization, reinterpretation of the relationship between abortion policy and contraception policy, and federal bureaucratic rule changes combine to mitigate key elements of reproductive justice from integrating into gendered policy, or policy that disproportionality impacts marginalized and vulnerable women, gender-nonconforming and trans people, as well as queer people.

We focus on the number of people who have *potential* access to Title X-funded clinics. That is to say, while about 4 million Americans per year relied on — or experienced *realized* access of — Title X funds, millions more are eligible to access to the program merely by being a resident of the United States. This distinction between realized and potential access is important for a number of reasons. First, the program was intended to reach low-income Americans, but most Americans can use the program. Even those who have insurance may choose to rely on Title X-funded clinics — perhaps due to the confidentiality required by the program (e.g., one's insurance may not be billed) or because a Title X-funded clinic may be the most convenient facility to gain access to a wide range of reproductive health care services.

Second, we should note that while many people have access to health care through marriage, family attachments, or the labor market, these relationships are not necessarily permanent, particularly the last (Gutierrez 2018). We mention this only to highlight that even if many people do not access federally subsidized care because they can get care at, say, a private doctor because of their insurance status, it is not unlikely that this status changes over one's lifetime, a situation illustrated by the fallout of the COVID-19 pandemic.

Since Title X is a component of the United States' social safety net, provisions should be made such that it provides help when and *where* people need it. Therefore, our calculations focus on the broader number of Americans who live in contraception deserts despite their election to rely on Title X because it is incumbent upon the state to provide equitable potential access to all of its programs. Our results reveal that upwards of 4 million additional Americans whose incomes are below 150% of the federal poverty level live in contraception deserts because of the withdrawal of Planned Parenthood from the Title X program; this population overlaps with the 7.5 million people of color who have lost potential access to this program.

Some may take issue with our findings, noting that these Planned Parenthoods have not physically “disappeared,” so people can still access them. Meanwhile, others may argue that there are other organizations and FQHC’s that could “substitute” the services Planned Parenthood provides. Still more, some might note the instances when states have stepped in to “make up” the lost federal dollars to formerly funded Title X clinics. There is some truth to each of these, but ultimately there is little support for these counterarguments. We address these issues in turn.

First, we should emphasize that we are concerned with *potential* access to a *federal program* that should be equitably distributed and *aspatial* barriers to reproductive health care. While it is true that many of the Planned Parenthood clinics that no longer accept Title X funds are still present in the community, the *Title X funding and program* are not *spatially* accessible to an increasing number of American residents. Texas history, as well as the contemporary fallout from the most recent rule changes, show that a reduction in access to Title X funds has led to the closing of many family planning facilities, including long-standing Planned Parenthood clinics (Gold and Hasstedt 2016). There is also the matter of aspatial barriers to resources. For instance, clinics that remain open may have to reduce staffing, hours, or the range of services that they can provide to clients; these kinds of reductions speak directly to aspatial access to services (Lam 2019; North 2019; Population Connection Action Fund 2019). As another example, clinics may be unable to provide contraception at the same low cost. All told, our results provide clear evidence that potential access to Title X funds is reduced, and there are signs that aspatial barriers to Planned Parenthood clinics are increased, one way or another.

Second, some note that the federal government has invited other organizations, including FQHCs and crisis pregnancy centers, to take on Title X funds in Planned Parenthood’s stead. Again, taking a note from the food desert literature, we realize that there is no shortage of food in the United States, but (a) grocery stores are not equitably distributed, and (b) not all businesses that sell food provide healthy, fresh, or affordable foods. The same can be said of reproductive health care resources and facilities. In an era of rapidly changing rules, we deem a place a contraception desert if people do not have access to high-quality care at Title X-funded clinics, which legislators have historically intended to ensure that Americans residents can have access. However, “clinics that only offer natural family family — and not a single FDA-approved method of contraception — are now eligible for grants,” an anathema to

previous criteria (Population Connection Action Fund 2019). Living near a crisis pregnancy center would be analogous to living near a convenience store with only highly processed foods.

Although they are further along the reproductive health care provider spectrum, FQHCs are not an equally matched substitute. Reproductive health care clinics are more likely to have a more comprehensive range of contraception; in fact, 74% of reproductive health care clinics like Planned Parenthood offer a “full range of contraception,” as outlined by Title X regulations, while only 48% of FQHCs can say the same (Zolna and Frost 2016). Additionally, the change in policy puts a strain on those clinics remaining in the program. Planned Parenthood affiliates represent just over 10% of Title X-funded clinics, but they serve more than 4 in 10 clients (41%). Meanwhile, FQHCs represent 38% of the remaining clinics — where only 7% of those are focused primarily on reproductive health services, and furthermore, FQHCs have historically served only 16% of Title X clients. Guttmacher estimates that under these circumstances, “In 27 states, these FQHC sites would have to at least double their contraceptive client caseloads to do so, and in nine of those states, they would have to at least triple them,” ultimately, taking on 2 million more additional patients. This is likely unfeasible (Hassett 2017).

Lastly, many states have offered to try to fill in the gap for family planning organizations that cannot simultaneously fulfill the requirements of the new rules and continue to provide the full range of services that they traditionally have. However, there are several major caveats. First, while states like Maryland have required that the state fill any potential gap in federal funding, other states are unable to guarantee a dollar for dollar replacement (Frederiksen et al. 2019; Sadeghi and Wen 2019). What is more, some family planning organizations that have withdrawn from the program are experiencing the effect of a lag between the states providing funds and organizations being able to accept the funds because of complex bureaucratic mechanisms and administrative burden (Herd and Moynihan 2019). In the interim, several family planning organizations have already had to close and lay off employees. Even if the funds do eventually come in, it may be difficult to restart the organizations’ normal working mode (North 2019).

It is also worth noting the heterogeneity in orientation toward reproductive rights and justice around the country. Jamila Michener, a scholar of federalism, notes, “One of the moral challenges of the inequality that federalism breeds is precisely that: it feels like our human

dignity is contingent on arbitrary geographic location” (quoted in Matthews 2020). Just as some states have made concerted efforts to produce abortion deserts, there are also several state houses that applaud the closings and increased constraints of family planning organizations like Planned Parenthood; some states may take a cue from the federal government’s efforts and speed up the process of developing contraception deserts. Still more, since Title X is a place-based service, the rule changes are being caught in political crossfire; as we see federal and state administrations change, it is important to regularly assess the implications for people whose reproductive health care needs are ultimately at the whim of the combination of controlling parties at each level of governance.

While we feel confident in our findings that reveal the ramifications for the withdrawal of Planned Parenthood in these 10 states, we should point out some important limitations. The pattern that we have noted here — the expansion or development of contraception deserts — is likely to be mimicked across other states, but we cannot safely generalize our findings. Another limitation of this research is that our results are very likely to be underestimates. For example, our analysis focuses on the 98 Planned Parenthood clinics in California that are no longer using Title X funds; but there are an additional 28 sites that receive funds through the San Francisco Department of Health and Los Angeles County Department of Health Services that are also withdrawing from the program. The same can be said for 20 non-Planned Parenthood sites in New York (via Public Health Solutions and the Community Healthcare Network) (Frederiksen et al. 2019). We focused on Planned Parenthood because it is a political pawn for those on both the left and the right, and anti-abortion groups’ attacks on it has served to put Title X in danger. Our methodological choices also serve to produce very conservative estimates. For instance, one would expect more severe contraception deserts if we stipulated a standard “reasonable” driving distance (of 15 or 30 minutes) rather than by adjusting in response to RUCA scores; given that some common forms of contraception require frequent refills, we would not be out of line to discard the leniency in measurement.

Finally, we should note that our focus on Title X represents only a case of a larger set of issues related to state and federal governments’ role in ensuring or hindering access to resources that would allow more Americans to enjoy important aspects of reproductive justice. The topic under study here may be a precursor to other programs that represent federal-state partnerships. Reproductive health care experts have already



noted that Medicaid is not above the fray. Indeed, “Abortion opponents have also set their sights on Medicaid, the program that provides 75% of all public funds for family planning” (Gold and Hasstedt 2016). The methodological strategy and concept of contraception deserts would be useful to rely on as the debate around access to reproductive health care resources and rights expands and as access to these resources becomes more constrained.

*Candis Watts Smith is Associate Professor of Political Science and African American Studies at Penn State University: [cwsmith@psu.edu](mailto:cwsmith@psu.edu); Rebecca J. Kreitzer is Assistant Professor of Public Policy at the University of North Carolina–Chapel Hill: [rkreit@email.unc.edu](mailto:rkreit@email.unc.edu); Kellen A. Kane is a PhD Student in Public Policy at the University of North Carolina–Chapel Hill: [kakane@live.unc.edu](mailto:kakane@live.unc.edu); Tracee M. Saunders is a PhD Student in Political Science at the University of Iowa: [tracee-saunders@uiowa.edu](mailto:tracee-saunders@uiowa.edu)*

## SUPPLEMENTARY MATERIAL

To view supplementary material for this article, please visit <https://doi.org/10.1017/S1743923X2100009X>

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