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The Effects of State-Level Omnibus Immigrant Laws on Pregnancy Outcomes among Latina Women in the US: An Evaluation of Differences across Nativity and National Origin

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in Community Health Sciences

by

Amanda Landrian Gonzalez

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ABSTRACT OF THE DISSERTATION

The Effects of State-Level Omnibus Immigrant Laws on Pregnancy Outcomes among Latina Women in the US: An Evaluation of Differences across Nativity and National Origin

by

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Doctor of Philosophy in Community Health Sciences

University of California, Los Angeles

Professor May Sudhinaraset, Chair

Preterm birth and low birth weight are the leading causes of infant morbidity and mortality, are associated with an increased risk of poor health and economic outcomes throughout the life course and are an important indicator of overall population health. In the US, disparities in these outcomes exist across both race/ethnicity and nativity status, whereby US- and foreign-born Latina women are more likely to experience preterm birth and low birth weight than US-born white women. Latina women are also less likely than their white counterparts to utilize prenatal care, an important determinant of adverse birth outcomes. These disparities persist even after controlling for socioeconomic indicators, health behaviors, and medical risk factors, pointing to sociopolitical factors, like state-level policy, as potential causes.

States have increasingly set their own immigrant policy agenda, passing restrictive policies denying immigrants' rights and access to health-promoting resources. Omnibus immigrant laws are considered the harshest state-level immigrant policies to ever pass in the

United States (US). These laws were passed with the explicit intent to drive immigrants to "self-deport" by severely regulating their daily life across multiple domains within a single bill. It is suggested that restrictive immigrant policies like omnibus laws had deleterious effects on pregnancy outcomes among Latina women, regardless of their nativity status, due to widespread stress and fear, increased experiences of racial profiling and discrimination, and decreased access to beneficial social institutions and material conditions following their passage. However, to date, no studies have considered the totality of omnibus immigrant laws enacted across the US states and their potential effects on pregnancy outcomes among Latina women. Moreover, questions remain related to the extent that US-born Latinas would be affected by omnibus immigrant laws, especially given that these laws do not explicitly target US-born individuals as written. Finally, it has been posited that differences in the effects of restrictive immigrant laws may also exist across national origin subgroups; however, to date, no studies have formally evaluated potential differences in the health effects of restrictive immigrant laws across national origin subgroups of Latinos.

This dissertation utilized national natality data from 2005 to 2014, encompassing the period during which omnibus immigrant legislation was passed across the US states, and a quasi-experimental interrupted time series design to: 1) determine the effects of omnibus immigrant laws on preterm birth, low birth weight, late entry into prenatal care, and inadequate prenatal care utilization, respectively, among Latina women in the US; 2) understand differences in these effects across nativity status, comparing outcomes among foreign-born versus US-born Latina women; and 3) determine if differences in the effects of omnibus immigrant laws on pregnancy outcomes exist across the largest national origin subgroups of Latinos in the US, comparing outcomes among women of Mexican, Puerto Rican, and Cuban origin or descent.

I found substantial evidence that the passage of omnibus immigrant laws caused a significant increase in the odds of preterm birth among Latina women, largely driven by effects among infants born to foreign-born Latinas generally and Mexican-born Latinas specifically. I also found evidence that the passage of omnibus immigrant laws resulted in an increased odds of preterm birth among all Latinas of Mexican origin or descent, regardless of nativity status. I also find some evidence that the passage of omnibus immigrant law resulted in an increased odds of low birth weight among infants born to foreign-born women from Mexico and Latina women of Mexican and Puerto Rican origin or descent, respectively, but a decreased odds of low birth weight among women of Cuban origin or descent. Moreover, although omnibus immigrant laws had either no effect on late entry into prenatal care or resulted in an improvement in the timing of prenatal care initiation for some groups, I found that their passage led to an increase in the odds of inadequate prenatal care utilization among foreign- and US-born Latinas, foreign-born Latinas from Mexico, and women of Puerto Rican and Cuban origin or descent, respectively. This suggests that the passage of omnibus immigrant laws may be more likely to impact women's ability to attend all the recommended number of prenatal care visits throughout pregnancy rather than the timing of prenatal care initiation. Notably, unlike my findings related to preterm birth which were extremely robust to sensitivity analyses, findings related to the effects of omnibus immigrant laws on low birth weight and prenatal care indicators were more likely to be sensitive to the inclusion of specific states (or policies) in the analytic model. This suggests that the extent that omnibus immigrant laws influence these outcomes may depend more on the specific provisions (or mix of provisions) included within each omnibus immigrant law and other factors of the local and state context. Finally, although I found limited evidence that the passage of omnibus immigrant laws resulted in significant spillover effects when assessing outcomes among

US-born Latinas generally, my finding that their passage resulted in poorer pregnancy outcomes among those of Puerto Rican origin or descent provides evidence that these laws may still result in negative health outcomes even among those individuals not directly targeted by the laws as written (as all Puerto Ricans would have US citizenship regardless of whether or not they are born on the island or within the 50 US states).

This dissertation adds to a growing body of literature that investigates the effects of restrictive state-level immigrant policies on health outcomes among Latinos and is the first to demonstrate variability in the effects of such policies across the three largest national origin subgroups of Latinos in the US, highlighting the importance of disaggregating data in analyses to better account for the vast heterogeneity that exists among this group. These findings also have important implications for programming and policy. These findings can be used to develop interventions aimed at improving maternal and child health outcomes that are targeted toward specific communities (e.g., foreign-born Latinas or those of Mexican origin or descent) who may be particularly vulnerable to the negative consequences of restrictive immigrant policies. Additionally, although an omnibus immigrant law has not been passed in nearly a decade, immigration remains a highly salient topic in US politics and restrictive immigrant policies continue to be a central feature of the state legislative agenda. Thus, these findings not only illuminate the impacts of omnibus immigrant laws specifically, but also shed light on the potential negative effects of other state-level, single-issue restrictive immigrant policies commonly passed throughout the US each year. In turn, this dissertation research may be used to inform contemporary immigrant policy reform, debate, and advocacy work directed at both the federal and sub-federal levels.

The dissertation of Amanda Landrian Gonzalez is approved.

Anne R. Pebley

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DEDICATION

To my husband and adventure partner, Javier Gonzalez Sarmiento. There are no words that can truly express how deeply grateful I am for your unwavering support, encouragement, and unconditional love. I share this accomplishment with you. Te amo, te quiero, te adoro.

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LIST OF ABBREVIATIONS

ACOG	American College of Obstetricians and Gynecologists
APNCU	Adequacy of Prenatal Care Utilization
BMI	Body mass index
CHIP	Children's Health Insurance Program
CHIPRA	CHIP Reauthorization Act of 2009
CI	Confidence interval
CRH	Corticotropin-releasing hormones
DHS	Department of Homeland Security
FPL	Federal poverty level
HB	House Bill
IIRIRA	Illegal Immigrant Reform and Responsibility Act
ITS	Interrupted time series
LB	Legislative Bill
LBW	Low birth weight
MOU	Memorandum of Understanding
NCHS	National Center for Health Statistics
NCSL	National Conference of State Legislatures
OIL	Omnibus immigrant law
PRWORA	Personal Responsibility and Work Opportunity Reconciliation Act
PTB	Preterm birth
SB	Senate Bill
SNAP	Supplemental Nutrition Assistance Program
US	United States of America

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This dissertation is dedicated to my husband, Javier Gonzalez Sarmiento. Thank you for supporting me throughout my graduate school journey, pushing me to dream big, hyping me up when I needed it most, and perhaps most importantly (as anyone who really knows me can attest to), making sure I was always well fed. I love you so deeply and am so grateful to have a partner like you to share this life with.

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days of working together are far from over. Amada, whose course I took in the early years of the doctoral program was the catalyst of this dissertation research, thank you for asking the best questions and helping me think critically about place, race, (im)migration, and policy. Tom, thank you for spending countless hours on Zoom talking through the methodology of this dissertation and for giving me the confidence to believe that I could actually do it. Finally, I would be remiss to not mention Dr. Steven Wallace, a committee member who sadly passed away a few months before my proposal defense. Thank you for providing early comments on my specific aims and dissertation proposal drafts. I consider myself lucky to have had the opportunity to work and collaborate with you, as brief as it may have been. You always were and continue to be a north star to so many of us in the Community Health Sciences department and beyond and will forever be missed.

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CHAPTER 1. INTRODUCTION

Preterm birth (births before 37 weeks gestation) and low birth weight (birth weights less than 2500 grams) are among the leading causes of infant morbidity and mortality and are associated with poor health and socioeconomic outcomes throughout the life course (Almond & Currie, 2011; Centers for Disease Control and Prevention, 2019a, 2019b; Singh & Yu, 2019; Wolke et al., 2019). In the United States (US), disparities exist in the occurrence of these birth outcomes across race and ethnicity. Research suggests that US- and foreign-born Latina women are at increased risk of preterm birth and low birth weight compared to White women (Martin et al., 2018; Sanchez-Vaznaugh et al., 2016). Latina women are also less likely than White women to access prenatal care, an important determinant of adverse birth outcomes (Iqbal & Iqbal, 2018; Korinek & Smith, 2011; Martin et al., 2018). Importantly, disparities persist even after controlling for individual-level factors, such as socioeconomic status and behavioral and medical risk factors.

Researchers argue that restrictive state-level immigrant policies[1] constitute an important element of the public policy environment that may contribute to and exacerbate health disparities among Latinos in the US (Hardy et al., 2012; Philbin et al., 2018). During the 20th century, states were relatively inactive in policy directed toward immigrants after Supreme Court decisions in the late 1800s affirmed the federal government's plenary power over regulating who enters and stays in the US (Gulasekaram & Ramakrishnan, 2015; Spiro, 1996). Then, in 1996, the federal government passed two important pieces of legislation, the Illegal Immigrant Reform and Responsibility Act (IIRIRA) and the Personal Responsibility and the Work Opportunity

[1] State-level immigrant-related policies are referred to throughout this dissertation as *immigrant laws* or *immigrant policies* to distinguish them from federal *immigration laws* that specifically regulate who may enter and stay in the US and in what numbers. By contrast, *immigrant laws* determine the treatment of immigrants once they are already residing in the US. (Fix & Passel, 1994)

Reconciliation Act (PRWORA), that gave states increased discretion in establishing noncitizen immigrants' eligibility for public benefits and participating in the local enforcement of federal immigration law (Bitler & Hoynes, 2011). In the immediate aftermath of the IIRIRA and PRWORA's passage, states remained relatively inactive in policies directed toward immigrants. That began to change in the years following the attacks of September 11, 2001, amid intensifying political visibility of undocumented immigrants and states' frustration over federal inaction during a period of continued growth in the immigrant and Latino populations (Provine & Varsanyi, 2012).

Starting in 2005, states began to take an increasingly active role in proposing and passing immigrant-related policies that either reiterated or expanded upon existing federal law. According to the National Conference of State Legislatures (NCSL), states enacted more than 4,000 immigrant-related laws and resolutions between 2005 and 2019 (Morse et al., 2020; Morse & Johnston, 2011), underscoring immigration as a prominent feature of states' legislative agendas in the modern era of immigration federalism (Gulasekaram & Ramakrishnan, 2015). While today the immigrant policy climate of most states is a mix of both inclusive and restrictive policies, until about 2013, the immigrant policy agenda of most states was marked by a decidedly restrictive position (Gulasekaram & Ramakrishnan, 2015).

Omnibus immigrant laws, defined as having three or more restrictive immigrant-related provisions within a single bill, are among the harshest of state-level restrictive immigrant policies (Laglagaron et al., 2008). These laws are often passed with the explicit desire to drive immigrants to "self-deport" and deter future immigrant arrivals by severely regulating daily life. This is achieved by limiting immigrants' access to employment, healthcare, transportation, education, and housing, while also increasing internal enforcement of federal immigration law

(Allen, 2016). Perhaps the most well-known of omnibus immigrant laws, Arizona's Senate Bill (SB) 1070 was passed in 2010 and, at the time, was considered the most radical restrictive immigrant policy to ever pass at the state level. Among other things, SB 1070 criminalized employment by making it illegal for undocumented immigrants to be employed or even apply for employment in the state and allowed police to arrest anyone suspected of committing a deportable offense without requiring a warrant (Allen, 2016; Senate Bill 1070. Support Our Local Law Enforcement and Safe Neighborhoods Act, 2010). The law also included what became known as the "show me your papers" provision, making the failure to carry proof of documented status a misdemeanor offense and requiring police officers to determine the documentation status of any person stopped or detained if there was "reasonable suspicion" that they were undocumented (Allen, 2016; Senate Bill 1070. Support Our Local Law Enforcement and Safe Neighborhoods Act, 2010).

The constitutionality of the law was immediately challenged in federal court, prompting several of the provisions to be placed under injunction. In particular, critics of SB 1070 argued that the "show me your papers" provision provided police officers with unprecedented discretion in who they stop and arrest and amounted to no more than "legally sanctioned racial intimidation" (Fitz & Butterfield, 2012). The case was eventually appealed all the way to the US Supreme Court, and in the case *Arizona v. United States,* the Supreme Court struck down many of SB 1070's provisions, like those that criminalized employment or allowed warrantless arrests, on preemptive grounds (National Conference of State Legislatures, 2012). However, in a critical decision, the court upheld the controversial "show me your papers" provision. Despite the legal challenges, SB 1070 spurred several copycat laws in states like Alabama, Georgia, and Indiana that also encountered similar court battles (National Conference of State Legislatures, 2012). In

total, lawsuits and court decisions blocked portions of the laws from ever taking effect in seven of the 10 states that enacted omnibus immigrant laws between 2006 and 2013 (Allen, 2016).

Still, despite their limited implementation, the very passage of omnibus immigrant laws had far-reaching consequences, particularly among Latino communities, including effects on in- and out-migration (Amuedo-Dorantes & Pozo, 2014; Good, 2013; Raphael & Ronconi, 2009), labor force participation (Raphael & Ronconi, 2009), and crimes reporting (Gonzalez, 2011). Moreover, an evaluation conducted by the US Department of Justice found that Alabama's omnibus immigrant law, HB 56, had measurable impacts on Latino children's school enrollment and attendance, while no impacts were detected among children of other races or ethnicities (CNN, 2012; Perez, 2012). A host of literature also provides evidence of the negative effects of omnibus immigrant laws on health-related outcomes among Latinos, including poorer self-rated health status (Anderson & Finch, 2014), decreased healthcare access and utilization (Allen, 2018; Beniflah et al., 2013; Toomey et al., 2014; White, Blackburn, et al., 2014; White, Yeager, et al., 2014), increased discrimination (Ayón & Becerra, 2013; Santos et al., 2013; Szkupinski Quiroga et al., 2014), and pervasive fear and stress (Ayón & Becerra, 2013; Koralek et al., 2009; Szkupinski Quiroga et al., 2014). A framework proposed by Philbin and colleagues (2018) elucidates the various pathways by which restrictive state-level immigrant policies may contribute to health disparities among Latinos. Namely, the authors suggest that omnibus immigrant laws threaten the health of Latinos, regardless of nativity or documentation status, by increasing stress produced via structural racism and reducing access to healthcare services, beneficial social institutions (e.g., education), and material goods and conditions (e.g., housing, food, employment) (Philbin et al., 2018).

Although undocumented immigrants are the primary target of omnibus immigrant laws and would arguably experience the strongest consequences of their passage, their effects can extend to both documented immigrants and US-born co-ethnic citizens. While immigrants, undocumented immigrants, and Latinos as social groups should not be conflated with one another (i.e., that all Latinos are immigrants or all undocumented immigrants are Latino), there is substantial overlap among these groups that may explain potential spillover effects of state-level immigrant policies among those not directly targeted by the laws (Philbin et al., 2018). Latinos constitute the largest non-White racial/ethnic group, as well as the largest immigrant group, in the US (Noe-Bustamante & Flores, 2019). It is estimated that nearly 17 million people have at least one undocumented family member living in the same household, and about 9 million US citizens live in these "mixed-status" households (Budiman, 2020). Further, it is estimated that 1 in 10 babies born in the US has at least one undocumented parent (Passel & Cohn, 2010). Given that 80% of undocumented immigrants in the US are Mexican or Central American, mixed-status households may be particularly prevalent among Latinos (Massey & Pren, 2012). Hence, spillover effects can emerge from sheer proximity, given that many documented immigrant and US-born Latinos are embedded within the same households, families, and communities as those who are undocumented.

In addition, omnibus immigrant laws have instrumental and symbolic effects, communicating the extent to which immigrants are welcomed and deserving of rights and resources. The media and political rhetoric that accompanied omnibus immigrant laws defended their passage by framing immigrants as racialized others who pose a significant risk to national security, the economy, and traditional American values (Gee & Ford, 2011; Pedraza & Zhu, 2013; Viruell-Fuentes et al., 2012). In the current era of immigration federalism, this rhetoric has

been particularly targeted toward immigrants from Latin America that includes "metaphors of war and conflict, such as the *invasion* of Mexican and undocumented immigrants coming across the [US-Mexico] border into border states and flooding current native populations" (S. J. Wallace, 2014, p. 268). This sort of political and media messaging surrounding restrictive state-level immigrant policies, including omnibus immigrant laws, helps entrench social constructions of a racialized legal status whereby race/ethnicity is conflated with nativity and documentation status. In this way, state-level immigrant policies act as a form of structural racism, contributing to a broader anti-immigrant and anti-Latino climate that can have negative impacts for anyone *perceived* to be an undocumented immigrant based on skin color, social class, language, or other characteristic (Viruell-Fuentes et al., 2012). For Latinos, race/ethnicity, immigration status, and documentation status are in fact conflated so that "in the popular imagination all Latinos are perceived to be Mexican, all Mexicans are seen as immigrants, and they, in turn, are all cast as undocumented" (Viruell-Fuentes et al., 2012, p. 2103). As a result, all Latinos become vulnerable to experiences of racial profiling and discrimination that can cause significant fear and stress. This may be especially true in the context of internal immigration enforcement, described as a gendered racial project that specifically targets Mexican and Central American immigrants and Latino communities at large (Armenta, 2017; T. Golash-Boza & Hondagneu-Sotelo, 2013). Indeed, working-class Latino men accounted for the vast majority of the roughly 4 million deportations carried out between 2003 and 2016. So, while omnibus immigrant laws as written may be "race neutral," they constitute an important form of structural racism, providing a framework and mechanism for the social, economic, and political exclusion of Latinos (De Trinidad Young & Wallace, 2021).

Guided by Philbin and colleagues' framework, I hypothesize that omnibus immigrant laws contributed to disparities in pregnancy outcomes among Latina women, regardless of nativity or documentation status, due to stress produced via structural racism and decreased access to healthcare, beneficial social institutions, and material conditions. Recent studies provide early evidence of the negative effects of restrictive state-level immigrant policies on adverse birth outcomes and decreased prenatal care utilization among Latina women in the US (Amuedo-Dorantes et al., 2021; Novak et al., 2017; Rhodes et al., 2015; Ro et al., 2020; Torche & Sirois, 2019). Though to date, only one study has evaluated the effects of omnibus immigrant laws, specifically, on birth outcomes. This study found that exposure to the passage of Arizona's SB 1070 was associated with significantly lower birth weight among foreign-born Latina women but not US-born Latina women (Torche & Sirois, 2019). This finding departs from other work that has found evidence of the spillover effects of restrictive state-level immigrant policies on birth outcomes among both foreign- and US-born Latina women (Novak et al., 2017; Rhodes et al., 2015; Ro et al., 2020; Stanhope et al., 2019). The authors speculate that US-born Latinas in Arizona may be more accustomed to racialized exclusion making the passage of SB 1070 a less consequential stressor for them compared to their foreign-born counterparts in the state (Torche & Sirois, 2019). However, the authors did not account for the passage of a previous omnibus immigrant law in 2007 (Arizona House Bill 2779) that may have affected how US-born Latinas subsequently responded to the second policy. Furthermore, the authors did not assess the impacts of SB 1070 on preterm birth or prenatal care utilization. More research is needed that examines differences in the effects of omnibus immigrant laws on foreign- versus US-born Latina women.

In addition to the need for research that disentangles the extent to which the effects of restrictive immigrant laws differ across nativity status, there are no studies that examine potential

differences across national origin subgroups of Latina women, such as Mexicans, Cubans, and Puerto Ricans. These represent the three largest Latin origin subgroups in the US, accounting for roughly 80% of the total Latino population (Noe-Bustamante, 2019). Importantly, since Mexicans alone account for more than 60% of the Latino population (Noe-Bustamente et al., 2019), health patterns observed among this group may drive findings in analyses that are not disaggregated by national origin (Acevedo-Garcia & Bates, 2008). Different subgroups of Latinos have also been regarded differently by the US government, which can influence how they interact with or respond to omnibus immigrant laws passed in the 2000s. For example, when large numbers of Cubans arrived in Florida in the 1980s and 90s, the federal government responded by granting Cuban nationals refugee status that conferred upon them greater access to social services (Martinez et al., 2015). Furthermore, in the mid-1990s, the Clinton administration instituted what is commonly referred to as the "wet foot, dry foot" policy that allowed Cubans who reached US land without documentation to become legal permanent residents that also afforded them greater access to social benefits (Labott et al., 2017). The Department of Homeland Security (DHS) also had a longstanding policy that exempted Cuban nationals apprehended at ports of entry or US borders from expedited removal proceedings[2] (Labott et al., 2017). These policies amounted to Cuban migrants being treated in a vastly different manner, and encountering a different climate of reception, than migrants from most other countries in the world. While not the only factor, these policies likely contributed to current demographic trends whereby most Cubans are legal permanent residents (LPRs) or US citizens, whereas large numbers of Mexicans and Central Americans are undocumented or lack citizenship (Blizzard &

[2] The DHS terminated this policy in January 2017 following the Obama administration's ending of the "wet foot, dry foot" policy as one of the last foreign policy acts of former President Barack Obama's term in office (Labott et al., 2017). However, both policies were in place during the timeframe in which states were active in passing omnibus immigrant legislation from 2006 through 2013.

Batalova, 2020; Massey & Pren, 2012; Zong & Batalova, 2018). This documented status may equate to Cubans feeling less threatened by restrictive immigrant policies that primarily target undocumented immigrants, the majority of whom are of Mexican or Central American descent. Relatedly, the US colonization of Puerto Rico and the holding of US citizenship among those born on the island affords certain rights and privileges that are not immediately available to Latino immigrants from other countries. This may also influence the extent to which Puerto Ricans are affected by omnibus immigrant legislation. Factors such as these, combined with political and media rhetoric focused heavily on the US-Mexico border, may translate to the effects of omnibus immigrant laws being felt more acutely among Mexicans versus Cubans or Puerto Ricans. Specifically, Latinas of Mexican origin or descent may experience more stress resulting from the passage of omnibus immigrant laws that increases their risk of inadequate prenatal care utilization and poor birth outcomes relative to other Latina subgroups. Alternatively, because of the way that omnibus immigrant laws reinforce constructions of a racialized legal status for anyone perceived as Latino, it is possible that subgroups of Latinas experience similar effects of omnibus immigrant laws on pregnancy outcomes. To my knowledge, no study has examined whether the effects of restrictive state-level immigrant policies broadly, nor omnibus immigrant laws specifically, differ across national origin subgroups.

This dissertation study utilizes national population-based data and a quasi-experimental design to address noteworthy gaps in the literature by examining the effects of omnibus immigrant laws on prenatal care utilization and adverse birth outcomes among Latina women in the US, with a particular focus on investigating differences across nativity status and national origin. Specifically, this dissertation will: 1) determine the effects of omnibus immigrant laws on

the odds of preterm birth and low birth weight, respectively, among infants born to Latina women in the US, including an examination of potential moderation by nativity status (i.e., US-born vs. foreign-born); 2) determine the effects of omnibus immigrant laws on the odds late entry into prenatal care and inadequate prenatal care utilization, respectively, among infants born to Latina women and if there are differences in these effects across nativity status; and 3) assess whether the effects of omnibus immigrant laws on pregnancy outcomes differ across mother's national origin (e.g., Mexican vs. Cuban vs. Puerto Rican origin women).

CHAPTER 2. BACKGROUND AND LITERATURE REVIEW

This chapter is divided into seven sections. The first provides a summary of the Latino population in the US, including a profile of Latino immigrants and socioeconomic indicators, and is intended to highlight the heterogeneity of the US Latino population across both nativity status and national origin. In the second section, I describe the epidemiology of prenatal care utilization, preterm birth, and low birthweight among Latina women in the US. This section also includes a discussion around the so-called epidemiologic paradox of birth outcomes among Latina women, describing differences across both nativity status and national origin. The third section reviews risk factors commonly attributed to preterm birth and low birth weight, while also providing a brief description of the role of prenatal care utilization as a critical determinant of birth outcomes. In the fourth section, I review the existing literature on a relevant body of work that examines the effects of other state-level restrictive immigrant policies (e.g., immigration raids and other local immigration enforcement activities) on birth outcomes among Latina women. I then provide an in-depth review of omnibus immigrant laws specifically in the fifth section, describing how they are defined, where they exist, their common provisions, the resulting court challenges, and a summary of the literature on the overall impacts of their implementation. This is followed by a sixth section that reviews the existing literature on the health-related impacts of omnibus immigrant laws. Finally, I conclude the chapter with a summary of the literature, underscoring important gaps that situate this dissertation study.

Sociodemographic Profile of Latinos in the US

Accounting for approximately 18% of the total population, Latinos constitute the largest non-White racial/ethnic group in the US (Noe-Bustamante & Flores, 2019). Projections show that, by 2050, Latinos will account for nearly one-third of the total US population (Passel &

Cohn, 2008). Currently, Mexicans make up about 65% of all Latinos compared to 9% of Puerto Ricans (not including those residing on the island) and about 4% of Cubans. The other largest Latin origin groups include Salvadorans, Dominicans, Guatemalans, Colombians, Hondurans, and Peruvians. Together, these groups account for more than 90% of the US Latino population (Motel & Patten, 2012). The states with the highest share of Latino residents include New Mexico, California, Texas, Arizona, Nevada, and Florida.

Latino Immigrants in the US

Latinos are also the largest immigrant group in the US; nearly half of the foreign-born population originates from Mexico, Central America, or South America and about 35% of all Latinos in the US are immigrants (Noe-Bustamante & Flores, 2019). While Puerto Ricans, Cubans, and Dominicans tend to be US citizens or legal residents (for example, about 60% of Cuban immigrants are naturalized citizens compared to 50% of the total foreign-born population and 30% of the Mexican immigrant population), large numbers of Mexicans and Central or South Americans lack citizenship or are undocumented (Blizzard & Batalova, 2020; Massey & Pren, 2012; Zong & Batalova, 2018). Estimates suggest that more than 50% of Mexican immigrants are residing in the US without documentation, while more than 70% of Guatemalan and Honduran immigrants, respectively, are undocumented (Massey & Pren, 2012). In total, Mexicans and Central Americans account for more than two-thirds of the undocumented population in the US. Furthermore, estimates suggest that, in general, Latino immigrants are more likely to be undocumented than their White or Black peers (Asad & Clair, 2018).

Since at least 2005, immigration enforcement has disproportionately targeted immigrants from Latin America (Asad & Clair, 2018). Although Latinos account for about two-thirds of the undocumented population, they consistently account for about 95% of those detained and

deported (Asad & Clair, 2018). Not only is immigration enforcement in the US described as a racial project, but it is also gendered and classist; most deportees are working-class Latino men (T. Golash-Boza & Hondagneu-Sotelo, 2013). This has important consequences for women and their children who lose critical economic and social supports when their partners or other family members are detained and/or deported. It must also be recognized that the threat of deportation does not exist solely among those with undocumented status. There is emerging literature that suggests that even immigrants who are in the US with a documented status can suffer the same consequences as their undocumented peers if and when caught in the immigration enforcement system (Asad, 2017; T. M. Golash-Boza, 2015).

Socioeconomic Indicators among Latinos

In 2017, the median household income for Latino families was approximately $50,000 compared to $68,000 among White families. There is also variation across nativity status, whereby US-born Latinos have a median household income of approximately $53,000 versus $45,200 among foreign-born Latinos (Noe-Bustamante & Flores, 2019). Compared to 10% of White folks, about 20% of Latinos, regardless of nativity status, live in poverty (Noe-Bustamante & Flores, 2019; UC-Mexico Initiative Health Working Group, 2017). Further, nearly half (47%) of all Latinos are homeowners (49% among US-born and 46% among foreign-born Latinos) (Noe-Bustamante & Flores, 2019). In terms of educational attainment, about 16% of Latino adults have a bachelor's degree or higher, a proportion that is half that observed in the total US population (32%) (Noe-Bustamante, 2019).

There is also considerable heterogeneity in socioeconomic characteristics across national origin. For example, about 30% of Cubans, Puerto Ricans, and Mexicans, respectively, have a high school education, the highest shares of all Latin origin subgroups. However, Venezuelans

(55%) and Argentinians (43%) have the highest proportion of those with a bachelor's degree or higher, while Guatemalans and Salvadorans have the lowest at just 10% (Noe-Bustamante, 2019). Argentinians also have the highest median household income at $68,000, whereas Mexicans have a median household income comparable to the average among all Latinos ($49,000) and Hondurans have the lowest at $41,000 (Noe-Bustamante, 2019). While more than one-quarter of all Latinos lack health insurance (a proportion twice as high as seen among the White population), about half of Hondurans are without health insurance compared to 15% of Puerto Ricans (Noe-Bustamante, 2019).

Birth Outcomes Among Latina Women in the US

Adverse Birth Outcomes in the US and Their Consequences

In 2018, 10% of all births in the US were preterm, or occurring before 37 weeks gestation, and more than 8% were categorized as low birth weight (weighing less than 2500 grams or 5 pounds, 8 ounces) (Martin et al., 2019). Preterm birth and low birth weight are among the leading causes of infant morbidity and mortality in the US (Singh & Yu, 2019), and both have been steadily increasing since 2014 (Martin et al., 2019). Infants born preterm and low weight experience an increased risk of adverse physical and psychological health and economic outcomes throughout the life course (Almond & Currie, 2011; Centers for Disease Control and Prevention, 2019a, 2019b; Wolke et al., 2019). As newborns, preterm and low weight infants are more likely to experience difficulties with breathing and feeding, vision and hearing problems, and developmental delays or severe neuromotor impairment, such as cerebral palsy (Centers for Disease Control and Prevention, 2019b). As adolescents and adults, these infants are more likely to have poorer educational performance and attainment, as well as lower self-reported health-related quality of life (Wolke et al., 2019). Pregnant women who themselves were born low

weight are also at increased risk of delivering a low weight infant, further underscoring the intergenerational impacts of such outcomes (Collins & David, 2009). In addition, the economic costs of adverse birth outcomes like preterm birth and low birth weight are considerable. Each year, the cost of preterm and low birth weight admissions totals roughly $6 billion US dollars (Russell et al., 2007). It is estimated that these admissions account for at least 50% of costs related to infant hospitalizations (Russell et al., 2007). Because preterm and low weight infants experience poor outcomes throughout the life course, significant economic costs are accrued across other sectors, too, including employment, education, and social services (Petrou et al., 2001), suggesting the potential for major cost savings should these outcomes be prevented.

Prenatal Care Utilization among Latina Women

Adequate utilization and early initiation of prenatal care are important determinants of women's birth outcomes, including preterm birth and low birth weight (Louis & Platt, 2011). Several studies find that Latina women are more likely to have inadequate prenatal care utilization and delayed entry into prenatal care than White women, even after adjusting for individual-level characteristics, such as age, marital status, insurance coverage, and socioeconomic status (Bromley et al., 2012; Frisbie et al., 2001; Iqbal & Iqbal, 2018). Undocumented immigrant women are also less likely than the general population and documented peers to achieve adequate prenatal care utilization (Fabi, 2019; Korinek & Smith, 2011; Reed et al., 2005). Among Latina women, differences in prenatal care utilization across nativity status and national origin have also been documented. For example, in one study conducted among births to Latina women in North Carolina, Mexican-born women had significantly lower prenatal care utilization than US-born Latinas (Leslie et al., 2006). This study also found that, compared to Latina women born in the US, Mexico, or "other Latin country,"

women born in Cuba and Puerto Rico were the most likely to initiate prenatal care in the first trimester; Mexican-born women were the most likely to initiate care in the second and third trimesters, respectively (Leslie et al., 2006). Another study reported similar results, finding that Cuban and Puerto Rican women had significantly better prenatal care utilization than women of Mexican or other Central and South American origin (Albrecht & Miller, 1996). Finally, Madan et al. (2006) found that Mexican-born women were more likely than US-born women of Mexican-origin to have initiated prenatal care in the first trimester.

Birth Outcomes among Latina Women and the Epidemiological Paradox

Racial and ethnic disparities in birth outcomes are well documented, including a large body of literature that has examined rates of adverse birth outcomes among Latina compared to White women in the US. Several studies have found that the risk of preterm birth and delivering a low birth weight infant among Latina women overall, Latina immigrants, Mexican women overall, and Mexican immigrant women, respectively, to be comparable or lower than that among White women or US-born women overall (Acevedo-Garcia et al., 2005; Brown et al., 2007; Cervantes et al., 1999; Collins & Shay, 1994; M. E. S. Flores et al., 2012; Fuentes-Afflick & Lurie, 1997). Furthermore, several studies find that US-born Latina women are more likely to experience adverse birth outcomes than their foreign-born counterparts (M. E. S. Flores et al., 2012). Because Latinas, on average, have lower socioeconomic status and prenatal care utilization than White women, findings that Latinas overall or Latina immigrants more specifically have similar or more favorable birth outcomes than white or US-born peers has been termed the "Latina epidemiological paradox," "Latina health paradox," or the "immigrant paradox." Several explanations for these findings have been suggested, including biases related to migration selection and more health-promoting behaviors (e.g., lower likelihood of smoking

and alcohol consumption, better nutritional status) or greater family and community support among Latina women (M. E. S. Flores et al., 2012).

However, a sizable body of literature has also failed to find evidence of an epidemiological paradox, reporting significantly increased risk of preterm birth and low birth weight among infants born to US- and foreign-born Latina women compared to those born to their White counterparts even after controlling for socioeconomic status and other individual-level indicators of health status (Acevedo-Garcia et al., 2007; M. E. S. Flores et al., 2012; Fuentes-Afflick et al., 1998; Hoggatt et al., 2012; Montoya-Williams et al., 2020; Sanchez-Vaznaugh et al., 2016; Singh & Yu, 1996). The mixed findings may be related to ambiguities in the definitions of the paradox, including who the reference group is, variation in the sample populations under study, and potential changes in these general trends over time. In fact, the proportion of infants born preterm and low weight has gradually increased in recent years among Latina women overall, while rates have remained steady among White women (Martin et al., 2019). There is also evidence of recent increases in the risk of preterm birth among foreign-born Latina women, particularly among those originating from Mexico or Central America (Krieger et al., 2018). Furthermore, while research exploring differences in birth outcomes across nativity status among Latina women consistently finds evidence of an immigrant health advantage, this advantage may decline with increasing time spent in the US due to pressures to assimilate to US culture and experiences of stress, racism, and discrimination, and potential barriers related to documentation status. Researchers also argue that a focus on the Latina epidemiological paradox obscures important differences across subgroups of Latina women, whereby birth outcomes may not be considered “paradoxically good” for all US- and/or foreign-born Latina women (Montoya-Williams et al., 2020).

Indeed, studies have found marked heterogeneity in the risk of adverse birth outcomes across subgroups of Latina women, whereby Puerto Rican women generally experience poorer birth outcomes than their Cuban and Mexican peers (Montoya-Williams et al., 2020). Differences have also been documented comparing US- versus foreign-born Latina women across national origin. For example, one study found that foreign-born status significantly reduced the risk of low birth weight among Mexican-origin women but not among Cubans, Puerto Ricans, and other Latina subgroups (Acevedo-Garcia et al., 2007). Another study found the reduced risk of adverse birth outcomes associated with foreign-born status to be substantially higher among Cubans and Mexicans than for other subgroups (Singh & Yu, 1996). In summary, evidence suggests that Puerto Rican women, regardless of nativity status, may be the most likely to experience adverse birth outcomes and that foreign-born status may be particularly protective for Mexican origin women than for women of other Latin subgroups (Montoya-Williams et al., 2020). Differences in birth outcomes among subgroups of Latina women across nativity status may result from differences in socioeconomic gradients of sending countries, the presence of protective cultural and social factors, or immigrant health selection processes (Acevedo-Garcia et al., 2007). For example, health selection processes may not be operating among Puerto Ricans who can easily migrate between the island and mainland US due to holding US citizenship (Acevedo-Garcia et al., 2007). It has also been suggested that both US- and foreign-born Puerto Rican women are more likely to be socially ascribed Black race than other Hispanic women and, thus, are at even greater risk of experiencing stress related to racial discrimination (Montoya-Williams et al., 2020).

Together, these findings offer several insights that inform the current study. First, disparities in birth outcomes among Latina women compared to White women and among US-

born Latina women compared to foreign-born peers persist even after controlling for important individual-level characteristics such as socioeconomic status, behavioral and medical risk factors, and access to prenatal care. Thus, studies are needed that consider the influence of upstream factors on birth outcomes among Latina women. Specifically, researchers argue that elements of the sociopolitical environment, such as state-level immigrant policies, are an important determinant of health outcomes among Latinos (De Trinidad Young & Wallace, 2021; Philbin et al., 2018). Second, there is a need for studies investigating birth outcomes among Latina women to consider potential differences across both nativity status and national origin. Given that Mexican-origin Latinos account for more than 60% of the total Latino population in the US (Noe-Bustamente et al., 2019), health patterns observed among this group may drive findings in analyses that are not disaggregated by national origin (Acevedo-Garcia & Bates, 2008). Moreover, in the context of restrictive immigrant policies, it is hypothesized that subgroups of Latinos will interact with or respond to these policies differently given varying histories of migration and contexts of reception, the distribution of socioeconomic and behavioral risk factors, and the distribution of citizenship and documentation statuses across national origin subgroups. Although Mexican women, on average, may experience better birth outcomes than other Latina subgroups, they may still experience the greatest change in outcomes following the passage of restrictive policies given an anti-immigrant climate particularly hostile toward Mexicans. Thus, the effects of restrictive immigrant policies on birth outcomes may differ across both nativity status and national origin and warrants further investigation.

Causes and Risk Factors for Preterm Birth and Low Birth Weight

Although low birth weight represents a combination of preterm births *and* growth restricted infants born to term, these two outcomes are understood to have both distinct and

overlapping etiologies and risk factors. The following sections briefly summarize the causes and risk factors of preterm birth and low birth weight, including the role of prenatal care utilization.

Preterm Birth

Several biologic pathways are thought to contribute to the etiology of preterm birth, including bacterial infections of the chorioamniotic membrane (making up the amniotic sac) that produce inflammation and vascular irregularities that affect placental nutrient transfer, maternal blood pressure, and other processes involved in fetal development (Louis & Platt, 2011). Evidence also suggests a candidate biological mechanism linking maternal stress to the risk of preterm delivery via disruptions to neuroendocrine, immune, and/or inflammatory systems and processes (Louis & Platt, 2011). For example, through the neuroendocrine system, maternal and fetal stress may increase the release of placental corticotropin-releasing hormones (CRH) to initiate preterm labor. During normal pregnancies that result in births at term, levels of CRH rise throughout the second and early third trimester of pregnancy before increasing exponentially during the final 6 weeks of pregnancy (Hobel et al., 1999). However, excess production of CRH during the second and third trimesters has been linked to increased risk of preterm labor and delivery (Hobel et al., 1999; Holzman et al., 2001; McLean et al., 1999). Although, other studies suggest that the first and second trimester constitute sensitive periods to acute stressors (Shapiro et al., 2013). Further, increased CRH levels have been linked to maternal psychosocial stress and evidence also suggests that they may mediate the association between maternal anxiety and stress and an increased risk of preterm birth (Hobel et al., 1999; Mancuso et al., 2004).

In addition to stress as an independent risk factor of preterm birth, several other risk factors have been identified in the literature. Prior preterm birth, cigarette smoking, and low pre-pregnancy body mass index (BMI) have been found to increase risk of preterm birth, whereas

regular leisure physical activity and various dimensions of social support have been found to significantly decrease the risk. Problematically, race/ethnicity, particularly Black race, has historically been cited as a "risk factor" for preterm birth, implying a biological (or genetic) predisposition of preterm birth among certain racial/ethnic groups. However, a genetic explanation for racial/ethnic disparities in birth outcomes has been widely disputed given the lack of scientific research to support the claims. Instead, researchers have pointed to differences in the social conditions of life produced via structural and interpersonal racism as an underlying mechanism by which Black women and other women of color, including Latina women, may experience poorer birth outcomes than their White counterparts (Dominguez, 2008; Gee & Ford, 2011; Phelan & Link, 2015).

Of note, restrictive immigrant policies constitute an important form of structural racism that can contribute to experiences of stress and discrimination that harm health for both US- and foreign-born Latinos (Gee & Ford, 2011). Indeed, experiences of structural and interpersonal racism have been linked to increased chronic stress (Bailey et al., 2017) that, as noted previously, can disrupt critical biological mechanisms that may initiate preterm labor. Studies have also found a relationship between experiences of interpersonal racism and behaviors like smoking and alcohol or substance use that can also increase risk of preterm birth (Paradies, 2006).

Low Birth Weight

Several maternal, fetal, and placental factors influence the risk of delivering a low weight infant by disrupting placental processes, such as the releasing of placental hormones, and uteroplacental circulation that are responsible for fetal growth (Louis & Platt, 2011). Fetal and placental factors include chromosomal anomalies and other congenital malformations of the fetus and abnormalities in placental structure (Louis & Platt, 2011). Maternal factors include

maternal diseases and pregnancy outcomes, such as hypertensive disorders in pregnancy, diabetes, and renal and cardiac disease, smoking cigarettes, and factors associated with low socioeconomic status, such as physically laborious work, poor nutrition, and hazardous environmental exposures (Louis & Platt, 2011).

Like preterm birth, maternal stress is also thought to be both a direct and indirect cause of low birth weight. As described earlier, maternal stress can cause disruptions to neuroendocrine, immune, and/or inflammatory systems and processes that can consequently restrict oxygen and nutrients to the fetus and impair fetal growth (Louis & Platt, 2011). Indeed, numerous studies have documented an association between the experience of maternal stress or acute stressors during pregnancy and low birth weight (Bruckner et al., 2013; Catalano & Hartig, 2001; Nkansah-Amankra et al., 2010; Rondó et al., 2003; Sable & Wilkinson, 2000). The relationship between maternal stress and fetal growth restriction may also be mediated by behavioral changes. For example, women experiencing acute or chronic stress may be more likely to smoke cigarettes or use other substances (McAnarney, 1990). Population studies find that smoking is more prevalent among those experiencing stressful life events (Kassel et al., 2003). Symptoms of depression and anxiety and higher levels of stress have also been found to be associated with smoking prior to pregnancy and a lower likelihood of remaining abstinent from smoking during pregnancy (Hauge et al., 2012). There is also evidence that increased stress can influence healthcare-related behaviors, including decreasing the utilization of prenatal care. Again, restrictive immigrant laws may constitute a significant stressor for both US- and foreign-born Latina women that either directly or indirectly influences the risk of low birth weight via stress pathways.

The Role of Prenatal Care Utilization

Prenatal care utilization plays a critical role in determining pregnancy outcomes (Louis & Platt, 2011). Since the 1980's, prenatal care has become an established population-wide public health intervention for the prevention of adverse maternal and infant health outcomes. It is recommended that women begin receiving prenatal care in their first trimester and continue to have prenatal care visits once a month through the seventh month (28 weeks), every two to three weeks through the eighth month (36 weeks), and then weekly thereafter until labor and delivery (Louis & Platt, 2011).

During visits, the fetus is monitored for growth and screened for genetic and congenital anomalies. Women also receive physical examinations and are routinely checked for conditions that may signal current or impending complications. Thus, the regular schedule of prenatal care visits allows for the early detection and treatment of health problems that can be harmful for the mother and her baby, while also preventing other health problems from ever occurring. Women accessing prenatal care may also receive benefits from addressing other behavioral (e.g., substance use) and environmental factors that also contribute to poor health outcomes.

Receiving no or limited prenatal care, as well as late entry into prenatal care, puts women at increased risk of experiencing poor pregnancy outcomes, including preterm birth and low birth weight (Kotelchuck, 1994b; Partridge et al., 2012); conversely, the receipt of adequate prenatal care is associated with minimal risk of poor outcomes (Louis & Platt, 2011). Reducing barriers to prenatal care among immigrants can also significantly reduce healthcare costs associated with largely preventable maternal and newborn health complications (Lu et al., 2000). The benefits of prenatal care may also extend well beyond the improvement of maternal and perinatal or newborn outcomes, resulting from a more intensive integration into the healthcare system during

pregnancy that can improve the likelihood of both women and children receiving future preventative care and other social benefits (Korinek & Smith, 2011). This may be particularly important for foreign-born Latino populations who tend to experience an erosion in health advantages at birth once they reach early childhood (Korinek & Smith, 2011).

As described earlier, persistent disparities in prenatal care utilization exist across race/ethnicity and nativity status. In general, US- and foreign-born Latina women are more likely to have inadequate prenatal care utilization and to initiate prenatal care later than their White peers (Green, 2018; Partridge et al., 2012; Singh & Yu, 1996). Undocumented immigrants are also more likely than their documented peers to have decreased prenatal care utilization (Fabi, 2019; Korinek & Smith, 2011; Reed et al., 2005). Further, there exists significant variation in the timing and use of prenatal care among Latina women of different national origins. Disparities in birth outcomes among subgroups of Latina women and between Latina and White women may partially reflect disparities in prenatal care utilization. Although it has yet to be formally tested, scholars suggest that one mechanism by which restrictive immigrant policies may influence disparities in birth outcomes among Latina women is through reduced prenatal care utilization (Philbin et al., 2018; Ro et al., 2020; Torche & Sirois, 2019).

Restrictive Immigrant Policies and Birth Outcomes

State-level immigrant policies are posited as being of particular significance to health disparities among Latino populations (Philbin et al., 2018). Examining the health impacts of restrictive immigrant policies has received increased attention in recent years; however, to date, only one study has evaluated the effects of omnibus immigrant laws specifically on birth outcomes. In this study, Torche and Sirois (2019) found that prenatal exposure to the passage of Arizona's SB 1070 was associated with significantly lower birth weight among foreign-born

Latina women but not US-born Latinas, suggesting the absence of spillover effects of the law on the US-born population. Stanhope et al. (2019) found that restrictive state-level immigrant policy climates were associated with elevated risk of preterm birth among Latina women. Further, the authors found that the estimated effects were similar for US- and foreign-born Latina women, while no effects were observed among US-born white or Black women (Stanhope et al., 2019).

A related area of research has explored the effects of immigration enforcement on pregnancy outcomes. Novak and colleagues (2017) found a significant increase in the risk of low birth weight among both US- and foreign-born Latina women following a large workplace raid in Iowa, while no change was observed among White women. Another study found that high levels of immigration apprehensions conducted by local law enforcement agencies increased the odds of preterm birth among Latina women in California (Ro et al., 2020). Similarly, Amuedo-Dorantes and colleagues (2021) found that the increased presence of immigration enforcement policies in the US states was associated with increased risk of low birth weight among a sample of infants born to foreign-born Mexican and Central American women. Immigration enforcement has also been linked to an increased likelihood of delayed initiation of prenatal care and inadequate prenatal care utilization among Latina compared to non-Latina White women (Rhodes et al., 2015). Although not conducted among Latinas specifically, Tome et al. (2021) evaluated the association between ICE interventions and pregnancy outcomes in North Carolina and also found an increased likelihood of low birth weight and inadequate prenatal care utilization among foreign-born women in the state following implementation of Section 287(g) of the Immigration and Nationality Act.

Omnibus immigrant laws are the most extreme of restrictive immigrant policies to be passed at the state level, regulating immigrants' daily life across multiple domains, including

healthcare, employment, transportation, and housing (Laglagaron et al., 2008). They also commonly increase internal enforcement of federal immigration law, a demonstrated predictor of reduced prenatal care utilization and adverse birth outcomes. As a result, the passage of these restrictive policies may have particularly harmful health consequences for Latinos; their potential effects on prenatal care utilization and birth outcomes, critical indicators of population health, among both US- and foreign-born Latina women requires further attention.

Omnibus Immigrant Laws

While regulating who enters and stays in the US remains under the sole purview of the federal government, two important pieces of federal legislation were passed in 1996 that increased states' ability to pass policies pertaining to noncitizen immigrants' rights and eligibility for public benefits: The Illegal Immigrant Reform and Responsibility Act (IIRIRA) and the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) (Bitler & Hoynes, 2011). In their aftermath, states have introduced thousands of immigrant laws and resolutions; since 2007, more than 200 laws and resolutions have passed each year (Morse, 2020). While many of these policies are intended to expand the rights of immigrants and promote their integration within US society, others are restrictive and deny immigrants access to social services and benefits.

Omnibus immigrant laws, defined as having three or more restrictive immigrant-related provisions within a single bill, are considered the harshest of state-level immigrant laws (Laglagaron et al., 2008). Arguably the most well-known of these laws is Arizona's Support Our Law Enforcement and Safe Neighborhoods Act (SB 1070), passed by legislators in April 2010 (Allen, 2016; Senate Bill 1070. Support Our Local Law Enforcement and Safe Neighborhoods Act, 2010). Considered the toughest restrictive immigrant policy passed at the state level at the

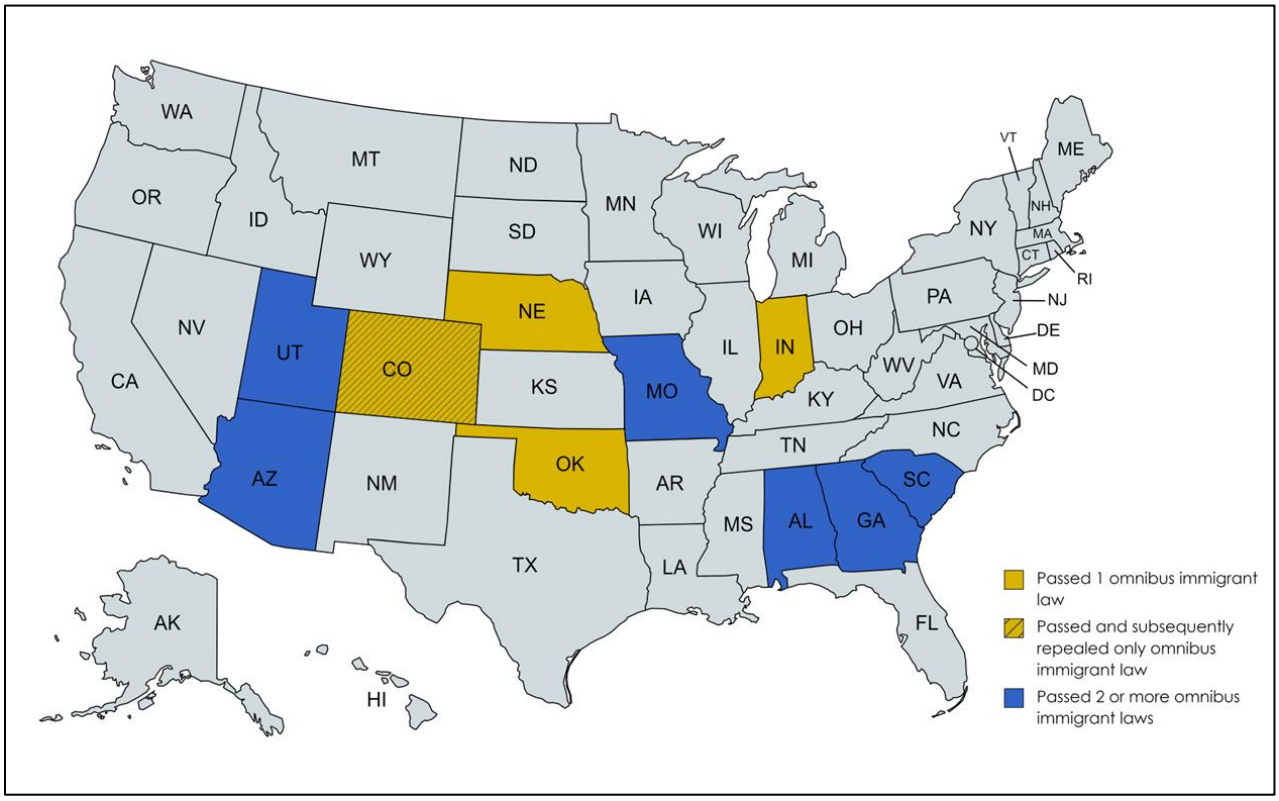
time, SB 1070 took unprecedented steps toward increasing internal enforcement of federal immigration law by making it a crime to be in the state without documented status, requiring that police officers verify documentation status at legal stops, and allowing officers to make warrantless arrests if the individual has committed an offense that would qualify for deportation and there was "reasonable suspicion" that the individual was undocumented. The law also created criminal penalties for anyone who applied for employment or performed work without proper legal permission to do so in the US, as well as for assisting undocumented immigrants (i.e., transporting, harboring, concealing, or shielding an undocumented immigrant) (Allen, 2016; Senate Bill 1070. Support Our Local Law Enforcement and Safe Neighborhoods Act, 2010). In many ways, SB 1070 served as a blueprint for restrictive immigrant policy; in 2011, five states passed similar "copycat" legislation. Critics of omnibus immigrant laws like Arizona's SB 1070 argue that they encourage allow and encourage racial profiling and discrimination against those perceived to be foreign or undocumented (especially from law enforcement) and are largely motivated by prejudice against Latinos (Avery et al., 2017).

However, SB 1070 was not the first omnibus immigrant law to pass in the country, nor was it the first omnibus immigrant law to be passed in Arizona (Allen, 2016). In total, ten states passed *at least* one omnibus immigrant law between 2006 and 2013: Alabama, Arizona, Colorado, Georgia, Indiana, Missouri, Nebraska, Oklahoma, South Carolina, and Utah (**Figure 2.1**) (Allen & McNeely, 2017; *Omnibus Immigration Legislation*, 2012).[3] The first omnibus immigrant law to be passed was in Georgia in April 2006; Georgia was also the last state to pass an omnibus immigrant law in 2013 (i.e., no state-level omnibus immigrant law has been passed

[3] Alabama (passed in 2011 and 2012), Arizona (passed in 2007 and 2010), Colorado (passed in 2006), Georgia (passed in 2006, 2009, 2011, and 2013), Indiana (passed in 2011), Missouri (passed in 2008 and 2009), Nebraska (passed in 2009), Oklahoma (passed in 2007), South Carolina (passed in 2008 and 2011), and Utah (passed in 2008 and 2011).

since 2013) (Allen, 2016). Further, during this timeframe, at least 21 other states proposed omnibus immigrant legislation that ultimately did not pass (although information on omnibus immigrant laws that failed to move past the state legislatures is more limited) (National Conference of State Legislatures, 2020).

Figure 2.1. States with One or More Omnibus Immigrant Laws, 2006-2013



Omnibus immigrant laws are typically drafted and passed with the explicit desire to drive undocumented (as well as documented) immigrants out of the state and deter the settlement of new immigrant arrivals. For example, text within Arizona's SB 1070 states that "the intent of the act is to make attrition through enforcement the public policy of all state and local government agencies in Arizona" (Senate Bill 1070. Support Our Local Law Enforcement and Safe Neighborhoods Act, 2010). The laws encourage this "attrition through enforcement" by

including provisions which severely regulate immigrants' daily life across multiple domains, such as law enforcement, employment, education, and healthcare. In this way, and although other single-issue, state-level immigrant policies exist across all states, omnibus immigrant laws are considered unique and draw more concern from researchers, policymakers, civil rights advocates, and other community organizations because of the way they can singlehandedly create comprehensive immigration policy regimes (Allen, 2016). As a result, these policies were more likely than other immigrant-related policies to be the focus of widespread media attention (Allen, 2016; Matos, 2017).

State-level Factors Associated with the Passage of Omnibus Immigrant Laws

Evidence suggests that omnibus immigrant laws are drafted and passed in reaction to a rapid growth in the population of racialized (non-White) immigrants, and the perceived costs associated with such demographic shifts to state and local governments in places that historically had few immigrants (Hopkins, 2010). One study found that increases in a state's Latino population, specifically, led to a greater number of state-level restrictive immigrant laws being passed between 2005 and 2012 (Ybarra et al., 2016). While the US as a whole experienced rapid growth in the foreign-born population between 1990 and 2014 (with a roughly 214% change), the 10 states that passed omnibus immigrant laws experienced growths in this population ranging from approximately 270% to 574% during the same timeframe (Allen, 2016). Economic conditions (e.g., unemployment rates, median household income, and poverty rates) are also sometimes found to predict policy passage (Facchini & Steinhardt, 2011; Ybarra et al., 2016). These factors may have been particularly salient during and immediately following the Great Recession when state economic stressors were high (Ybarra et al., 2016). Other factors that are found to be associated with the passage of state-level restrictive immigrant policies include

partisanship of the state legislatures (e.g., Democratic versus Republican controlled) and the percentage of Republican voters in the state (Ramakrishnan & Wong, 2010; S. P. Wallace et al., 2018).

Provisions in Omnibus Immigrant Laws

While the exact measures included in omnibus immigrant laws differ, they often share common provisions that expand local enforcement of federal immigration law by requiring officers to verify legal status during lawful stops and/or requiring legal status be verified for any person booked into jail; create penalties for employers who hire undocumented workers; mandate use of E-Verify[4] by employers to confirm worker eligibility; restrict immigrants' access to public benefits; prohibit undocumented students from attending public universities and/or accessing financial aid; and restrict access to identification cards and driver's licenses (Allen & McNeely, 2017). An overview of common provisions across omnibus immigrant laws and the number of states with the provision in at least one of their omnibus laws, as identified by Allen and McNeely (2017), are presented in **Table 2.1**.

Table 2.1. Common provisions across omnibus immigrant laws passed between 2005-2013 (Adapted from Allen & McNeely, 2017)

Domain	**Provision**	**Number of states where provision is included in ≥ 1 omnibus immigrant law (N=10)[1]**
Enforcement	Prohibits sanctuary policies	9
	Requires law enforcement to verify the legal status of all persons booked into jail	8

[4] E-Verify was developed by US Citizenship and Immigration Services, an agency of the Department of Homeland Security, and is an online system whereby employers submit information from an employee's Form I-9 that is then linked to federal records to verify an individual's identity and eligibility to work in the US. E-Verify is a voluntary program, although the federal government does require that employers verify an individual's eligibility to work in the US via use of the Form I-9 (US Citizenship and Immigration Services, n.d.).

Domain	Provision	Number of states where provision is included in ≥ 1 omnibus immigrant law (N=10)[1]
	Creates criminal penalties for transporting, harboring, concealing, or shielding an undocumented immigrant	7
	Authorizes law enforcement to verify the legal status of all persons involved in a legal stop	5
	Requires the state to seek a 287(g) agreement with ICE	5
	Allows law enforcement to make an arrest without a warrant when there is suspicion the person is an immigrant who has committed a crime	3
	Creates criminal penalties for being present in a state without documented status	3
Employment	Requires employers to use E-Verify	9
	Creates civil or criminal penalties for making or using false documents	6
	Creates criminal penalties for applying for work if not legally present in the state	2
	Other employment restrictions	10
Public benefits, education, and licenses	Requires agencies to verify the legal status of all applicants for public benefits	10
	Limits access to identification documents, such as driver's licenses	5
	Limits access to postsecondary education	5

[1]States that have passed at least one omnibus immigrant law include: Alabama, Arizona, Colorado, Georgia, Indiana, Missouri, Nebraska, Oklahoma, South Carolina, and Utah.
Source: Allen, C. D., & McNeely, C. A. (2017). Do restrictive omnibus immigration laws reduce enrollment in public health insurance by Latino citizen children? A comparative interrupted time series study. Social Science & Medicine, 191, 19–29.

Of note, many of these provisions serve to dedicate state resources to the local enforcement of federal immigration law and/or replicate what already exists in federal immigration law. For example, federal law already requires verification of immigration status when applying for federally funded public benefits (Koralek et al., 2009). However, some of the provisions included in these laws expand upon federal law by, for example, prohibiting

undocumented students from attending public universities and/or receiving scholarships and financial assistance or creating criminal penalties for being in the country while undocumented (Allen, 2016). Additional information on each omnibus immigrant law passed can be found in **Appendix A** and **Appendix B**.

Court Challenges and Implementation

Omnibus immigrant laws were often challenged in court. In seven of the 10 states,[5] lawsuits blocked portions of the omnibus immigrant laws from ever being implemented in full, such as provisions related to creating criminal penalties for being in a state while undocumented or for transporting, moving, concealing, harboring, or shielding undocumented immigrants (Allen, 2016). Most commonly, these provisions were overturned on preemptive grounds. That is, courts deemed these provisions to be state's attempts at regulating immigration, an area of law preempted by the federal government under the Supremacy Clause of the US Constitution. However, despite these court challenges, none of the omnibus immigrant laws were ever overturned in full. Most notably, perhaps, was the US Supreme Court's decision to strike down nearly all of Arizona's SB 1070 with the exception of the so-called "show me your papers" provision, which allowed law enforcement officers to seek proof of documentation status from any individual *suspected* of being undocumented (National Conference of State Legislatures, 2012). Critics of the provision say that it openly permitted law enforcement to participate in legally-sanctioned racial and ethnic profiling (Viruell-Fuentes et al., 2012).

Unfortunately, there is little data on how, and to what extent, omnibus provisions were ever implemented across the various states. A lack of funding and desire among those tasked with enforcing provisions, along with community-related challenges (e.g., concerns regarding the

[5]Alabama, Arizona, Georgia, Indiana, Oklahoma, South Carolina, and Utah each had portions of omnibus immigrant laws permanently enjoined by court order following lawsuits (Allen, 2016).

erosion of trust between law enforcement agencies and immigrant communities), are said to have led to slow and sometimes incomplete implementation (Allen, 2016; Pham, 2008). Even after the Supreme Court ruling, execution of the "show me your papers" provision in SB 1070 is reported to have been limited (Trevizo & Brosseau, 2014). Nonetheless, despite most omnibus immigrant laws having never been implemented in full, evidence suggests that the very *passage* of such laws (versus their implementation) had immediate and far-reaching impacts, particularly for Latino communities. This included effects on both in- and out-migration and residential selection (Amuedo-Dorantes & Pozo, 2014; Good, 2013; Raphael & Ronconi, 2009), labor force participation (Raphael & Ronconi, 2009), the reporting of crimes (Gonzalez, 2011), and school enrollment and attendance (CNN, 2012; Perez, 2012). Further, an examination of Google search trends of the terms "SB1070," "*ilegal*" (illegal), and "*derechos*" (rights), as well as newspaper mentions of "SB1070," in Arizona between April 2009 through December 2014 revealed large spikes in all of these terms across both mediums immediately after the law's passage in April 2010 through about July 2010 when it was partially enjoined by court order (Torche & Sirois, 2019). This study also examined trends in fingerprint submissions to federal authorities and deportations and removal proceedings in Arizona from January 2010 and January 2014 and found no evidence that the passage of SB 1070 resulted in a change in the detention or deportation of undocumented immigrants in the state (Torche & Sirois, 2019). This suggests that awareness and concern of the omnibus immigrant law was likely widespread enough to act as an important stressor in the lives of Latinos and result in important repercussions, despite its potentially limited implementation.

Health Impacts of Omnibus Immigrant Laws

State-level immigrant policies are argued to be important social determinants of health among Latinos in the US (Philbin et al., 2018). This is theorized to occur via a combination of stress produced from structural racism and differential access to beneficial social institutions, health-related services, and health-promoting material goods and conditions (Philbin et al., 2018). Prior research demonstrates the detrimental impacts of omnibus immigrant laws on health-related outcomes, with most of the work focused on healthcare access and utilization among Latinos compared to members of other racial/ethnic groups.

Impacts on Healthcare Utilization

Several studies highlight the negative effects of omnibus immigrant laws on utilization of healthcare services among Latino adults and children, regardless of nativity or immigration status. For example, Latino children were found to present less frequently to the emergency department and to present with more serious illness following the passage of Georgia's House Bill (HB) 87 in 2011 than compared to previous years (Beniflah et al., 2013). Another study conducted among Mexican-origin adolescent women found significant reductions in the receipt of public assistance and utilization of preventative health services for their newborns, regardless of nativity status, following the passage of Arizona's SB 1070 (Toomey et al., 2014). White and colleagues found that the use of county public health services significantly decreased among Latino adults following passage of the state's first omnibus immigrant law, HB 56, in 2011; no differences in visitations were observed among non-Latino adults (White, Blackburn, et al., 2014).

In a qualitative study, Latina immigrants also described the effects of Alabama's HB 56 on reducing the availability, accessibility, and affordability of healthcare for themselves and their

US- and foreign-born children stemming from both a real and *perceived* lack of eligibility, economic insecurity, increased discrimination, and a fear of driving (White, Yeager, et al., 2014). These effects were partially the result of the law's provisions that directly targeted some immigrants' eligibility for public benefits and employment, as well as those related to immigration enforcement. However, the authors postulate that their findings reflect a general increase in anti-immigrant sentiment and culture of fear among Latino immigrants generated from the law's passage (White, Yeager, et al., 2014).

While these studies provide preliminary evidence of omnibus immigrant laws decreasing healthcare utilization among Latinos, there are notable limitations, including the lack of comparison groups, the use of nonrepresentative samples that limit the generalizability of findings, and no investigation of how these effects change over time. All the studies also focus on the effects of a single omnibus law within a specific state or local community. A notable exception is a study by Allen and McNeely that used nationally representative data to assess if the passage of omnibus immigrant laws reduced US-citizen Latino children's access to Medicaid and Children's Health Insurance Program (CHIP) (Allen & McNeely, 2017). Counter to the authors' hypotheses, they found increased coverage among Latino children with at least one citizen parent immediately following law passage (with effects dissipating over time), while no changes were detected among children with noncitizen parents (Allen & McNeely, 2017). It is possible that community-based organizations and immigrant rights groups were able to mobilize to counteract any potential negative effects of the laws on Medicaid/CHIP coverage by increasing awareness around eligibility requirements and assisting parents in enrolling their children in public benefits (Allen & McNeely, 2017). However, in a follow-up analysis among Latino children with noncitizen parents, Allen (2018) finds moderation by Latino population

density at the county-level; Latino citizen children with noncitizen parents living in counties with higher Latino population density were at significantly higher risk of losing Medicaid/CHIP when their states passed restrictive omnibus immigrant laws . Latino families living in areas of high Latino population density may be more likely to encounter local immigration enforcement and experience anti-immigrant and anti-Latino discrimination which can have important implications for healthcare access (Allen, 2018). More research is needed that investigates how omnibus immigrant laws may impact indicators of healthcare utilization among Latinos using population-based data.

Impacts on Psychosocial Well-being

Although limited, previous research also highlights the potential impacts of omnibus immigrant laws on psychosocial well-being. For example, Santos and colleagues (Santos et al., 2013) found that awareness of Arizona's SB 1070 was associated with increased perception of ethnic discrimination and decreased self-esteem among a racially/ethnically diverse youth population. Several qualitative studies have also highlighted the increased vigilance, fear, and distress experienced among Latinos following the passage of omnibus immigrant laws in their state (Ayón & Becerra, 2013; Koralek et al., 2009; Szkupinski Quiroga et al., 2014). An erosion of psychosocial well-being can lead to worsening physical and mental health. Passage of Arizona's SB 1070 was associated with decreased self-rated health status among Spanish-speaking Latinos in Arizona (Anderson & Finch, 2014). However, very few studies exist that examine the impacts of omnibus immigrant laws on specific health outcomes. One exception includes a study on the effects of Arizona's SB 1070 on low birth weight among infants born to Latina women in Arizona compared to those of a synthetic cohort (Torche & Sirois, 2019). The authors find that exposure to the law's passage resulted in significantly lower birth weight among

foreign-born Latina women but not among US-born Latina, White, or Black women (Torche & Sirois, 2019). Unfortunately, this study did not include an examination of the effects on preterm birth or prenatal care utilization. Additional research on the effects of omnibus immigrant laws on specific health outcomes are needed.

Summary and Situation of the Dissertation Study

Birth outcomes like preterm birth and low birth weight are an important cause of infant morbidity and mortality (Singh & Yu, 2019) and commonly used as an indicator of overall population health and well-being. Research has documented an increased risk of adverse birth outcomes among both US- and foreign-born Latina women compared to White women. Importantly, these disparities remained even after accounting for differences in individual-level characteristics. Researchers posit that sociopolitical factors, such as state-level immigrant policies, may be an important contributor to health disparities among Latinos (Philbin et al., 2018). Consequently, there have been calls for more research that evaluates the health-related effects of state-level immigrant policies (Hardy et al., 2012).

While this line of inquiry has gained increased attention in recent years, most of the research has focused on various measures of healthcare utilization. Few studies to date have investigated the effects of omnibus immigrant policies on specific population health outcomes such as birth outcomes. Omnibus immigrant laws are considered the harshest of state-level restrictive immigrant legislation and received considerable media attention. As a result, they are perhaps the most likely to impact immigrant populations and to have potential spillover effects to US-born co-ethnic citizens.

Existing literature on the effects of restrictive state-level immigrant policy climates and immigration enforcement activities provide preliminary evidence that restrictive state-level

immigrant policies can contribute to an increased risk of adverse birth outcomes among Latina women. These studies have primarily suggested differential access to health-related services (e.g., prenatal care) and increased maternal stress as the primary mechanisms of this relationship.

Despite this preliminary evidence, this review revealed important gaps that require further attention. First, studies conducted to date on the effects of restrictive state-level immigrant policies focus on a single state or local community, a specific omnibus immigrant law without consideration of previous omnibus immigrant laws passed within the state, and/or a discrete event (e.g., an immigration raid). No study has evaluated the average effects of all omnibus immigrant legislation across the US states on specific health outcomes or prenatal care utilization.

Questions also remain regarding the potential spillover effects of state-level immigrant laws on birth outcomes among US-born Latina women. Relatedly, to my knowledge, no studies exist that examine how the effects of restrictive immigrant policies among Latina women differ across national origin subgroups. Such an analysis can increase understanding about how the effects of restrictive state-level immigrant laws may disproportionately affect members of certain origin groups influenced by, for example, differences in socioeconomic status and histories of migration and contexts of reception. Finally, researchers posit that stark differences in the timing and frequency of prenatal care utilization may partially explain persistent racial and ethnic inequities in birth outcomes.

CHAPTER 3. THEORETICAL FRAMEWORK

The social ecological model (Sallis & Neville, 2015) and a framework for understanding state-level immigrant policies as significant drivers of Latino health disparities in the US developed by Philbin et al. (2018) provide the theoretical underpinning for this dissertation research. I begin this chapter with a brief description of the social ecological model and its relationship to this study. I then introduce the framework proposed by Philbin and colleagues for understanding the mechanisms by which state-level immigrant-related policies may influence health disparities among Latinos in the US. Within this section, I detail how omnibus immigrant laws may influence birth outcomes among Latinos via stress produced from structural racism and differential access to healthcare services (i.e., prenatal care utilization), beneficial social institutions (e.g., education), and material conditions (e.g., income).

The Social Ecological Model

The social ecological model asserts that health behaviors and outcomes are affected by factors spanning multiple levels of influence, including factors at the intrapersonal, interpersonal, organizational, community, and public policy levels (Sallis & Neville, 2015). The incorporation of environmental factors (i.e., factors spanning the policy, organizational, and community levels) distinguishes the social ecological model from other theories of health behavior that emphasize individual characteristics without explicit recognition of the role of the social environment in shaping health (Sallis & Neville, 2015). While the social ecological model has historically been used to guide the development of comprehensive interventions for targeting specific health behaviors, it is also a useful tool for researchers who wish to understand how *modifiable* factors across different levels of the social environment influence health outcomes.

As described in the previous chapter, several studies find evidence that Latina women are less likely to utilize prenatal care and more likely to experience poor birth outcomes than White women, even after accounting for various individual-level characteristics. Use of the social ecological model provides a framework for understanding how factors at the public policy level may drive or exacerbate existing health disparities. This is important, particularly in the context of immigrant health and Latino health disparities, as it shifts research away from cultural explanations (implicitly defined as individual-level traits, attitudes, and behaviors) of health behaviors and outcomes toward examinations of structural drivers (Viruell-Fuentes et al., 2012). Given their proliferation since the mid-2000's, researchers believe state-level immigrant policies to be a particularly relevant structural driver of Latino health disparities even though not all Latinos are immigrants and not all immigrants are undocumented (Philbin et al., 2018; Viruell-Fuentes et al., 2012). However, evidence suggests that the negative effects of exclusionary immigrant policies extend beyond the stated target of the laws (namely, undocumented immigrants) to harm documented immigrants and US-born citizen co-ethnics.

Immigrant-related Policies as Drivers of Latino Health Disparities

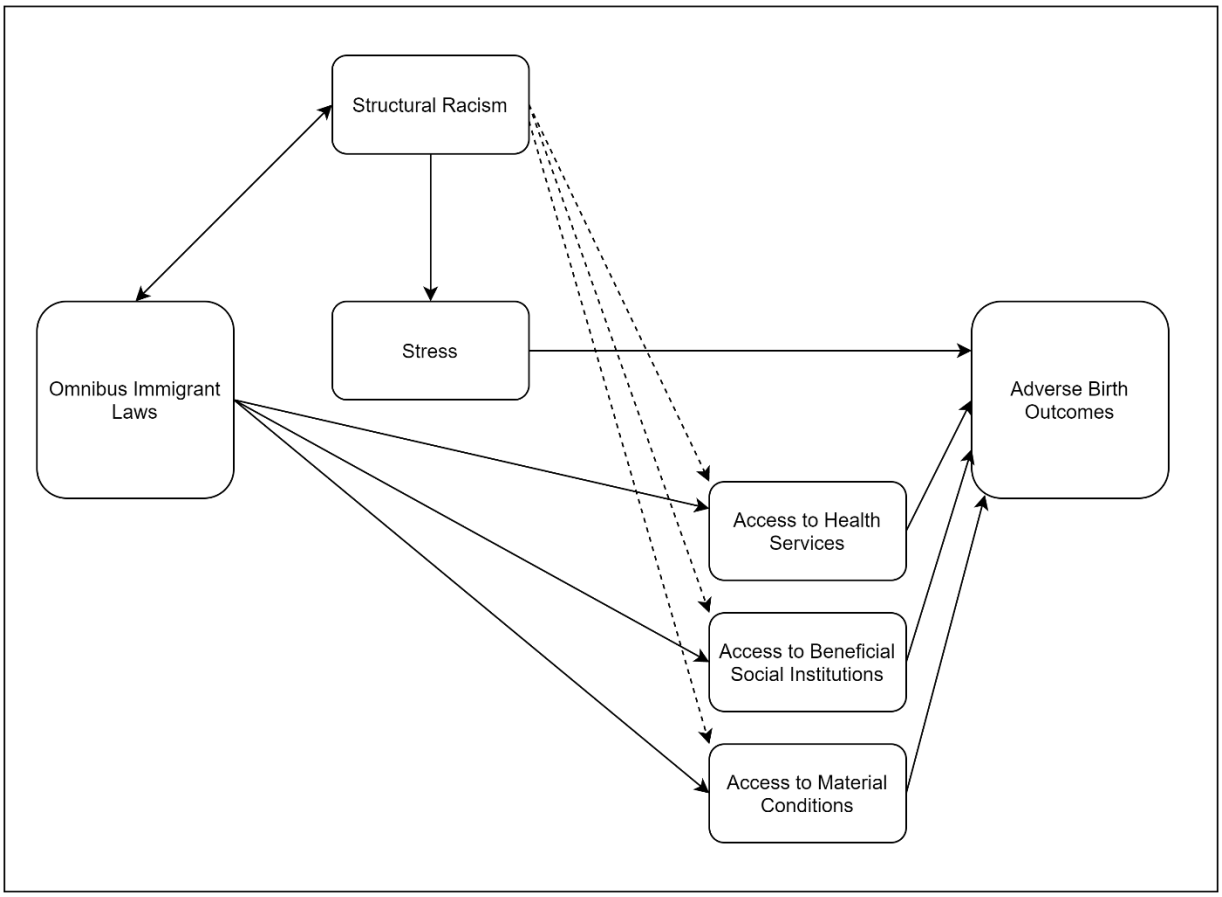
Philbin and colleagues provide a conceptual model for how state-level immigrant policies may contribute to Latino health outcomes and disparities in the US (Philbin et al., 2018). Specifically, the authors argue that state-level immigrant policies can impact Latino health outcomes through any combination of four pathways. First, state-level immigrant policies are recognized as having both *instrumental* and *symbolic* effects, communicating the extent to which immigrants are welcomed and deserving of resources (Philbin et al., 2018). In combination with the rhetoric and media attention that often accompanies them, restrictive state-level immigrant policies help entrench social constructions of racialized legal status whereby race/ethnicity is

conflated with immigration and documentation status. In this way, state-level immigrant policies act as a form of structural racism, creating a hostile environment that can contribute to ill health through stress and experiences of discrimination among anyone who may be perceived to be an immigrant and/or undocumented (Gee & Ford, 2011). Second, policies can limit access to beneficial social institutions, including secondary and post-secondary education, one of the strongest predictors of future health and well-being (Link & Phelan, 1995). Third, state-level immigrant policies can further regulate immigrants' access to healthcare with obvious impacts to health outcomes should, for example, needed care be delayed or avoided altogether. Finally, policies can influence health outcomes by creating inequities in the distribution of material goods among immigrants and their families by limiting access to the labor market, housing, and other public benefits programs (Philbin et al., 2018). Of note, the authors argue for the need to disaggregate analyses on the effects of state-level immigrant policies on Latinos by national origin given their distinct histories of settlement and varying contexts of reception (Philbin et al., 2018). Doing so would allow researchers to evaluate if certain groups of Latinos are disproportionately impacted by immigrant policies, and if so, via what potential mechanisms.

The authors posit that omnibus immigrant laws impact the health status of Latinos through all four pathways because they typically encourage local and state law enforcement agencies to enforce federal immigration law (Philbin et al., 2018). Still, other provisions typically included within omnibus immigrant laws targeting employment, education, and/or driver's license eligibility, for example, may also contribute to adverse health outcomes among Latinos via one or more of the proposed pathways. Previous studies highlight maternal stress and reduced access and utilization of prenatal care as critical mechanisms by which state-level immigrant laws influence birth outcomes among Latina women (Rhodes et al., 2015; Ro et al.,

2020; Torche & Sirois, 2019). Thus, informed by Philbin and colleagues' model and existing literature, I focus on stress produced via structural racism and decreased access to healthcare services, beneficial social institutions, and material conditions at the primary pathways by which omnibus immigrant laws may increase the risk of preterm birth and low birth weight among Latina women (**Figure 3.1**). The following sub-sections will describe these pathways in more detail.

Figure 3.1. Primary Mechanisms for how State-level Omnibus Immigrant Laws May Influence Adverse Birth Outcomes among Latina Women in the US (Adapted from Philbin et al. 2018)



Stress Produced by Structural Racism

The first pathway by which omnibus immigrant laws may influence adverse birth outcomes among Latina women is via stress produced by structural racism. Exclusionary immigrant policies, including the internal enforcement of federal immigration law via increased police/ICE cooperation, are considered an important form of structural racism (Armenta, 2017; Gee & Ford, 2011; Viruell-Fuentes et al., 2012). Gee and Ford define structural racism as "the social forces, institutions, ideologies, and processes that interact with one another to generate and reinforce inequities among racial and ethnic groups" (Gee & Ford, 2011). Structural racism is intended to emphasize the role of racism embedded within social, political, economic, and legal structures versus a conceptualization of racism as occurring solely at the interpersonal level (e.g., exchanges of prejudice and discrimination). Implicit in this conceptualization is the recognition that the eradication of interpersonal racism alone is not sufficient for reducing racial inequities because racist ideologies and processes baked into social and political structures would remain intact.

Throughout US history, immigration policy has served to reproduce ideologies and processes that define notions of national belonging and deservingness along racial, gendered, and ethnic lines (Gee & Ford, 2011; T. Golash-Boza & Hondagneu-Sotelo, 2013). For example, the 1790 Naturalization Act was one of the earliest policies to outline citizenship rules and barred any person who was non-White from gaining citizenship (Gee & Ford, 2011). The Bracero Program, a guest-worker program implemented from 1942 through 1964, actively recruited immigrant men from Asia and Mexico to fill critical labor gaps in the US west, while immigrant women from the same regions were admitted in only limited numbers (T. Golash-Boza & Hondagneu-Sotelo, 2013). In the 1980s and 90s, the federal government instituted several

policies that granted Cuban nationals refugee status and/or permanent resident status, amounting to a context of reception vastly more welcoming for Cubans than for immigrants of any other national origin. Furthermore, as described earlier, the present-day immigration enforcement regime, characterized by local and state cooperation with federal immigration authorities, constitutes a gendered racial removal project with police surveillance historically targeting Latin American (immigrant) communities broadly and Latino men specifically. Male working class Latinos (especially those from Mexico and Central America) account for the vast majority of those detained and deported through ICE since the late 1990's (T. Golash-Boza & Hondagneu-Sotelo, 2013).

State-level omnibus immigrant laws of the current era that increase internal immigration enforcement and restrict immigrants' rights and access to beneficial social institutions under the pretense of protecting communities from "criminal aliens" continue the practice of reinforcing ideologies that define national belonging along racial, gendered, and ethnic lines. Omnibus immigrant policies as written do not target specific immigrant groups along racial or ethnic lines, and thus, may appear to be "race neutral" or "colorblind"; however, accompanying political rhetoric and media messaging around immigration and immigrant laws was often marked by negative portrayals of illegal immigrants from Mexico and Central America and an "immigration crisis" at the US-Mexico border. This contributes to the racialization of a whole group of people, creating a hostile environment for anyone who may be perceived to be an immigrant and/or undocumented based on skin color, language, or any other characteristics that people use to conflate ethnicity and immigration or documentation status (Gee & Ford, 2011; Viruell-Fuentes et al., 2012).

In turn, as argued by Gee and Ford, the hostile, anti-immigrant climate produced via exclusionary immigrant laws contributes to experiences of stress that harms health even among those who are not the intended targets (i.e., undocumented immigrants) (Gee & Ford, 2011). As discussed in the previous chapter, maternal stress is an independent risk factor for both preterm birth and low birthweight. There is ample evidence that omnibus immigrant laws contributed to widespread psychological fear and distress among Latinos, usually related to the threat of being surveilled, detained, and deported (regardless of nativity or documentation status) (Ayón & Becerra, 2013; Kline, 2017; Koralek et al., 2009; Nichols et al., 2018; Szkupinski Quiroga et al., 2014). A racialized and gendered deportation regime in the US means that expectant Latina women, both those who are undocumented and those embedded in mixed-status families and communities, are vulnerable to the economic and psychological implications of deportation (T. Golash-Boza & Hondagneu-Sotelo, 2013). For example, one study found that family income decreased by roughly 70% within the first six months of a parent being deported (Migration Policy Institute, 2015). About 66% of Latino immigrants and 43% of US-born Latinos worry that they, a family member, or someone else they know will be deported (Lopez et al., 2018). There is also evidence that self-reported mental health is poorer among Latinos who fear they or someone they care about will be deported (Nichols et al., 2018). Further, one survey found that both foreign- and US-born Latinos who perceived living in states with more exclusionary immigrant policies had a higher likelihood of reporting poor physical and mental health outcomes (Vargas et al., 2017). For expectant Latina women, the fear and stress of deportation may also foster other behavioral changes that increase their risk of adverse birth outcomes (e.g., substance use, decreased physical activity, or dietary changes).

Additionally, stress may stem from increased experiences of perceived or anticipated discrimination following the passage of exclusionary immigrant policies. One study found that living in states with more anti-immigrant policies, compared to living in a state with fewer anti-immigrant policies, was associated with higher levels of perceived discrimination among both foreign- and US-born Latinos (Almeida et al., 2016). This association was also found to be significantly moderated by national origin, whereby having more anti-immigrant policies was associated with increased perceived discrimination among Mexicans and Cubans, but not Puerto Ricans (Almeida et al., 2016). Latinos have described increased discrimination from law enforcement officers, employers, and in other day-to-day interactions following passage of omnibus immigrant laws in their state (Koralek et al., 2009; White, Yeager, et al., 2014). Discrimination among Latinos can also occur within the healthcare system; for instance, patients reported healthcare workers questioning one's documentation status and refusing to accept legitimate documents proving legal presence in the country. (White, Yeager, et al., 2014) Perceived discrimination has been linked to chronic stress and poorer mental and physical health outcomes among Latinos in the US (Araújo & Borrell, 2006; E. Flores et al., 2008; Torres et al., 2012).

In summary, Latina expectant women may experience increased stress following passage of omnibus immigrant laws that foster a hostile, anti-immigrant climate that, in turn, produces a "culture of fear" related to possible detection and deportation and increased discrimination during everyday interactions. Increased maternal stress then increases the risk of preterm birth and low birth weight by disrupting critical endocrine, immune, and other biological systems and processes involved in fetal development (Louis & Platt, 2011).

Access to Health Services

As suggested by **Figure 3.1**, omnibus immigrant laws are also theorized to negatively affect birth outcomes among Latina women by reducing access and utilization of healthcare services, namely prenatal care. Early initiation and adequate utilization of prenatal care is a critical determinant of positive birth outcomes (Louis & Platt, 2011). Although the effects of omnibus immigrant laws on prenatal care utilization, specifically, has yet to be evaluated, one study found that implementation of local-level policies in North Carolina to increase the enforcement of federal immigration law led Latina women to seek prenatal care later and receive poorer-quality care than non-Latina women in the state (Rhodes et al., 2015). There is also growing evidence that omnibus immigrant laws reduce access and utilization of other types of healthcare services among Latinos, regardless of nativity status (Allen, 2018; Beniflah et al., 2013; Toomey et al., 2014; White, Blackburn, et al., 2014; White, Yeager, et al., 2014).

Importantly, undocumented immigrants are already barred from accessing federal health insurance programs, including Medicaid, Medicare, and CHIP, except under certain circumstances (e.g., Emergency Medicaid coverage) (Gusmano, 2012). For undocumented women who meet other eligibility requirements (e.g., income), labor and delivery care are covered by Emergency Medicaid, but prenatal and postnatal care are not. In recognizing the vital role that prenatal care plays in ensuring the health of both mother and baby, 18 states and the District of Columbia have adopted policies that extend medical coverage for pregnancy- and delivery-related care to women regardless of immigration or documentation status (Wherry et al., 2017).[6] However, even where/when services are made available, undocumented immigrants may

[6] This includes Missouri, Nebraska, and Oklahoma, three states that implemented omnibus immigrant legislation between 2006 and 2013. Missouri adopted the CHIP unborn child option in 2015 for dates of service on or after January 1, 2016 which is outside of the study period of the current study. Nebraska provided state-funded coverage to pregnant undocumented immigrant women from 1997-2010 and then adopted the CHIP unborn child option in

be hesitant to access emergency care due to deportation fears or anticipated discrimination from healthcare workers (Martinez et al., 2015). Moreover, documented immigrants may be subject to a five-year waiting period before they are eligible for federally funded benefits (Gusmano, 2012); although, as of January 2020, 25 states have adopted legislation that eliminates this five-year waiting period to provide public health coverage to legally present immigrant women who are pregnant who otherwise meet eligibility requirements for Medicaid/CHIP (Brooks et al., 2020)[7] and certain groups are exempt from the waiting period regardless of their duration in the US (such as veterans and refugees). Notably, while Puerto Ricans born on the island are considered foreign-born for this study, their US citizenship provides them with the same access to healthcare benefits as individuals born within the 50 US states and creating a markedly different healthcare landscape than compared to other foreign-born individuals. Even so, like their undocumented peers, documented immigrants may be hesitant to access public benefits even when they are eligible due to concerns about being designated a "public charge" or confusion around their eligibility, especially considering state-level variability in eligibility rules for Medicaid/CHIP coverage for pregnant immigrant women.

There are several ways by which omnibus immigrant laws may plausibly influence utilization of prenatal care among expectant Latina women. Omnibus immigrant laws that include provisions which reinforce federal regulations around immigrants' eligibility for public benefits and/or require state health employees report suspected undocumented immigrants to immigration enforcement authorities can compound difficulties already experienced by

2012, while Oklahoma provided coverage to pregnant undocumented immigrant women through the CHIP unborn child option beginning in 2009. See Wherry et al. 2017 for more information, including years of implementation for various public insurance policies affecting immigrant women who are pregnant.

[7] This includes Colorado, Nebraska, and South Carolina, three states that implemented omnibus immigrant legislation between 2006 and 2013.

immigrants in accessing healthcare. There is evidence that such provisions created confusion among healthcare workers and patients about what documentation is required to prove documented status in the US and who is eligible for benefits. One study found that Alabama's HB 56 resulted in many documented immigrants falsely believing that they were ineligible for healthcare, as well as healthcare workers rejecting eligible patients from receiving healthcare (White, Yeager, et al., 2014). Furthermore, any policy that requires reporting based on "suspected" documentation status invites racial profiling that can result in fear, stress, and experiences of discrimination among all Latinos who can be profiled as undocumented while attempting to navigate the healthcare system.

Provisions related to increased immigration enforcement and restricted access to driver's licenses can also have implications for healthcare access among Latinos. The fear of being stopped and questioned by law enforcement officials can deter Latino immigrants, even those with valid driver's licenses, from driving unless absolutely necessary (Hardy et al., 2012; Rhodes et al., 2015). In one study, immigrants in Georgia reported delaying or avoiding healthcare services altogether because the act of driving to a health center put them at risk of being stopped, arrested, and deported (Kline, 2017). The fear of encountering immigration enforcement and subsequent deportation can also shape other elements of healthcare seeking behaviors among Latino immigrants. Evidence suggests that some immigrants will choose to access care only during daylight hours when police presence in the community is perceived to be lower (Kline, 2017). In addition, immigrants may choose to access care outside of the formal healthcare sector (e.g., from "Latino clinics," informal providers, traditional healers or *hueseros, botánicas,* and *farmacias*) where the risk of deportation is perceived to be lower (Kline, 2017). Regardless of documentation status, Latinos who are, for example, uninsured or Spanish-only speakers may

also choose to access care from these informal providers to the extent that they are perceived as being more affordable, accessible, and acceptable. These so-called "parallel medical systems" may become even more critical for Latinos in contexts where anti-immigrant policies are prolific (Kline, 2017).

In addition, as described in the previous section, evidence suggests that Latinos experience increased discrimination from healthcare workers following passage of omnibus immigrant laws (White, Yeager, et al., 2014). Experiences of perceived or anticipated discrimination can deter future engagement in the healthcare system. Finally, provisions that bar undocumented immigrants from employment opportunities can have important consequences for the financial health of undocumented individuals and those living in mixed-status families that further reduces the affordability of healthcare (Philbin et al., 2018).

Access to Beneficial Social Institutions and Material Conditions

Omnibus immigrant laws may also influence birth outcomes by limiting access to beneficial social institutions (such as education, employment, or other social programs) and the material conditions of life necessary for optimal health and well-being, such as income, safe housing, and food. Several omnibus immigrant laws include provisions that limit access to post-secondary education by, for example, excluding undocumented individuals from receiving financial aid or in-state tuition or barring them from being admitted to public universities altogether. The inability to attend higher education can have a detrimental impact on future employment and earning potential with downstream impacts on one's access to material goods. Moreover, employment-related provisions that require employers use E-Verify and/or create criminal penalties for applying for employment without documented status or for hiring undocumented immigrants systematically exclude certain classes of immigrants from the labor

market and economy (Philbin et al., 2018). Like education, restricting access to employment can have obvious impacts on an individuals' or families' access to material conditions. Previous studies have documented an association between underemployment and greater housing (Bentley et al., 2019) and food insecurity (Huang et al., 2016). Furthermore, education and employment are both critical indicators of socioeconomic status and among the strongest determinants of future health (Link & Phelan, 1995). Women with lower socioeconomic status consistently have poorer birth outcomes and lower prenatal care utilization than women with higher socioeconomic status (Campbell & Seabrook, 2016). Importantly, prior research also demonstrates an association between housing and food insecurity and adverse birth outcomes (Grilo et al., 2015; Leifheit et al., 2020). While provisions that limit access to beneficial social institutions and material conditions are likely to have the most extreme impacts for undocumented immigrants, they can also contribute to general feelings of exclusion among all Latinos, regardless of nativity or documentation status, and contribute to adverse health outcomes through the stress produced via structural racism pathway as described earlier (Philbin et al., 2018).

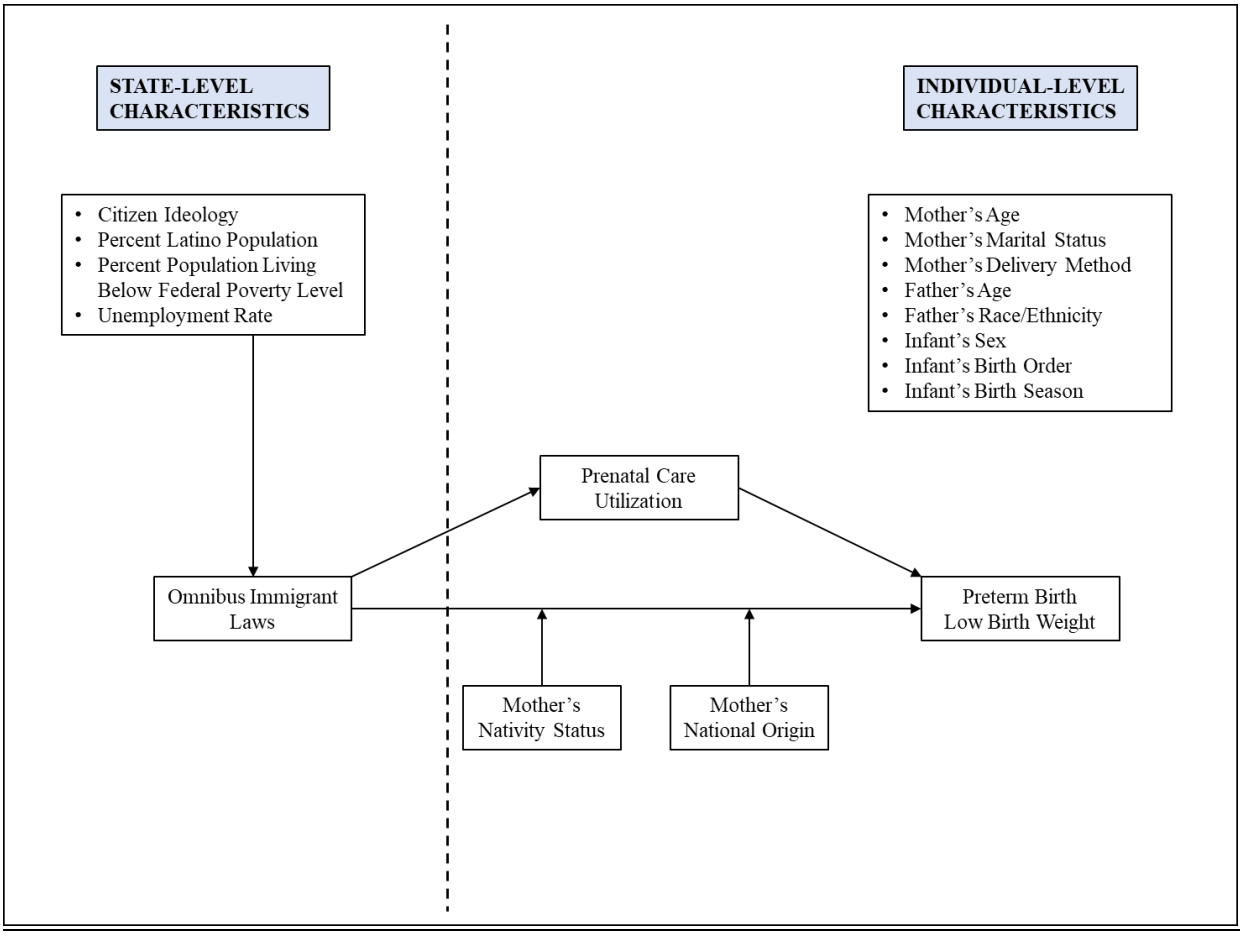
Immigrants' access to social institutions and material conditions may also be restricted via provisions that prohibit undocumented immigrants from obtaining a driver's license. Being able to legally drive by obtaining a valid driver's license is critical for social and physical mobility; for undocumented immigrants without a driver's license, accessing work, safe housing, school, physical activity, grocery stores, or other institutions and social programs can be dangerous and challenging or even impossible. This may be especially true for those living in areas without a well-developed public transportation system (Philbin et al., 2018). For example, one study found that inadequate access to transportation, including driving, was a barrier to physical activity among foreign-born Latinas (Evenson et al., 2002). Access to nutrition and food

security may also be impacted by provisions in omnibus immigrant laws that limit immigrants' access to state or local public benefit programs (e.g., Supplemental Nutrition Assistance Program [SNAP]) such as those that require an individuals' legal status be verified for all applications to state or local public benefits programs. Previous studies found that restrictive immigrant policies were associated with increased food insecurity among families with mixed documentation status (Potochnick et al., 2017) and decreased enrollment in SNAP (Winham & Armstrong Florian, 2015). Provisions like these may also cause confusion around one's eligibility for public benefits or increase fear of being labeled a public charge that deters even those who are eligible for public benefits from applying (Philbin et al., 2018).

Analytic Model of the Dissertation Study

Figure 3.2 provides a depiction of the analytic model of the current study, informed by the theoretical framework as previously described. Items to the left of the vertical dotted line represent factors of the state context, including the primary exposure variable of interest (passage of at least one omnibus immigrant law) and other state-level characteristics. Items to the right of the vertical dotted line represent factors at the individual level, including the primary outcome variables of interest (preterm birth, low birth weight, prenatal care utilization) and key moderating variables (mother's nativity status and national origin).

Figure 3.2. Analytic Model of the Dissertation Study



Aim 1 compares pre- and post-policy trends among infants born to Latina women living in states that passed omnibus immigrant legislation between 2006 and 2013 to determine the effects of omnibus immigrant laws on the odds of preterm birth and low birth weight. I then examine the extent to which these effects are moderated by nativity status, comparing foreign-born versus US-born women. In Aim 2, I compare pre- and post-policy trends to determine the effects of omnibus immigrant laws on the odds of decreased prenatal care utilization among Latina women living in states that passed omnibus immigrant legislation. Again, this aim includes an examination of potential differences across nativity status. These results will provide some insight into whether any effects seen in birth outcomes are resulting, at least in part, from decreased access and use of prenatal care services. Finally, Aim 3 assesses whether the effects of

omnibus immigrant laws on birth outcomes and prenatal care utilization examined in Aims 1 and 2 differ across mother's national origin, comparing women of Mexican, Puerto Rican, and Cuban origin or descent. It is posited that the policy context will be experienced differently for distinct subgroups of Latina women so that the effects of omnibus immigrant laws on utilization of prenatal care and the risk of preterm birth and low birth weight differ across both nativity status and national origin.

CHAPTER 4. RESEARCH AIMS, QUESTIONS, AND HYPOTHESES

This brief chapter provides an additional overview of all research questions to be addressed for each aim of the dissertation, including hypotheses determined a priori.

Aim 1 Research Questions and Hypotheses

The objective of Aim 1 was to determine the effects of passage of omnibus immigrant laws on the odds of preterm birth and low birth weight among infants born to Latina women.

Question 1. What were the effects of passage of omnibus immigrant laws on the odds of preterm birth among infants born to Latina women?

Hypothesis: Passage of omnibus immigrant laws resulted in a statistically significant increase in the odds of preterm birth among infants born to Latina women.

Question 2. What were the effects of passage of omnibus immigrant laws on the odds of low birth weight among infants born to Latina women?

Hypothesis: Passage of omnibus immigrant laws resulted in a statistically significant increase in the odds of low birth weight among infants born to Latina women.

Question 3. Are the effects of the passage of omnibus immigrant laws on preterm birth and low birth weight, respectively, moderated by mother's nativity status?

Hypothesis: The effects of passage of omnibus immigrant laws on the odds of preterm birth and low birth weight, respectively, were moderated by nativity status such that the effects were greatest for infants born to foreign-born versus US-born Latina women.

Aim 2 Research Questions and Hypotheses

The objective of Aim 2 was to determine the effects of passage of omnibus immigrant laws on the utilization of prenatal care among Latina women.

Question 1. What were the effects of passage of omnibus immigrant laws on the odds of late entry into prenatal care among Latina women?

Hypothesis: Passage of omnibus immigrant laws resulted in a statistically significant increase in the odds of late entry into prenatal care among Latina women.

Question 2. What were the effects of passage omnibus immigrant laws on the odds of inadequate prenatal care utilization among Latina women?

Hypothesis: Passage of omnibus immigrant laws resulted in a statistically significant increase in the odds of inadequate prenatal care utilization among Latina women.

Question 3. Were the effects of the passage of omnibus immigrant laws on late entry into care and inadequate prenatal care utilization, respectively, moderated by mother's nativity status?

Hypothesis: The effects of passage of omnibus immigrant laws on the odds of late entry into prenatal care and inadequate prenatal care utilization, respectively, were moderated by nativity status such that the effects were greatest for foreign-born versus US-born Latina women.

Aim 3 Research Questions and Hypotheses

The objective of Aim 3 was to assess whether the effects of omnibus immigrant laws on prenatal care utilization, preterm birth, and low birth weight differed across mother's national origin comparing women of Mexican, Puerto Rican, and Cuban descent or origin.

Question 1: Were the effects of passage of omnibus immigrant laws on late entry into prenatal care and inadequate prenatal care utilization, respectively, moderated by mother's national origin?

Hypothesis: The effects of passage of omnibus immigrant laws on the odds of late entry into prenatal care and inadequate prenatal care utilization, respectively, were moderated

by mother's national origin such that the effects were greatest for Mexican origin versus Puerto Rican or Cuban origin women.

Question 2: Were the effects of passage of omnibus immigrant laws on preterm birth and low birth weight, respectively, moderated by mother's national origin?

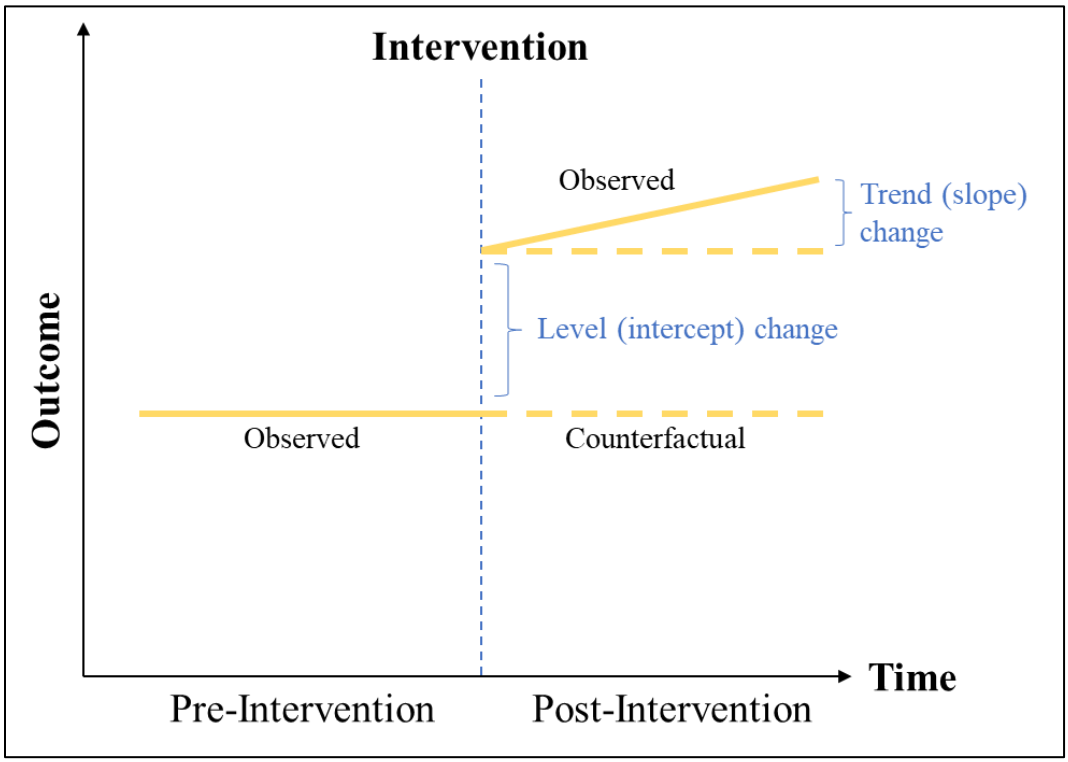
Hypothesis: The effects of passage of omnibus immigrant laws on the odds of preterm birth and low birth weight, respectively, were moderated by mother's national origin such that the effects were greatest for Mexican origin versus Puerto Rican or Cuban origin women.

CHAPTER 5. METHODS

Study Design, Sample, and Data Sources

I evaluated the effects of states' passage of omnibus immigrant laws on the odds of adverse pregnancy outcomes among Latina women living in states that passed omnibus immigrant policies using an interrupted time series (ITS) approach. An ITS design is a quasi-experimental method used to evaluate the effects of an intervention, implemented at a specified point in time, when randomization of the intervention is not practical or ethical (Taljaard et al., 2014). In an ITS study, the outcome(s) of interest are observed at multiple time points (e.g., monthly or quarterly) to observe trends in the outcomes over time from pre- to post-intervention. Using a segmented regression technique, separate intercepts and slopes are estimated for pre- and post-intervention segments; causal hypotheses are then tested by estimating the change in the intercept and/or slope from the pre- to post-intervention segments (**Figure 5.1**) (Taljaard et al., 2014). One strength of the ITS design is that it can differentiate between the effects of an intervention under study and secular trends that would have occurred even in the absence of the intervention (Taljaard et al., 2014).

Figure 5.1. Illustrative Depiction of an Interrupted Time Series Design using Segmented Regression with a Single Intervention



For this dissertation, quarterly time series for all outcomes were generated from birth certificate data obtained from the National Center for Health Statistics (NCHS). The analytic sample was drawn from all women who gave birth between 2005 and 2014 in the 50 US states and the District of Columbia (N=41,003,904). Births during this timeframe encompass the years during which omnibus immigrant laws were passed (2006-2013), allowing for sufficient time before and after policy passage to adequately assess pre- versus post-policy trends.

In addition, state-level data from multiple sources was combined with individual-level birth certificate data based on state and year of birth, including information on: omnibus immigrant laws from the National Conference of State Legislatures (NCSL); demographic and economic indicators from the US Census Bureau and the US Bureau of Labor Statistics; and

political ideology of the state citizenry as originally reported by Berry and colleagues (1998). **Table 5.1** provides a summary of measures and data sources to be used for this study at the individual and state levels. This study was determined to be exempt from requiring ethics approval from the UCLA Institutional Review Board (IRB#22-001302) as it utilizes only secondary data which are all publicly available, including birth certificate data obtained from NCHS via a data use agreement.

Table 5.1. Review of Study Measures, Descriptions, and Data Sources at the Individual and State Levels

Level	**Measure**	**Description**	**Data Source(s)**
Individual	Preterm birth	Live birth before 37 weeks gestation, yes or no	NCHS Natality Files 2005-2014
	Low birth weight	Live birth weight of less than 2500 grams, yes or no	
	Late entry into prenatal care	Prenatal care initiated after the first trimester, yes or no	
	Inadequate prenatal care utilization	Classified as having inadequate prenatal care utilization as defined by the APNCU Index, yes or no	
	Race/Ethnicity	Categorical variable classifying father's race/ethnicity as Hispanic, White, Black, Other, or Unknown	
	Nativity status	Captures if women are US-born (born within the 50 US states or District of Columbia) or foreign-born (including those born in US territories)	
	National origin	Categorical variable capturing mother's national origin as Mexican, Puerto Rican, or Cuban	
	Age	Categorical variables capturing mother's and father's age in years	
	Delivery method	Live birth was delivered via vaginal delivery, yes or no	
	Infant's sex	Sex assigned at birth, male or female	
	Infant's birth order	First born infant, yes or no	

Level	Measure	Description	Data Source(s)
	Infant's birth season	Categorical variable capturing season of birth as Winter (December-February), Spring (March-May), Summer (June-August), or Autumn (September-November)	
State	Omnibus immigrant law(s)	Passage of an omnibus immigrant law	NCSL Allen, 2016
	State citizen voter ideology	Captures state voter ideology on a conservative-liberal spectrum with possible scores ranging from 0 to 100, whereby lower scores indicate more conservative ideology	State ideology data and measures originally reported in Berry et al., 1998 Updated citizen ideology measures (1960-2016) made publicly available from Fording, 2012
	Percent Latino population	Percent of the state population identified as Latin/Hispanic ethnicity	US Census Bureau
	Percent population living below FPL	Percent of the state population living at or below 100% of the federal poverty level	
	Unemployment rate	Percent of the state population that was unemployed	US Bureau of Labor Statistics

Notes: NCHS = National Center for Health Statistics. APNCU = Adequacy of Prenatal Care Utilization. NCSL = National Conference of State Legislatures. US = United States. FPL = Federal poverty level.

Measures

Outcome Variables

Four outcomes were considered across the three aims of the study: preterm birth, low birth weight, late entry into prenatal care, and inadequate prenatal care utilization. Data on these outcomes were derived from individual-level birth certificate data as provided by NCHS.

Preterm birth. Preterm birth captures early parturition and was defined as a live birth before 37 weeks gestation. This was a binary variable coded as 1 (yes) if the infant was born before 37 weeks gestation and 0 (no) if born at 37 weeks or later.

Low birth weight. Low birth weight captures fetal growth restriction and was defined as a live birth weight of less than 2500 grams (up to and including 2499 grams or less than 5 pounds

and 8 ounces) regardless of gestational age. This was a binary variable coded as 1 (yes) if the infant had a birth weight less than 2500 grams and 0 (no) if birth weight was at least 2500 grams.

Prenatal care utilization. Late entry into care and the Kotelchuck Adequacy of Prenatal Care Utilization (APNCU) Index are used as two different indicators of prenatal care utilization. Late entry into prenatal care is defined as entering prenatal care after the first trimester or not receiving any prenatal care at all and is utilized as a binary variable (entered after the first trimester or did not receive any care at all, coded as 1 if yes). It was calculated based on the reported month of gestation in which prenatal care was initiated. The APNCU Index provides a more complete picture of prenatal care use by considering information on utilization after initiation, categorizing prenatal care across two dimensions: Adequacy of Initiation of Prenatal Care and Adequacy of Received Services (Kotelchuck, 1994a). The Adequacy of Initiation of Prenatal Care dimension describes the adequacy of the timing of prenatal care initiation by classifying the timing of initiation as falling within one of four categories (months 1 or 2, months 3 or 4, months 5 or 6, and months 7 through 9 or not at all) rather than by trimester. The Adequacy of Received Services dimension describes the adequacy of the total number of prenatal care visits attended during pregnancy, adjusting for the gestational age at prenatal care initiation and delivery), and is based on prenatal care visitation standards set by the American College of Obstetricians and Gynecologists (ACOG). This dimension was calculated by dividing the *actual* number of visits attended from the *expected* number of visits for a pregnancy of a given gestation. Then, the ratio was classified into one of four categories: Inadequate (less than 50% of expected visits); Intermediate (50%-79% of recommended visits); Adequate (80%-109% of recommended visits); and Adequate Plus (110% or more of recommended visits). Both dimensions of the APNCU were then combined to provide a single summary of prenatal care

utilization with four categories: Inadequate (initiation after the 4th month *or* less than 50% of recommended visits); Intermediate (initiation by the 4th month *and* 50-79% of recommended visits); Adequate (initiation by the 4th month *and* 80-109% of recommended visits); and Adequate Plus (initiation by the 4th month *and* 110% or more of recommended visits) (Kotelchuck, 1994a). Finally, this information was used to create a binary variable capturing inadequate prenatal care utilization, coded as 1 (yes) if the APNCU Index was scored as "Inadequate" and 0 (no) if the APNCU Index was scored as "Intermediate," "Adequate," or "Adequate Plus."

Time Variable

A time variable was created to provide a quantitative measure of elapsed time (or trend) based on the quarter-year of conception among births that occurred from January 2005 to December 2014. While birth month and year are directly reported in birth certificate data, the timing of conception was calculated based on the reported gestational age at delivery and month and year of birth.

Among all births during the 2005-2014 study period, the earliest date of conception was February 2004, and the latest date of conception was August 2014; however, far fewer births were conceived during February to March 2004 and April to August 2014 compared to other months/quarters of the study period, especially among Latinas living in states that passed omnibus immigrant laws. As a result, these records were excluded from analyses so that only those births that were conceived from April 2004 through March 2014 were retained. So, the time variable began at 1 for the first quarter-year of conception included in the study period (April-June 2004; time=1) and counted upwards for each following quarter-year through the end of the study period (January-March 2014; time=40).

Exposure (Policy) Variables

A state's passage of an omnibus immigrant law is the key exposure of interest. Omnibus immigrant laws were treated as a dummy variable representing whether the state had a (first) omnibus immigrant law present during the quarter-year of conception. For each state, this was coded as 0 for all quarter-years prior to the passage of the law and then coded as 1 for all quarter-years during and after the law was passed based on the date the omnibus bill is signed into law (see **Appendix A**). Although the signed date and effective date differ for some omnibus immigrant laws across states, it has been found that awareness of the laws is highest at the time of passage versus the date that they are scheduled to go into effect (Torche & Sirois, 2019). Importantly, this variable was reset to 0 in cases where an omnibus immigrant law was repealed (i.e., coded as 0 for all quarter-years during and after policy repeal). This was only relevant in Colorado whose single omnibus immigrant law was passed in May 2006 but subsequently repealed in April 2010. All other omnibus immigrant laws remained in effect, at least partially, through the end of the study period.

Finally, a count variable was also included to provide a quantitative measure of the post-policy period following passage of the first omnibus immigrant law. This was coded as 0 for all quarter-years prior to and during policy passage and then began counting upward from 1 starting from the first quarter-year *after* policy passage. This variable was also reset to 0 starting the quarter-year after policy repeal, when applicable.

As six of the 10 states passed more than one omnibus immigrant law during the study period (see **Appendix A**), an additional dummy was included to control for the presence of a second omnibus immigrant policy during the study period. Again, this variable was set to 0 for

all quarter-years before the passage of the second omnibus immigrant law and then coded as 1 for all quarter-years during and after the law was passed.

Moderating Variables

Two moderating variables were considered across Aims 1 through 3 of this dissertation: mother's nativity status and mother's national origin.

Nativity Status. Nativity status was a binary variable coded as either US- or foreign-born based on birth certificate data on nativity which captures whether a mother was born in the US (i.e., within one of the 50 US states or the District of Columbia) or outside of the US. Thus, those who report being born in a US territory (e.g., Puerto Rico) are coded as foreign-born.

National Origin. National or Latin origin was a categorical variable coded as Mexican, Puerto Rican, Cuban, Central and South American, and other or unknown origin as identified in birth certificate data. This variable captures Latin origin and/or descent regardless of nativity (i.e., it includes those who are foreign- and US-born). According to NCHS, "Central and South American" is a collapsed category due to insufficient sample sizes of women among individual Central and South American nation states. Because of heterogeneity in the "Central and South American" and "Other or Unknown Origin" categories, analyses that assess national origin as a moderating variable (Aim 3) will only include women of Mexican, Puerto Rican, or Cuban descent. These represent the three largest subgroups in the US, accounting for approximately 80% of the US Latino population (Noe-Bustamante, 2019). Note that analyses for Aim 1 and Aim 2 will include *all* women who identified as Hispanic/Latina regardless of national origin.

Additional Variables

Individual-level Variables. Other individual-level sociodemographic and health characteristics are used as control variables in analyses. Characteristics of the mother included

age, marital status, and delivery method (e.g., vaginal vs. cesarean section). In addition to their association to adverse birth outcomes, these characteristics were chosen because they had limited to no missingness; other variables (e.g., mother's education, smoking status) had significant missingness and, therefore, were not considered in primary analyses. Father's age and race/ethnicity, as well as infant's sex, birth order, and birth season were also included as categorical control variables. Birth season was a categorical variable capturing whether the infant was born in Winter (December-February), Spring (April-May), Summer (June-August), or Autumn (September-November) to account for seasonal variation in birth outcomes. In instances where father's characteristics were classified as "unknown" or "not stated" in birth records, the "unknown" coding was retained rather than setting these observations to missing. Father's race/ethnicity was utilized as a categorical variable coded as either Hispanic/Latino (regardless of race), non-Hispanic White, non-Hispanic Black, other non-Hispanic race/ethnicity, or Unknown/not stated.

State-level Variables. Several state-level variables were also used as control variables in analyses. Time-varying continuous variables included the percent of the population who identified as Hispanic/Latino, percent of the state population living below the federal poverty level, state unemployment rate, and citizen ideology. These state-level demographic, economic, and political indicators have been shown to be predictive of states' likelihood of passing both restrictive and inclusive immigrant policies (Avery et al., 2017; Chavez & Provine, 2009; Commins & Wills, 2017; Jacobs, 2016; Monogan, 2013) and are also hypothesized as being associated with pregnancy outcomes. The measure of citizen ideology was first constructed by Berry and colleagues (Berry et al., 1998) and reflects the states' yearly average voter ideology on a conservative-liberal spectrum from 0 to 100, whereby lower scores indicate a more

conservative citizenry. Briefly, the measure is constructed based on the ideological positions of each member of Congress in each year using interest group ratings. Then, for each state district, the average ideology scores for the incumbent and challenger are weighted against their respective voter support (assumed to reflect ideological divides in the electorate) and used to construct a final citizen ideology score per year (Berry et al., 1998; Fording, 2012). All state-level variables were recorded annually across the study period and merged with birth certificate data based on the infant's year and birth state.

Analytic Sample

The analytic sample was drawn from all women who gave birth between 2005 and 2014 in the 50 US states and the District of Columbia (N=41,003,904). A detailed flowchart outlining the sample selection procedure is provided in **Appendix C**. In summary, the analytic sample was first restricted to women who reported residing and delivering in the same state, had a singleton birth, were between the ages of 15 to 49 years, and identified as Hispanic/Latina (N=9,361,675).[8] Latina women are those who identified as Mexican, Puerto Rican, Cuban, Dominican, Central and South American, or other or unknown Hispanic origin. Non-singleton births and infants born to Latina women aged less than 15 years or older than 49 years are excluded because of their increased risk of delivering preterm or low weight infants that would be unrelated to the passage or presence of omnibus immigrant laws. The sample was further restricted to include only records for infants born in one of the 10 states that passed omnibus immigrant legislation (N=1,171,077). Further refinements were made to the study sample by excluding records with missing information on gestational age, birth weight, delivery method, nativity status, and birth order (N=1,128,722). Finally, as described earlier, those births conceived outside of the defined

[8] There was little to no missingness in mother's age, Hispanic/Latin origin, state of birth, and plurality.

period from April 2004 through March 2014 were also excluded, yielding a final analytic sample of N=1,126,725. Additional refinements to the analytic sample were made depending on the specific Aim under study and are further detailed in the following "Analytic Strategy" section below, where applicable.

Analytic Strategy

An ITS design was used to estimate trends in preterm birth, low birth weight, late entry to prenatal care, and inadequate prenatal care utilization, respectively, across the study period and test for significant changes in the level and/or slope of these trends following passage of an omnibus immigrant law. Modeling trends in the outcomes before the passage of an omnibus immigrant law helps ensure that the presence of any observed changes is not the result of pre-existing trends, a critical strength of the ITS design.

All models used across the three study aims utilize multilevel logistic regression with clustered standard errors (clustered by state to account for independence across but not within states) and control for individual- and state-level covariates. All analyses were conducted using StataSE version 16 (StataCorp, College Station, TX). Prior to running regression analyses, initial summary statistics were completed. This included descriptive statistics of key covariates among the total analytic sample and stratified by nativity status and national origin (among those whose national origin was identified as Mexican, Cuban, or Puerto Rican), respectively. Descriptive statistics were also completed for state-level characteristics. Additionally, I compared the composition of the sample during the time before and after passage of the first omnibus immigrant policy to detect potential differences in sample composition. The following sub-sections provide additional details on the analytic strategies specific to each study Aim.

Analytic Strategy for Aim 1

The goal of Aim 1 was to determine the effects of passage of omnibus immigrant laws on the odds of preterm birth and low birth weight, respectively, among infants born to Latina women using multilevel logistic regression with robust standard errors clustered by state. The following depicts the simplified empirical model used to determine the effects of the passage of an omnibus immigrant law on each outcome:

Empirical Model:

$$\text{Logit(outcome)} = \beta_o + \beta_1(\text{Time}) + \beta_2(\text{OmnibusLaw}) + \beta_3(\text{OmnibusLawTime}) + \beta_x(X) + \beta_z(Z) + \varepsilon$$

The variable **Time** represented a continuous measure of elapsed time that began counting upward from 1 from the first quarter-year of the study period (April-June 2004; time=1) until the final quarter-year of the study period (January-March 2014; time=40) and was coded based on the timing of the infant's conception.[9] This variable was then centered around the quarter-year of law passage within each state to allow for a consistent pre-policy and post-policy period across all states where: t=0 represented the quarter-year that the omnibus immigrant policy was passed; t+1, t+2, t+3, and so on, were observations captured at ascending time points following policy passage (i.e., time periods in which the policy is fully in place); and t-1, t-2, t-3, and so on, captured observations at descending time points prior to policy passage.[10] The variable

[9] Analyses were also run with a time variable measuring elapsed time beginning at 1 from the first *month-year* of the study period. No substantial differences were found comparing findings of time based on quarter-year versus month-year; to retain higher sample sizes at each measure of time, analyses were run using a measure of elapsed time based on quarter-years.

[10] After centering time around passage of a first omnibus immigrant law within each state, 28 time points are captured prior to policy passage (t-1 through t-28) and 31 time points are captured after policy passage (t+1 through t+31).

OmnibusLaw was a dummy variable representing the presence of a first omnibus immigrant law during the quarter-year of conception and was coded as 0 for all quarter-years before the passage of the law and then coded as 1 for all quarter-years during and after the law was passed. Next, the **OmnibusLawTime** variable was a count variable coded as 0 for all quarter-years before and during the passage of the law and then began counting upward from 1 beginning with the first quarter-year after the law was passed. The **X** and **Z** variables represented the vector of individual- and state-level control variables, respectively, to be included in models. Individual-level characteristics included mother's age, nativity status, national origin, marital status, and delivery method (i.e., vaginal vs. cesarean section), father's age and race/ethnicity, and infant's sex, birth order, and birth season. An indicator of prenatal care utilization was *not* included as a control variable as it was hypothesized as existing along the causal pathway (see **Figure 3.2**). State-level characteristics were measured yearly and included citizen ideology, the percent of the population that was Latino, the precent population living below the federal poverty level, and the unemployment rate. Also captured in this vector was the presence of a second omnibus immigrant law; this was a dummy variable representing the presence of a second omnibus immigrant law during the quarter-year of conception and was coded as 0 for all quarter-years before the passage of the law and then coded as 1 for all quarter-years during and after the law was passed. Because of issues surrounding the feasibility of standardizing the timing of both a first and second omnibus immigrant law within a single model (due to differences in the timing of passage of a second policy relative to the passage of a first policy within and across states), I was not able to formally evaluate if the passage of a second omnibus immigrant law resulted in different or additional effects on study outcomes above and beyond the effects observed following the passage of a first omnibus immigrant law.

In the empirical model shown above, the coefficient β_o estimates the baseline log odds of the respective outcome. β_1 represents the slope of the pre-policy period that occurs prior to policy passage starting at time *t*, whereas $\beta_1 + \beta_3$ estimates the slope of the post-policy period beginning after passage of the first omnibus immigrant policy at time *t*. On their own, the β_2 coefficient represent the immediate change in the log odds of the outcome that occurs after passage of a first omnibus immigrant law while β_3 estimates the change in slope after policy passage. These coefficients were transformed and interpreted as odds ratios by using the *logistic* command in Stata.

Note that additional state-level characteristics were considered but ultimately excluded from statistical models. Percent of the Latino population that was foreign-born was strongly correlated with the percent Latino population. As it is hypothesized that state politics are influenced by the size of the Latino population regardless of their nativity status, the percent of the Latino population variable was retained over the variable describing the percent of the foreign-born Latino population. State's expansion of Medicaid/CHIP coverage to undocumented women and a state's elimination of the 5-year ban for qualified pregnant immigrant women to receive Medicaid coverage were also considered because these policies are aimed at increasing pregnancy- and delivery-related care among immigrant women and can have serious implications for care utilization and subsequent health outcomes (Wherry et al., 2017). However, most of the states included in this study (i.e., those that had at least one omnibus immigrant law) had never enacted either of these policies during the study period and goodness of fit tests provided a lack of support for their inclusion.

Further, I conducted a model building exercise whereby I first ran models examining the effects of omnibus immigrant laws on birth outcomes with only time and policy variables then

subsequently added individual-level characteristics and state-level characteristics to see if their inclusion significantly influenced study findings (see **Appendix D**). There were no substantial differences in the findings after including individual- and state-level characteristics in the model and, therefore, only the results of the full model including all variables are presented for Aim 1.

Sub-analyses were also performed. As low birth weight can result from both preterm births and intrauterine growth restriction among infants born to term, a sub-analysis on the effects of omnibus immigrant laws on low birth weight among a restricted sample of infants born to term (born at 37 weeks or later; N=1,001,502/1,126,725) were also conducted. Furthermore, to understand how the effects of the passage of an omnibus immigrant law on preterm birth and low birth weight differ across foreign- versus US-born Latinas, models were also run stratified by mother's nativity status. In these models, nativity status was removed as an individual-level covariate and used only as the stratifying variable; all other covariates in the model remained unchanged from what was presented above. Results from these models were compared to each other as well as to the model including all births to Latina women to understand the extent of spillover effects of omnibus immigrant laws to US-born Latina women.

In birth certificate data, detailed information is available on country of birth among those born outside of the US (whereas detailed information on country of origin/descent is not made available for those who are US-born outside of the categorization of US-born Mexicans, Puerto Ricans, and Cubans). As such, I also conducted a sub-analysis examining the effects among only infants born to foreign-born Latina women from Mexico compared to those born to women from the Central American countries of Guatemala, Honduras, and El Salvador (sometimes referred to as the Northern Triangle). Among the 677,729 infants born to foreign-born Latina women, 81% (n=551,960) were born to women from Mexico, 7% (n=48,095) were born to women from the

Northern Triangle countries, and the remaining 12% (n=77,674) to women from other Latin American countries. Although information on citizenship status is not provided in birth certificate data, analysis among this group may offer the best approximation of an intent-to-treat group as it focuses on those hypothesized as being the most likely to be impacted by omnibus immigrant legislation. Mexicans, Hondurans, Salvadorans, and Guatemalans consistently make up the largest share of deportations from the US, and foreign-born Latinos from these countries also have the highest proportions of those living in the US with undocumented status (Massey & Pren, 2012). Furthermore, such an analysis also helps to understand the extent that findings among infants born to all foreign-born Latinas may be driven by findings among foreign-born Latinas from specific countries or regions.

Additional sensitivity analyses were conducted to further evaluate the robustness of the study findings. Assuming a nine-month gestational period for all births, births conceived within the three quarter-years (or nine months) before and during policy passage (i.e., those conceived at time t, t-1, and t-2) could have had *some* exposure to the policy during gestation even though these observations are captured during the pre-policy period. Thus, all primary analyses were run again with the censoring of infants conceived during these time points to see if and how findings were impacted (see **Appendix E**). The results of these analyses did not substantially differ from those including all infants (i.e., models with no censoring) and, therefore, the results presented for Aim 1 will be those from uncensored models.

Because omnibus immigrant laws were passed during different months and years during the study period across the ten states, it is unlikely that unmeasured, concurrent changes in states that passed omnibus immigrant laws would explain study findings. However, to ensure that findings are not the result of confounding due to other events taking place around the same time

of policy passage, a control series was included in analyses so that there is both a before-after comparison within the single population of Latina women and an intervention-control group comparison. For example, a possible cointervention that could bias results includes the Great Recession that occurred from 2007 to 2009 and overlaps with the period during which some omnibus immigrant laws were passed. Evidence suggests that the Great Recession increased the risk of low birth weight and preterm birth, but that the magnitude of effects were largely universal across racial/ethnic groups (Finch et al., 2019). Thus, the control series will include US-born White and US-born Black women, considered characteristic-based controls (Lopez Bernal et al., 2018), who delivered in states that passed omnibus immigrant legislation. It is theorized that US-born White and Black women would have been impacted by the recession or other unmeasured factors but would not have been the targets of omnibus immigrant legislation and accompanying anti-Latino and anti-immigrant rhetoric. To complete this analysis, stratified models were run among US-born White women and US-born Black women to provide estimates for the effects of omnibus immigrant policies (i.e., the change in level and/or slope) on birth outcomes across both groups. The specifications of the models run for these analyses were nearly identical to those performed for Latina women except that nativity status and national origin were excluded as these variables are only relevant to the intervention group. A table of descriptive statistics among infants born to Latina, Black, and White women is included in **Appendix F**.

Finally, because of differences in the specific composition of each omnibus immigrant law, it is possible that the passage of a law in certain states would largely explain findings. To examine this possibility, one policy state was removed from the specified models at a time to examine how each policy state's exclusion from the model influenced results, if at all.

Analytic Strategy for Aim 2

The purpose of Aim 2 was to determine the effects of omnibus immigrant laws on the odds of late entry into prenatal care and inadequate prenatal care utilization, respectively, among Latina women. The analytic sample used in Aim 1 had been restricted to those with complete information on gestational age and birth weight at delivery; however, additional restriction of the sample was required to conduct analyses for Aim 2 due to missingness in month of prenatal care initiation and/or the number of prenatal care visits attended (n=246,214). Exclusion of observations missing on either of these indicators, used to construct the late entry into prenatal care and inadequate prenatal care utilization variables, resulted in a sample of N=880,511/1,126,725 (78% of the original analytic sample). Furthermore, a closer inspection of missingness in prenatal care indicators showed that observations from Alabama and Arizona had 100% missingness from 2009 through 2013; therefore, these two states were excluded from the analyses completely, resulting in an analytic sample for Aim 2 of N=653,984 (58% of the original analytic sample) representing observations across the 8 remaining states of Colorado, Georgia, Indiana, Missouri, Nebraska, Oklahoma, South Carolina, and Utah. A table of descriptive statistics comparing those with missing versus complete information on prenatal care utilization indicators from the 8 states included in Aim 2 analyses is provided in **Appendix G**. Results from Pearson's chi-square tests show differences in these groups across most characteristics, suggesting observations are not missing at random.

Finally, because the entire gestational period must be captured to measure potential effects of omnibus immigrant laws on prenatal care utilization indicators (e.g., to ensure that temporality is maintained between exposure and outcome), all models were run with the

censoring of observations conceived within 3 quarter-years (nine months) during and before policy passage. In other words, infants conceived at time periods t, t-1, and t-2 were excluded from Aim 2 analyses resulting in a final analytic sample of N=597,026. Infants conceived during the quarter-year during policy passage are excluded because, in theory, approximately 3 months of their gestational period would have occurred before the policy was in place while 6 months of the gestational period would have occurred when the policy was in place.

The empirical model tested in Aim 2 is like that shown above in the "Analysis Plan for Aim 1" sub-section. The only difference is that delivery method (included in the variable **X** representing the vector of individual-level characteristics) was not included as a control variable. Thus, the interpretation of model coefficients for policy variables does not substantially differ from what was previously described. Further, like the procedure conducted for Aim 1, a model building exercise was completed whereby I first ran models examining the effects of omnibus immigrant laws on prenatal care indicators with only time and policy variables included and then subsequently added individual-level characteristics and state-level characteristics to see if their inclusion significantly influenced study findings (see **Appendix H**). No substantial differences in study findings were present after including individual- and state-level characteristics in the model and, therefore, only the results of the full model including all variables are presented for Aim 2.

Like Aim 1, a sub-aim of Aim 2 was to evaluate potential differences in the effects of omnibus immigrant policies on late entry into prenatal care and inadequate prenatal care utilization, respectively, comparing foreign-born with US-born Latina women. This was done by stratifying models by nativity status. A sub-analysis investigating the effects of omnibus immigrant laws on late entry into prenatal care and inadequate prenatal care utilization among

infants born to foreign-born Latinas from Mexico, Guatemala, Honduras, and El Salvador was also performed. Again, various sensitivity analyses were also conducted. First, stratified models were run among US-born Black and US-born White women to assess whether any findings were the result of cointerventions taking place at or around the same time that omnibus immigrant laws were passed. Then, models were run excluding one policy state at a time to determine the extent that specific omnibus immigrant laws were driving any observed findings.

Analytic Strategy for Aim 3

The objective of Aim 3 is to assess whether the effects of omnibus immigrant laws on preterm birth, low birth weight, late entry into prenatal care, and inadequate prenatal care utilization differs across mother's national origin. These analyses were completed only among women who identified as being of either Mexican, Puerto Rican, or Cuban descent/origin. In other words, women whose national origin is identified as "Central or South American" or "other or unknown Hispanic origin" in birth certificate data were excluded as these are conceptualized as being too heterogeneous to meaningfully interpret study findings. Restricting the dataset to Mexican, Puerto Rican, and Cuban origin women yields analytic samples of N=923,810 for analyses of birth outcomes (representing 82% of the analytic sample used in Aim 1) and N=628,195 for analyses of prenatal care utilization indicators (representing 80% of the analytic sample used in Aim 2).

Analyses for Aim 3 were completed following similar procedures as outlined for Aims 1 and 2 above. Briefly, first, regression models for each outcome were run among the total sample to obtain estimates of effects among Mexican, Puerto Rican, and Cuban women combined (since this sample differs from that in Aims 1 and 2 that included all Latina women regardless of national origin). Then, models will be run again stratified by national origin so that results are

obtained for Mexican, Puerto Rican, and Cuban origin women separately. So, the analyses carried out in Aim 3 included models estimating the effects of passage of a first omnibus immigrant law on:

- The odds of preterm birth among the total sample and stratified by national origin;
- The odds of low birth weight among the total sample and stratified by national origin;
- The odds of low birth weight among infants born to term among the total sample and stratified by national origin;
- The odds of late entry into prenatal care among the total sample and stratified by national origin; and
- The odds of inadequate prenatal care utilization among the total sample and stratified by national origin.

As national origin is now being used as a stratifying variable, it was no longer included as an individual-level covariate in any model. No other changes in model specifications were made from what described in the analysis plans for Aims 1 and 2 for birth and prenatal care utilization outcomes, respectively; thus, model coefficients can be interpreted in a similar fashion as originally outlined in the analysis plan for Aim 1. Finally, sensitivity analyses were performed to test the robustness of findings, including the inclusion of a control series (infants born to US-born White and US-born Black women) in the models and testing models to the exclusion of one policy state at a time.

CHAPTER 6. SAMPLE CHARACTERISTICS

Descriptive Statistics of the Study Sample

Descriptive statistics of infants born to Latina women in states with omnibus immigrant legislation during the study period among the total sample and stratified by mother's nativity status are provided in **Table 6.1**. Sixty percent of infants were born to foreign-born women. Among both US- and foreign-born women, most were of Mexican origin or descent. A higher proportion of US-born women were of Puerto Rican and Cuban descent than foreign-born women (4% vs. 1% and 1% vs. <1%, respectively), while a higher proportion of foreign-born women were Central and South American (14% vs. 3%) compared to US-born women. Foreign-born women were also older and more likely to be married than US-born women. They were also more likely than US-born women to have entered prenatal care after the first trimester (47% vs. 37%) and more likely to have inadequate prenatal care utilization (28% vs. 23%). About three-quarters of both samples had a vaginal delivery.

Fathers of infants born to US-born women were more likely to be older than fathers of infants born to foreign-born women. A significantly higher proportion of fathers of infants born to US-born women had unknown age than those born to foreign-born women (18% vs. 12%). Most fathers of infants born to both US- and foreign-born women identified as Latino; however, this proportion was significantly higher among infants born to foreign-born women than those born to US-born women (80% vs. 52%). A significantly higher proportion of fathers of infants born to US-born women identified as White or Black than compared with fathers of infants born to foreign-born women (21% vs. 5% and 5% vs <1%, respectively). Further, a significantly higher proportion of fathers of infants born to US-born women had unknown race/ethnicity than those of foreign-born women (19% vs. 13%).

About half (51%) of infants were male with no differences in sex assigned at birth across mother's nativity status. Infants of US-born women were more likely to be of first birth order than those of foreign-born women (35% vs. 25%). About 11% of infants born to both US- and foreign-born women were preterm, while a higher proportion of infants born to US-born women were classified as low weight compared to infants born to foreign-born women (7% vs. 5%).

Table 6.1. Descriptive Statistics of Infants born to Latina Women in States with Omnibus Immigrant Legislation Stratified by Mother's Nativity Status, 2005-2014[a]

	Total N=1,126,725	Mother's Nativity Status		p-value[b]
		US-born N=448,996	Foreign-born N=677,729	
MOTHER'S CHARACTERISTICS				
Nativity status				
US-born	39.9	-	-	
Foreign-born	60.2	-	-	
National origin				
Mexico	79.1	76.4	80.8	<0.001
Puerto Rico	2.4	4.4	1.0	
Cuba	0.6	0.9	0.3	
Central and South American	9.5	3.1	13.8	
Other or Unknown	8.5	15.2	4.1	
Age, years				
15-19	14.0	20.3	9.9	<0.001
20-24	29.4	34.4	26.1	
25-29	27.3	24.9	28.9	
30-34	18.8	14.0	21.9	
35-39	8.6	5.3	10.8	
40-49	1.9	1.1	2.4	
Married				
No	48.7	54.1	45.2	<0.001
Yes	51.3	45.9	54.8	
Late entry into prenatal care[c]				
No	56.7	62.8	53.1	<0.001
Yes	43.3	37.3	46.9	
Inadequate prenatal care[c]				
No				<0.001
Yes				
Delivery method				
Vaginal	75.4	75.3	75.4	0.583

	Total N=1,126,725	Mother's Nativity Status		p-value[b]
		US-born N=448,996	Foreign-born N=677,729	
Cesarean section	24.6	24.7	24.6	
FATHER'S CHARACTERISTICS				
Age, years				
Less than 20	4.7	7.8	2.7	<0.001
20-24	19.5	23.9	16.6	
25-29	25.1	23.9	25.9	
30-34	19.7	15.9	22.1	
35-39	10.6	7.4	12.8	
40-44	4.2	2.5	5.3	
45 and over	1.9	1.0	2.5	
Unknown	14.3	17.6	12.1	
Race/Ethnicity				
Latino	68.7	52.0	79.8	<0.001
White	11.7	21.4	5.4	
Black	2.5	5.0	0.8	
Other	1.5	2.6	0.8	
Unknown	15.5	19.0	13.2	
INFANT'S CHARACTERISTICS				
Sex				
Male	51.1	51.1	51.1	0.873
Female	48.9	48.9	48.9	
First born infant				
No	70.9	64.8	75.0	<0.001
Yes	29.1	35.2	25.0	
Birth season				
Spring	23.9	24.1	23.8	<0.001
Summer	26.4	26.1	26.5	
Autumn	25.6	25.7	25.5	
Winter	24.1	24.1	24.1	
Preterm birth				

	Total N=1,126,725	Mother's Nativity Status		p-value[b]
		US-born N=448,996	Foreign-born N=677,729	
No	88.9	88.6	89.1	<0.001
Yes	11.1	11.4	11.0	
Low birth weight				
No	94.3	93.5	94.8	<0.001
Yes	5.7	6.5	5.2	
Low birth weight among infants born to term[d]				
No	97.5	97.1	97.8	<0.001
Yes	2.5	2.9	2.2	

Notes: Proportions are shown and may not add to 100 due to rounding. Late entry into prenatal care defined as initiation after the first trimester. Inadequate prenatal care is scored according to the Adequate Prenatal Care Utilization (APNCU) Index and denotes prenatal care that is initiated after the 4th month of pregnancy or attending less than 50% of recommended visits. Preterm birth is defined as births occurring before 37 weeks gestation. Low birth weight is defined as infant weight less than 2500 grams at delivery.

[a]States that passed at least one omnibus immigrant law include: Alabama, Arizona, Colorado, Georgia, Indiana, Missouri, Nebraska, Oklahoma, South Carolina, and Utah.

[b]Results of Pearson's chi-square tests of differences across categorical variables across mother's nativity status.

[c]Restricted to those with complete information on prenatal care utilization indicators (Total N=597,026; US-born N=224,150; Foreign-born N=372,876)

[d]Restricted to those who delivered low weight infants at 37 weeks gestation or later (Total N=1,001,502; US-born N=398,001; Foreign-born N=603,501)

Table 6.2 provides descriptive statistics of infants born to Latina women in states with omnibus immigrant legislation among the total sample and stratified by mother's national origin, comparing women of Mexican, Puerto Rican, and Cuban origin or descent. About 96% of the study sample identified is Mexican. A significantly higher proportion of Mexican origin women were foreign-born compared to Puerto Rican and Cuban women (62% vs. 25% and 35%, respectively). Compared to Mexican and Puerto Rican women, Cuban women were more likely to be older and married. Significant differences were also detected across national origin subgroups in prenatal care utilization indicators. Nearly half (45%) of Mexican women entered prenatal care after the first trimester compared to 32% and 30% of Puerto Rican and Cuban women. Mexican women were also the most likely to have inadequate prenatal care utilization (27% vs. 20% and 18% among Puerto Rican and Cuban women, respectively).

Fathers of infants born to Cuban women were more likely to be older than fathers of infants born to Mexican and Puerto Rican women. Compared to 11% of fathers of infants born to Cuban women, 16% and 14% of fathers of infants born to Puerto Rican and Mexican women, respectively, had unknown age. Nearly three-quarters (72%) of fathers of infants born to Mexican women were Latino compared to 37% of fathers of infants born to Cuban women and 32% of fathers of infants born to Puerto Rican women. Among fathers of infants born to Puerto Rican women, 30% and 17% were identified as White and Black, respectively. Similarly, among fathers of infants born to Cuban women, 38% and 9% were categorized as White and Black, respectively. By contrast, 9% of fathers of infants born to Mexican women were categorized as White, while 2% were categorized as Black. A significantly higher proportion of fathers of infants born to Puerto Rican and Mexican women had unknown race/ethnicity than those of Cuban women (18% and 16%, respectively, vs. 13%).

About half (51%) of infants were male with no differences in sex assigned at birth across mother's national origin. Infants of Cuban and Puerto Rican women were more likely to be of first birth order than those born to Mexican women (35% and 34%, respectively, vs. 29%). About 11% of infants born to Mexican and Puerto Rican women were preterm compared to 10% among those born to Cuban women. Infants born to Puerto Rican women had the highest proportion of low birth weight at 7% compared to 6% among those born to Mexican and Cuban women.

Table 6.2. Descriptive Statistics of Infants born to Latina Women in States with Omnibus Immigrant Legislation Stratified by Mother's National Origin, 2005-2014[a,b]

		Mother's National Origin			
	Total N=923,810	**Mexican N=890,738**	**Puerto Rican N=26,660**	**Cuban N=6,412**	**p-value[c]**
MOTHER'S CHARACTERISTICS					
National origin					
Mexican	96.4	-	-	-	
Puerto Rican	2.9	-	-	-	
Cuban	0.7	-	-	-	
Nativity status					
US-born	39.7	38.5	74.7	65.1	<0.001
Foreign-born	60.3	61.5	25.3	34.9	
Age, years					
15-19	14.6	14.7	12.3	8.6	<0.001
20-24	29.8	29.8	30.4	25.5	
25-29	27.2	27.1	28.0	27.8	
30-34	18.3	18.3	18.9	22.6	
35-39	8.3	8.3	8.5	12.3	
40-49	1.8	1.8	1.9	3.3	
Married					
No	49.6	49.8	45.2	38.4	<0.001
Yes	50.4	50.2	54.8	61.6	
Late entry into prenatal care[d]					
No	55.9	55.2	68.1	70.4	<0.001
Yes	44.2	44.8	32.0	29.6	
Inadequate prenatal care[d]					
No	73.9	73.5	80.2	82.3	<0.001
Yes	26.1	26.5	19.8	17.7	
Delivery method					
Vaginal	75.4	75.7	69.5	66.6	<0.001

	Total N=923,810	Mother's National Origin			p-value[c]
		Mexican N=890,738	Puerto Rican N=26,660	Cuban N=6,412	
Cesarean section	24.6	24.3	30.5	33.4	
FATHER'S CHARACTERISTICS					
Age, years					
Less than 20	4.9	4.9	4.1	2.6	<0.001
20-24	20.0	20.0	19.6	14.4	
25-29	25.2	25.3	25.0	22.8	
30-34	19.4	19.4	19.3	22.7	
35-39	10.4	10.3	10.1	15.8	
40-44	4.0	4.0	4.1	7.0	
45 and over	1.7	1.7	1.7	3.3	
Unknown	14.5	14.4	16.0	11.4	
Race/Ethnicity					
Latino	70.5	71.9	32.1	37.1	<0.001
White	10.2	9.4	30.1	38.4	
Black	2.3	1.8	17.0	8.4	
Other	1.4	1.4	3.2	3.0	
Unknown	15.6	15.5	17.7	13.1	
INFANT'S CHARACTERISTICS					
Sex					
Male	51.1	51.1	51.0	51.7	0.624
Female	48.9	48.9	49.0	48.3	
First born infant					
No	71.2	71.4	65.9	64.6	<0.001
Yes	28.8	28.6	34.1	35.5	
Birth season					
Spring	23.9	23.9	23.6	24.4	0.185
Summer	26.4	26.4	26.9	26.7	
Autumn	25.6	25.6	25.6	25.8	
Winter	24.1	24.1	23.8	23.1	
Preterm birth					

	Total N=923,810	Mother's National Origin			p-value[c]
		Mexican N=890,738	Puerto Rican N=26,660	Cuban N=6,412	
No	88.9	88.9	88.5	89.6	0.025
Yes	11.1	11.1	11.5	10.5	
Low birth weight					
No	94.4	94.4	92.8	93.9	<0.001
Yes	5.6	5.6	7.2	6.1	
Low birth weight among infants born to term[e]					
No	97.6	97.6	96.8	97.4	<0.001
Yes	2.4	2.4	3.2	2.6	

Notes: Proportions are shown and may not add to 100 due to rounding. Late entry into prenatal care defined as initiation after the first trimester. Inadequate prenatal care is scored according to the Adequate Prenatal Care Utilization (APNCU) Index and denotes prenatal care that is initiated after the 4th month of pregnancy or attending less than 50% of recommended visits. Preterm birth is defined as births occurring before 37 weeks gestation. Low birth weight is defined as infant weight less than 2500 grams at delivery.

[a]States that passed at least one omnibus immigrant law include: Alabama, Arizona, Colorado, Georgia, Indiana, Missouri, Nebraska, Oklahoma, South Carolina, and Utah.

[b]Restricted to those who identified as Mexican, Puerto Rican, or Cuban origin or descent.

[c]Results of Pearson's chi-square tests of differences across categorical variables across mother's nativity status.

[d]Restricted to those with complete information on prenatal care utilization indicators (Total N=452,971; Mexican N=430,245; Puerto Rican N=18,464; Cuban N=4,262).

[e]Restricted to those who delivered low weight infants at 37 weeks gestation or later (Total N=821,516; Mexican N=792,178; Puerto Rican N=23,596; Cuban N=5,742).

Descriptive statistics of the sample of infants born to Latina women, comparing quarter-years before to the quarter-years following passage of first omnibus immigrant laws are provided in **Table 6.3**. Compared to the pre-policy period, Latina women were significantly less likely to be foreign-born (55% vs. 68%, respectively) and of Mexican descent or origin (77% vs. 83%, respectively) in the post-policy period. Latina women were also slightly older in the post-policy period; a significantly higher proportion of Latina women were 30 years or older in the post-policy compared to the pre-policy period (31% vs. 27%, respectively).

Although 26% of Latina women in both periods achieved adequate prenatal care utilization, there were significantly large differences in late entry into prenatal care. Specifically, 52% of Latina women had late entry into prenatal care during the pre-policy period compared to 39% in the post-policy period. Finally, the likelihood of preterm birth and low birth weight were similar in the pre- to post-policy periods (although the differences were statistically significant).

Table 6.3. Descriptive Statistics of Infants born to Latina Women in States with Omnibus Immigrant Legislation Comparing Years Before and After Policy Passage, 2005-2014[a]

	Pre-Policy Period N=449,735	**Post-Policy Period N=676,990**	**p-value[b]**
MOTHER'S CHARACTERISTICS			
Nativity status			
US-born	31.9	45.1	<0.001
Foreign-born	68.1	54.9	
National origin			
Mexico	82.8	76.6	<0.001
Puerto Rico	2.1	2.6	
Cuba	0.4	0.7	
Central and South American	9.1	9.8	
Other or Unknown	5.6	10.4	
Age, years			
15-19	15.1	13.3	<0.001
20-24	30.8	28.4	
25-29	27.6	27.1	
30-34	17.6	19.5	
35-39	7.4	9.5	
40-49	1.6	2.1	
Married			

	Pre-Policy Period N=449,735	Post-Policy Period N=676,990	p-value[b]
No	48.9	48.6	0.015
Yes	51.1	51.4	
Late entry into prenatal care[c]			
No	48.1	61.1	<0.001
Yes	51.9	38.9	
Inadequate prenatal care[c]			
No	74.2	73.7	<0.001
Yes	25.8	26.3	
Delivery method			
Vaginal	75.9	75.0	<0.001
Cesarean section	24.1	25.0	
FATHER'S CHARACTERISTICS			
Age, years			
Less than 20	4.6	4.8	<0.001
20-24	20.5	18.9	
25-29	25.8	24.6	
30-34	18.7	20.3	
35-39	9.5	11.4	
40-44	3.7	4.6	
45 and over	1.6	2.1	
Unknown	15.6	13.4	
Race/Ethnicity			
Latino	70.5	67.5	<0.001
White	10.1	12.8	
Black	2.0	2.9	
Other	1.3	1.7	
Unknown	16.1	15.2	
INFANT'S CHARACTERISTICS			
Sex			
Male	51.2	51.1	0.484
Female	48.8	48.9	
First born infant			
No	70.5	71.2	<0.001
Yes	29.5	28.8	
Birth season			
Spring	25.4	23.0	<0.001
Summer	25.0	27.3	
Autumn	23.7	26.8	
Winter	26.0	22.9	
Preterm birth			
No	88.7	89.0	<0.001
Yes	11.3	11.0	
Low birth weight			
No	94.5	94.1	<0.001

	Pre-Policy Period N=449,735	Post-Policy Period N=676,990	p-value[b]
Yes	5.6	5.9	
Low birth weight among infants born to term[d]			
No	97.6	97.5	<0.001
Yes	2.4	2.5	

Notes: Proportions are shown and may not add to 100 due to rounding. Late entry into prenatal care defined as initiation after the first trimester. Inadequate prenatal care is scored according to the Adequate Prenatal Care Utilization (APNCU) Index and denotes prenatal care that is initiated after the 4th month of pregnancy or attending less than 50% of recommended visits. Preterm birth is defined as births occurring before 37 weeks gestation. Low birth weight is defined as infant weight less than 2500 grams at delivery.
[a]States that passed at least one omnibus immigrant law include: Alabama, Arizona, Colorado, Georgia, Indiana, Missouri, Nebraska, Oklahoma, South Carolina, and Utah.
[b]Results of Pearson's chi-square tests of differences across categorical variables across mother's nativity status.
[c]Restricted to those with complete information on prenatal care utilization indicators (Total N=595,479; Pre-policy period N=198,451; Post-policy period N=397,028)
[d]Restricted to those who delivered low weight infants at 37 weeks gestation or later (Total N=1,001,502; Pre-policy period N=398,806; Post-policy period N=602,696)

Table 6.4 provides descriptive statistics of time-varying state-level characteristics among the ten states who passed omnibus immigrant legislation during the study period. As all variables are continuous, the mean (SD; standard deviation) is shown providing a summary statistic averaged across the 10-year study period.

Among the states that passed omnibus immigrant legislation during the study period, Oklahoma had the most conservative citizen voter ideology (mean=23.2, SD=5.7) while Colorado had the least conservative citizen voter ideology (mean=49.4; SD=3.5). The percent of the state population that identified as Latino varied considerably across sample states, ranging from an average of about 3% in Alabama and Missouri to 30% in Arizona and 20% in Colorado. Nebraska and Oklahoma had the highest percent of the state population living below the FPL at 16% respectively, while Colorado had the lowest at 13%. However, Nebraska and Oklahoma had among the lowest unemployment rates across the study period (4% and 5%, respectively). The

average unemployment rate was also around 5% in Utah while Georgia had the highest average unemployment rate at about 8%.

Table 6.4. Descriptive Statistics of Time-Varying State-level Characteristics among States with Omnibus Immigrant Legislation, 2005-2014

Time-Varying Characteristic	**State**									
	AL	**AZ**	**CO**	**GA**	**IN**	**MO**	**NE**	**OK**	**SC**	**UT**
State citizen voter ideology, mean (SD)	36.6 (8.7)	45.7 (3.5)	49.4 (3.5)	41.6 (3.5)	45.2 (6.2)	49.0 (6.8)	33.0 (9.2)	23.2 (5.7)	43.4 (4.4)	27.2 (6.4)
Percent Latino population, mean (SD)	3.2 (0.7)	30.0 (0.6)	20.4 (0.6)	8.4 (0.8)	5.6 (0.8)	3.3 (0.4)	8.7 (1.0)	8.3 (1.2)	4.5 (0.8)	12.4 (1.0)
Percent population living below FPL, mean (SD)	13.9 (2.3)	13.8 (2.2)	13.4 (2.2)	13.5 (2.1)	14.8 (2.0)	15.9 (2.2)	16.4 (2.6)	16.0 (2.6)	16.2 (2.5)	15.7 (2.7)
Unemployment rate, mean (SD)	7.1 (2.5)	7.1 (2.4)	6.4 (2.0)	7.8 (2.2)	7.2 (2.1)	6.9 (1.7)	3.8 (0.7)	4.9 (1.1)	8.4 (2.0)	4.8 (2.0)

Notes: Mean (SD) for continuous time-varying variables provide summary statistics averaged across the 10-year study period.
SD = Standard Deviation. AL = Alabama; AZ = Arizona; CO = Colorado; GA = Georgia; IN = Indiana; MO = Missouri; NE = Nebraska; OK = Oklahoma; SC = South Carolina; UT = Utah.

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CHAPTER 7. AIM 1 RESULTS

The purpose of Aim 1 was to determine the effects of omnibus immigrant laws on the odds of preterm birth (Question 1) and low birth weight (Question 2), respectively, among infants born to Latina women. Aim 1 also tested for the presence of effect modification in these birth outcomes by mother's nativity status (Question 3). I hypothesized that the passage of omnibus immigrant laws would result in a statistically significant increase in the odds of preterm birth and low birth weight, respectively, among infants born to Latina women. I also hypothesized that these effects would be moderated by mother's nativity status such that the effects are greatest for infants born to foreign-born versus US-born Latina women.

Question 1: What are the effects of omnibus immigrant laws on the odds of preterm birth among infants born to Latina women?

The results of the model evaluating the effect of passage of an omnibus immigrant law on the odds of preterm birth among infants born to Latina women is provided in **Table 7.1**. There was a statistically significant change in the odds of preterm birth in the quarter-year immediately following passage of an omnibus immigrant law with no change in the post-policy versus pre-policy trend. Specifically, the odds of preterm birth were 5% higher among infants conceived in the quarter-year after policy passage compared to those infants conceived in the quarter-year that the policy was passed (aOR=1.05, 95% CI: 1.01-1.08).

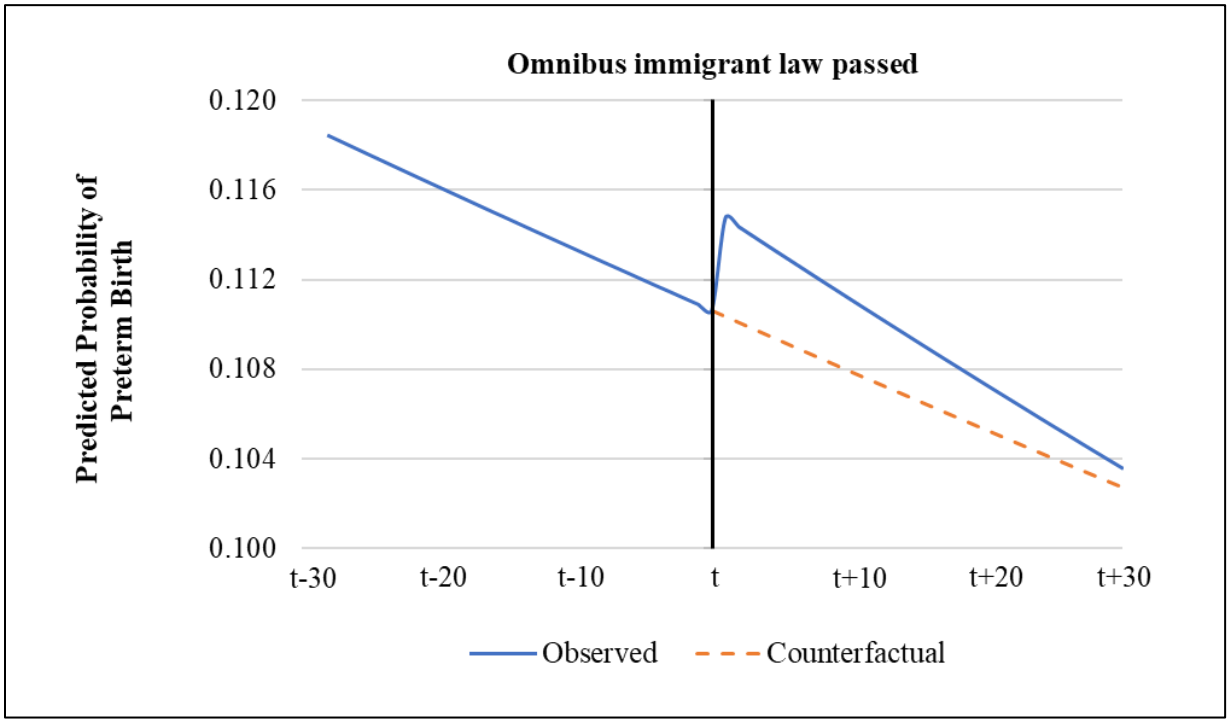
Table 7.1. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Preterm Birth among Infants Born to Latina Women, 2005-2014

Policy Variables	**Preterm Birth** aOR (95% CI)
Time, pre-policy trend	1.00 (0.99-1.00)
OIL passed	1.05 (1.01-1.08)**
OIL, post-policy trend	1.00 (0.99-1.00)

Notes: Adjusted odds ratio (95% confidence interval) shown. Model utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included women's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; p<0.001***

These effects are also illustrated in **Figure 7.1** below, which shows the predicted probability of preterm birth before and after passage of an omnibus immigrant law. The predicted probability of preterm birth rose from 0.111 in the quarter-year during policy passage to 0.115 in the first quarter-year immediately following policy passage. Although the trend of the post-policy slope did not significantly differ from the trend in the pre-policy slope, the figure shows that the predicted probability of preterm birth remains higher during the post-policy period than what would have been expected under the counterfactual (i.e., in the absence of the omnibus immigrant law). Although, by the end of the study period, the predicted probabilities of preterm birth in the observed versus the counterfactual groups are nearly identical.

Figure 7.1. Predicted Probability of Preterm Birth Before and After the Passage of an Omnibus Immigrant Law among Infants Born to Latina Women, 2005-2014



Sensitivity analyses were completed to assess the robustness of findings for Question 1 and are presented in **Appendix I**. First, models were run excluding one policy state at a time to assess if specific states (or policies) were driving results. In general, findings remained consistent to the exclusion of one state from the model at a time (**Table I1**). Further, as hypothesized, no effects to the passage of omnibus immigrant laws were detected when running models among infants born to US-born Black and US-born White women, respectively (**Table I2**).

Question 2: What are the effects of omnibus immigrant laws on the odds of low birth weight among infants born to Latina women?

The results of the model evaluating the effects of passing a first omnibus immigrant law on the odds of low birth weight among infants born to Latina women is provided in **Table 7.2**. No statistically significant changes were detected in either the level or trend of low birth weight resulting from the passage of an omnibus immigrant law.

Table 7.2. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Low Birth Weight among Infants Born to Latina Women, 2005-2014

Policy Variables	**Low Birth Weight** aOR (95% CI)
Time, pre-policy trend	1.01 (1.00-1.01)**
OIL passed	1.03 (0.96-1.09)
OIL, post-policy trend	1.00 (1.00-1.00)

Notes: Adjusted odds ratio (95% confidence interval) shown. Model utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included women's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; p<0.001***

Because of potential overlap between preterm birth and low birth weight, a sub-analysis was performed to assess the effects of omnibus immigrant laws on the odds of low birth weight among infants born to term resulting from intrauterine growth restriction (**Table 7.3**). Again, even when restricting the sample to full term infants, no changes in the level or trend of low birth weight resulting from passage of an omnibus immigrant law were detected.

Table 7.3. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Low Birth Weight among Full Term Infants Born to Latina Women, 2005-2014

Policy Variables	**Low Birth Weight** aOR (95% CI)
Time, pre-policy trend	1.00 (1.00-1.01)
OIL passed	1.04 (0.97-1.11)
OIL, post-policy trend	1.00 (1.00-1.01)

Notes: Adjusted odds ratio (95% confidence interval) shown. Model utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included women's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; p<0.001***

Sensitivity analyses assessing the robustness of findings for Question 2 are shown in **Appendix J**. First, models were run excluding one policy state at a time to assess if specific states (or policies) were driving results. In general, the findings remained consistent when removing one state from the models at a time (**Tables J1 and J2**). However, removal of Colorado and Georgia from the model, respectively, each resulted in the detection of a statistically significant effect of omnibus immigrant laws on low birth weight among full term infants conceived in the quarter-year immediately following policy passage compared to those conceived in the quarter-year during policy passage (**Table J2**). Specifically, the odds of low birth increased by 11% (aOR=1.11; 95% CI: 1.03-1.20) when Colorado was removed from the model and 7% when Georgia was removed from the model (aOR=1.07; 95% CI: 1.02-1.12). Furthermore, while no statistically significant changes in level or trend of the odds of low birth weight following passage of an omnibus immigrant law were detected among White women, there was a statistically significant trend change detected among Black women (**Table J3**). Following passage of an omnibus immigrant law, the odds of low birth weight among all infants

born to Black women decreased by an average of less than 1% each quarter-year through the end of the study period (aOR=0.996; 95% CI: 0.993-0.999) (additional decimal places shown to avoid rounding to 1.00). In contrast, when restricting to infants born to term, no effects of omnibus immigrant laws on the odds of low birth weight were detected among infants born to Black women, but a statistically significant change in the trend of low birth weight following policy passage was detected among White women. Specifically, the odds of low birth weight among full term infants born to White women increased by roughly 1% each quarter-year following policy passage (aOR=1.01; 95% CI: 1.00-1.01).

Question 3: Are the effects of omnibus immigrant laws on preterm birth and low birth weight, respectively, moderated by mother's nativity status?

Table 7.4 provides results of models assessing the effects of omnibus immigrant laws on the adjusted odds ratios of preterm birth (Panel 1) and low birth weight (Panel 2) among infants born to foreign-born compared to US-born Latinas. The passage of an omnibus immigrant law resulted in an immediate increase in the odds of preterm birth among infants born to foreign-born but not US-born Latina women. Specifically, the odds of preterm birth increased by 6% among foreign-born women who conceived in the first quarter-year after policy passage compared to their counterparts who conceived in the quarter-year during policy passage (aOR=1.06; 95% CI: 1.02-1.09). In contrast, regardless of mother's nativity status, no statistically significant effects of omnibus immigrant laws on the odds of low birth weight were detected.

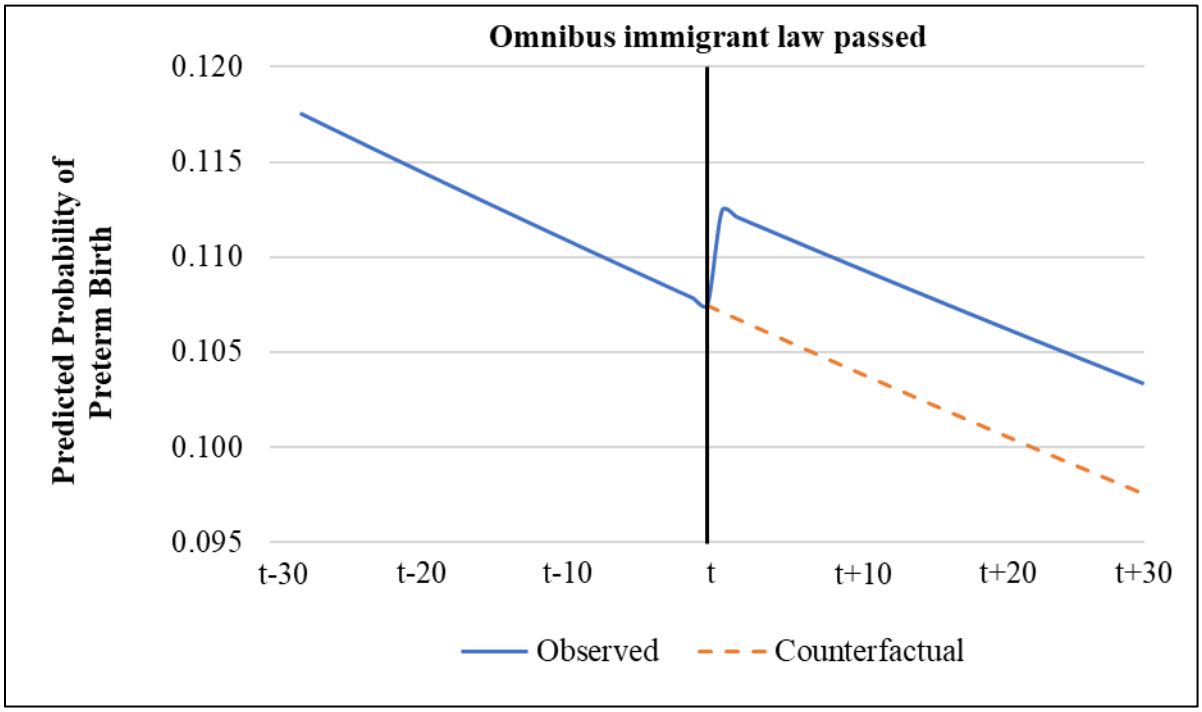
Table 7.4. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratios of Preterm Birth and Low Birth Weight among Infants Born to Foreign- versus US-born Latina Women, 2005-2014

	Policy Variables	aOR (95% CI)	
		Foreign-born	**US-born**
Panel 1: PTB	Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)
	OIL passed	1.06 (1.02-1.09)**	1.04 (0.98-1.12)
	OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)
Panel 2: LBW	Time, pre-policy trend	1.00 (1.00-1.00)	1.01 (1.01-1.01)***
	OIL passed	1.04 (0.99-1.09)	1.03 (0.96-1.12)
	OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (1.00-1.00)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included women's national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PTB = Preterm birth; LBW = Low birth weight; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

These effects are further illustrated in **Figure 7.2**, which shows the predicted probability of preterm birth among infants born to foreign-born Latina women before and after the passage of an omnibus immigrant law. The predicted probability of preterm birth rose from 0.107 in the quarter-year during policy passage to 0.112 in the first quarter-year immediately after policy passage. Although the pre-policy trend did not significantly differ from that of the post-policy period, the figure demonstrates that the predicted probability of preterm birth remained higher than what would have been expected under the counterfactual (i.e., the absence of an omnibus immigrant law) for the remainder of the study period.

Figure 7.2. Predicted Probability of Preterm Birth Before and After Passage of a First Omnibus Immigrant Law among Infants Born to Foreign-born Latina Women, 2005-2014



Again, because of potential overlap between preterm birth and low birth weight, an additional sub-analysis was performed assessing potential effects of omnibus immigrant laws on low birth weight among full term infants born to foreign- versus US-born Latina women **(Table 7.5**). Among full term infants born to foreign-born women, no level change immediately following policy passage was detected. However, there was a statistically significant change in the post-policy trend compared to the pre-policy trend, whereby the odds of low birth weight among full term infants born to foreign-born Latinas increased by about 1% every quarter-year following policy passage (aOR=1.01; 95% CI: 1.00-1.01). Additionally, among full term infants born to US-born Latina women, the odds of low birth weight increased by 11% among those conceived the first quarter-year after passage of an omnibus immigrant law compared to those

conceived during the quarter-year the policy was passed (aOR=1.11; 95% CI: 1.04-1.19). There was no statistically significant change in the post-policy versus pre-policy trend among US-born Latina women.

Table 7.5. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Low Birth Weight among Full Term Infants Born to Foreign- versus US-born Latina Women, 2005-2014

	Low Birth Weight aOR (95% CI)	
Policy Variables	**Foreign-born**	**US-born**
Time, pre-policy trend	1.00 (0.99-1.01)	1.01 (1.00-1.01)***
OIL passed	1.01 (0.92-1.09)	1.11 (1.04-1.19)**
OIL, post-policy trend	1.01 (1.00-1.02)*	1.00 (1.00-1.00)

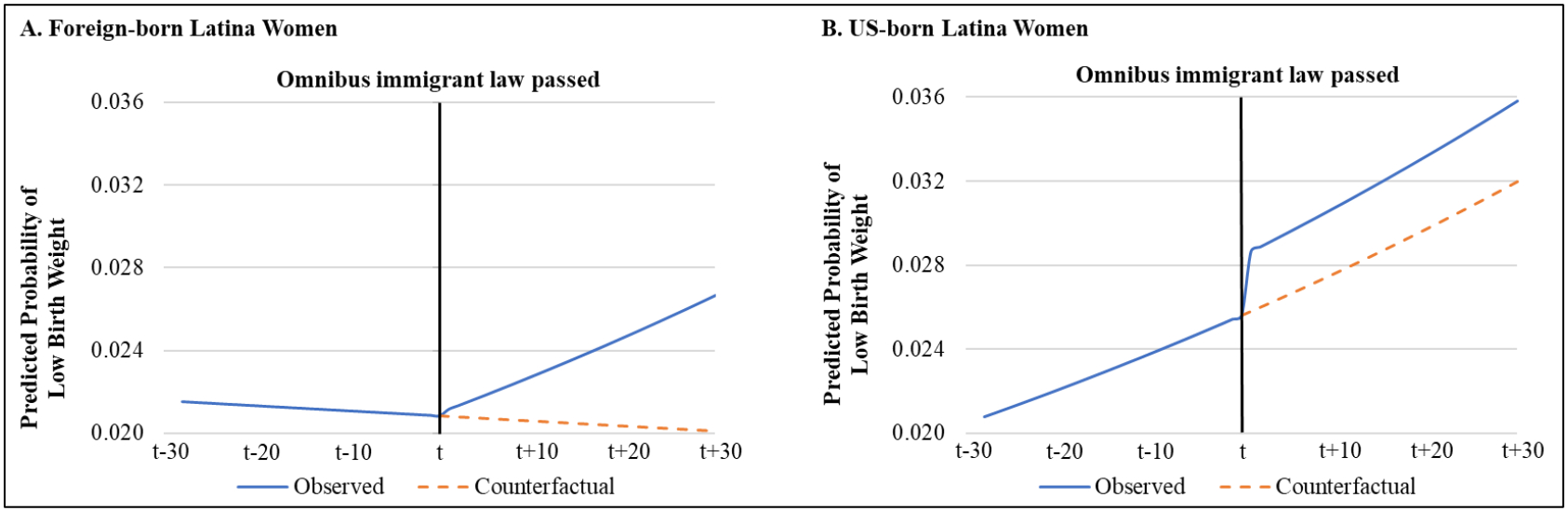
Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included women's national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PTB = Preterm birth; LBW = Low birth weight; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

These findings are further demonstrated in **Figure 7.3**, which shows the predicted probabilities of low birth weight among full term infants born to foreign-born and US-born Latina women before and after passage of an omnibus immigrant law. Among foreign-born Latina women, the predicted probability of low birth weight does not significantly change immediately after passage of the omnibus immigrant law; however, over time, the predicted probability increased from 0.020 during the quarter of policy passage to 0.027 during the final quarter-year of the study period. Further, under the counterfactual with no omnibus immigrant

law passage, the trend in the predicted probability of low birth weight would have continued decreasing over time.

In contrast, among US-born Latina women, there is a significant change in the predicted probability of low birth weight in the quarter-year immediately following policy passage, which increased from 0.026 during to quarter-year of policy passage to 0.029 during the first quarter-year after policy passage. While the post-policy trend did not significantly differ from that during the post-policy period, the figure demonstrates that the predicted probability of low birth weight remains higher than what would have been expected under the counterfactual for the remainder of the study period.

Figure 7.3. Predicted Probability of Low Birth Weight Before and After Passage of a First Omnibus Immigrant Law among Full Term Infants Born to Foreign-born versus US-born Women, 2005-2014



Results of the sub-analyses performed assessing the effects of omnibus immigrant laws on the odds of birth outcomes among infants born to foreign-born women from Mexico and Guatemala, Honduras, or El Salvador, respectively, are shown in **Table 7.6**. These groups are intended to act as the closest approximations of intent-to-treat groups, hypothesized as being the most likely (among this sample) to be targeted and affected by omnibus immigrant laws. I found that the odds of preterm birth increased by an average of 7% among infants born to women from Mexico conceived in the first quarter-year after policy passage compared to those conceived in the previous quarter-year (aOR=1.07; 95% CI: 1.03-1.11). In contrast, the odds of preterm birth decreased by an average of 11% among infants born to women from Guatemala, Honduras, or El Salvador who were conceived in the first quarter-year after policy passage compared to those conceived in the prior quarter-year when the policy was passed (aOR=0.89; 95% CI: 0.80-0.98). Neither group saw a statistically significant change in the post-policy versus pre-policy trend of preterm birth following policy passage.

Table 7.6. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Preterm Birth and Low Birth Weight among Infants born to Foreign-Born Latinas from Mexico versus Guatemala, Honduras, or El Salvador, 2005-2014

		aOR (95% CI)	
	Policy Variables	**Women born in Mexico**	**Women born in Guatemala, Honduras, or El Salvador**
Panel 1: PTB	Time, pre-policy trend	1.00 (0.99-1.00)	1.01 (1.01-1.01)***
	OIL passed	1.07 (1.03-1.11)***	0.89 (0.80-0.98)*
	OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)
Panel 2: LBW	Time, pre-policy trend	1.00 (1.00-1.01)	1.00 (0.99-1.01)
	OIL passed	1.07 (1.02-1.12)*	0.94 (0.84-1.06)
	OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)
Panel 3: LBW among Full Term Infants	Time, pre-policy trend	1.00 (0.99-1.01)	0.99 (0.98-1.01)
	OIL passed	1.02 (0.92-1.12)	0.98 (0.74-1.29)
	OIL, post-policy trend	1.01 (1.00-1.02)	1.01 (0.99-1.02)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included women's age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PTB = Preterm birth; LBW = Low birth weight; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

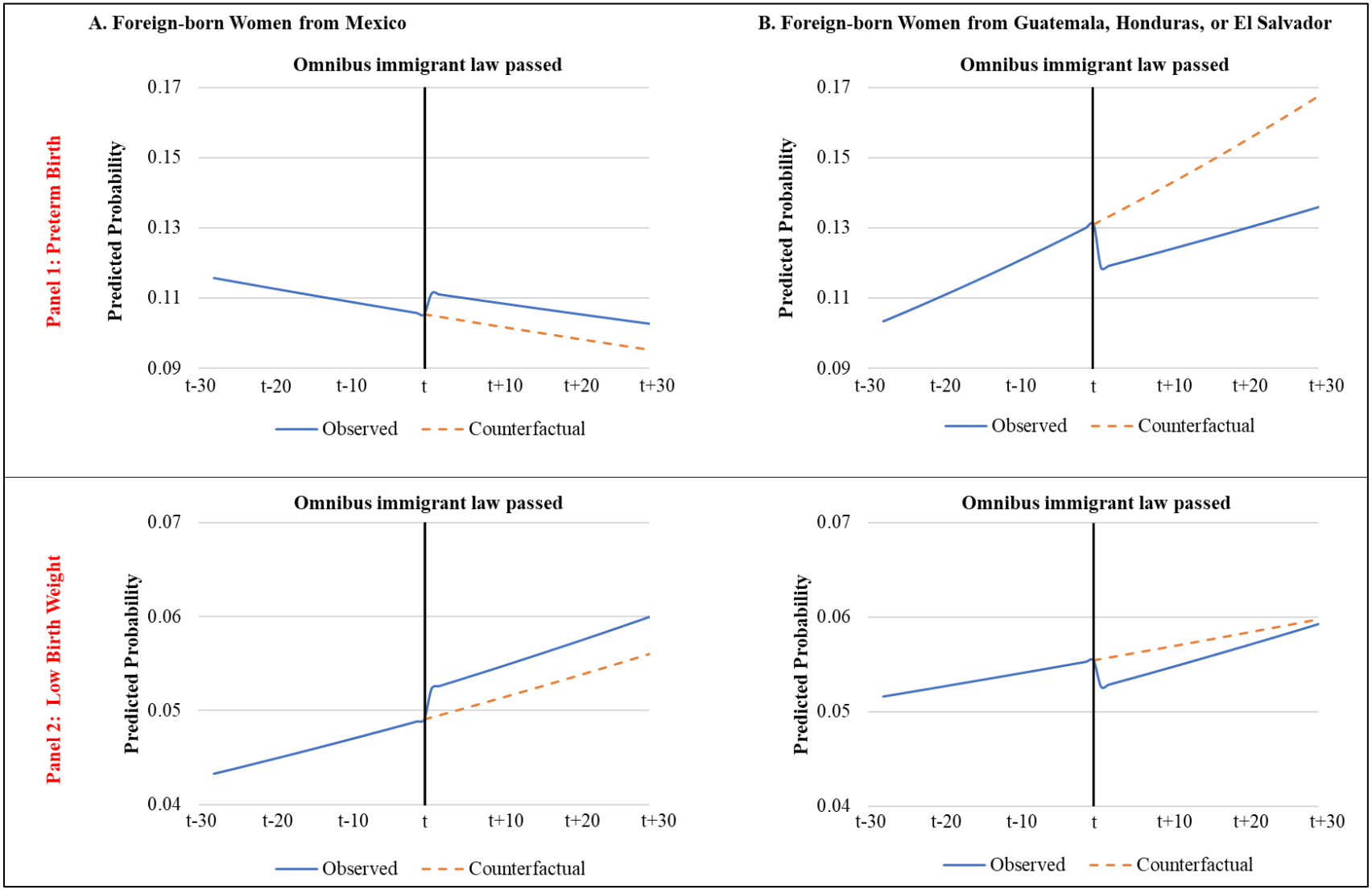
In addition, I found that the odds of low birth weight (among all infants regardless of gestational age at delivery; Panel 2) increased by an average of 7% among infants born to

women from Mexico who were conceived in the quarter-year after policy passage compared to their counterparts conceived in the previous quarter-year (aOR=1.07; 95% CI: 1.02-1.12), whereas no effects of an omnibus immigrant law on low birth weight were detected among infants born to women from Guatemala, Honduras, or El Salvador. Finally, no statistically significant changes in the odds of low birth weight among only those infants born to term were found among either group (Panel 3).

Figure 7.4 further illustrates the significant findings from Table 7.5, depicting changes in the predicted probability of preterm birth (Panel 1) and low birth weight (Panel 2) before and after passage of an omnibus immigrant law among infants born to foreign-born women from Mexico (Column A) and foreign-born women from Guatemala, Honduras, or El Salvador (Column B), respectively. Infants born to foreign-born women from Mexico and from Guatemala, Honduras, or El Salvador experienced changes in the predicted probability of preterm birth in the quarter-year immediately following policy passage, although in different directions. Among infants born to women from Mexico, the predicted probability of preterm birth increased from 0.105 for those conceived in the quarter-year during policy passage to 0.111 for those conceived in the first quarter-year after policy passage. There was no change in the post-policy trend compared to the pre-policy trend; this translated to a predicted probability of preterm birth that remained higher than what would have been expected under the counterfactual for the duration of the study period. In contrast, the predicted probability of preterm birth among infants born to women from Guatemala, Honduras, or El Salvador decreased from 0.131 among those conceived in the quarter-year during policy passage to 0.119 among those conceived in the first quarter-year after policy passage. Again, the post-policy trend in this group did not significantly differ from that observed prior to the passage of an omnibus immigrant law and, as

a result, the predicted probability of preterm birth remained lower than what would have been expected under the counterfactual.

Figure 7.4. Predicted Probability of Preterm Birth and Low Birth Weight Before and After Passage of a First Omnibus Immigrant Law among Infants Born to Foreign-Born Women from Mexico versus Guatemala, Honduras, or El Salvador, 2005-2014



Panel 2 of Figure 7.4 shows changes in the predicted probability of low birth weight among infants born to foreign-born women from Mexico and Guatemala, Honduras, or El Salvador, respectively. Among infants born to women from Mexico, the predicted probability of low birth weight increased from 0.049 among those conceived in the quarter-year that an omnibus immigrant law was passed to 0.052 among those conceived during the first quarter-year after policy passage. Although the results were not statistically significant, the predicted probability of low birth weight among infants born to women from the Northern Triangle countries decreased from 0.055 to 0.053 among those conceived in the quarter-year during policy passage compared to those conceived in the first quarter-year after passage, respectively. The post-policy slope among this group also appears to be increasing at a higher rate than what was observed before the policy was passed, resulting in a predicted probability of low birth weight that is nearly identical across the observed and counterfactual by the final quarter-year of the study period. Further, unlike trends in preterm birth, the trend in low birth weight among both infants born to women from Mexico and those born to women from Guatemala, Honduras, and El Salvador was increasing over time prior to the passage of an omnibus immigrant law.

Sensitivity analyses were performed to assess the robustness of findings for primary analyses and sub-analyses performed for Question 3 and are shown in **Appendix K**. First, this included running models assessing the effects of omnibus immigrant laws on preterm birth and low birth weight among infants born to foreign-born versus US-born Latina women after removing one policy state from the model at a time (**Tables K1 through K3**). A similar procedure was conducted for models assessing the effects of omnibus immigrant laws on preterm birth and low birth weight comparing infants born to foreign-born women from Mexico to those born to foreign-born women from Guatemala, Honduras, or El Salvador (**Tables K4 through**

K6). In general, the results evaluating changes in the odds of preterm birth before and after policy passage across mother's nativity status remained robust to the exclusion of each state from the model (**Table K1**). The findings on changes in the odds of low birth weight among infants born to US-born Latina women remained consistent in sensitivity analyses (i.e., regardless of which state is removed, no statistically significant effects of omnibus immigrant laws on low birth weight are detected); however, the removal of Colorado and Indiana from the model each resulted in a statistically significant increase in the odds of low birth weight among infants born to foreign-born women who conceived in the first quarter-year after an omnibus immigrant law was passed compared to their counterparts who conceived in the quarter-year during policy passage (**Table K2**).

The results of sensitivity analyses testing the robustness of models that assessed the effects of omnibus immigrant laws on low birth weight among full term infants born to foreign- versus US-born women are provided in **Table K3**. In general, the results of sensitivity analyses performed among full term infants born to US-born women remained consistent to those of the main model including all policy states. That is, regardless of which state was removed from the model, there continued to be a statistically significant increase in the odds of low birth weight among full term infants born to US-born women who conceived in the first quarter-year after policy passage compared to their counterparts who conceived in the quarter-year during policy passage. However, while the main model including all policy states indicated a statistically significant difference in the post-policy versus pre-policy trend among full term infants born to foreign-born women, the removal of Alabama, Georgia, or Indiana from the model, respectively, each resulted in a loss of that statistical significance.

Finally, the results of sensitivity analyses testing the robustness of models assessing the effects of omnibus immigrant laws on birth outcomes among infants born to foreign-born women from Mexico compared to foreign-born women from Guatemala, Honduras, or El Salvador, respectively, are presented in **Tables K4 through K6**. Findings on changes to the odds of preterm birth resulting from the passage of an omnibus immigrant law among infants born to foreign-born women from Mexico were robust to the exclusion of each policy state from the model; however, results varied among infants born to foreign-born women from the Northern Triangle countries depending on which state was being removed (**Table K4**). Whereas results from the primary model including all policy states indicated a statistically significant decrease in the odds of preterm birth for those conceived in the first quarter-year after passage compared to those conceived in the quarter-year during policy passage, this effect lost statistical significance when Colorado, Georgia, Indiana, or Oklahoma were removed from the model.

Regardless of which state was being excluded from the model, findings on changes to the odds of low birth weight (regardless of gestational age at delivery) following passage of an omnibus immigrant law were consistent across both groups (**Table K5**). That is, a statistically significant increase in the odds of low birth weight among those conceived in the first quarter-year after policy passage compared to those conceived in the quarter-year during policy passage was detected among infants born to foreign-born women from Mexico, whereas no changes in the odds of low birth weight were detected among infants born to foreign-born women from Guatemala, Honduras, or El Salvador.

Lastly, sensitivity analyses assessing changes in the odds of low birth weight among full term infants born to foreign-born women from Mexico versus those from Northern Triangle countries after passage of an omnibus immigrant law are presented in **Table K6**. Among infants

born foreign-born women from Guatemala, Honduras, or El Salvador, the findings remained robust to the exclusion of each policy state (i.e., no changes due to policy passage were detected among this group). Though, the results of sensitivity analyses assessing the effects of omnibus immigrant law passage on the odds of low birth weight among full term infants born to foreign-born women from Mexico varied. For example, the removal of Arizona, Oklahoma, or Utah from the model, respectively, each resulted in a statistically significant change in the post-policy versus pre-policy trend. Specifically, when removing any of these states, the results indicated that the odds of low birth weight among foreign-born women from Mexico increased by an average of 1% for each quarter-year after an omnibus immigrant law was passed. Moreover, the removal of Colorado from the model resulted in a statistically significant increase in the odds of low birth weight among full term infants conceived in the first quarter-year after an omnibus immigrant law passed compared to those conceived in the quarter-year during policy passage.

Aim 1 Discussion

The overall goal of the first aim of this dissertation study was to examine whether the passage of omnibus immigrant laws resulted in significant increases in adverse birth outcomes and to understand how these effects may differ across nativity status. I found substantial evidence that the passage of omnibus immigrant laws resulted in a significant increase in the odds of preterm birth immediately after policy passage, largely driven by effects among infants born to foreign-born Latinas generally and Mexican-born Latinas specifically. These results were robust to the various sensitivity analyses performed, suggesting that the effects are not the consequence of unmeasured cointerventions occurring around the same time as policy passage

and are generally consistent across states despite variation in individual omnibus immigrant laws passed.

In contrast, evidence on the impacts of omnibus immigrant laws on low birth weight varied. In short, effects were detected only among full term infants born to foreign-born and US-born Latinas, respectively, and among all infants, regardless of gestational age, born to foreign-born women from Mexico. However, sensitivity analyses failed to provide evidence of the robustness of the findings on the impacts of omnibus immigrant laws on low birth weight. The detection of potential effects among US-born Black and White women, in particular, provides cause for concern and suggests the possible presence of cointerventions that may have influenced low birth weight for all groups. One possible cointervention that could bias results includes the US financial crisis from 2007 to 2009, which overlapped with the period during which some states passed their first omnibus immigrant law. While evidence suggests that the Great Recession did indeed increase the risk of low birth weight and preterm birth, the magnitude of effects were largely universal across racial/ethnic groups (Finch et al., 2019). Still, despite controlling for state economic conditions (e.g., poverty, unemployment) in statistical models, impacts of the Great Recession may still explain some of the effects observed in the current study on low birth weight. Model specification errors may also be present. Findings on the effects of omnibus immigrant policies on low birth weight should be interpreted with some caution.

Interpretation of Findings

Preterm Birth. The passage of an omnibus immigrant law resulted in a statistically significant 5% increase in the odds of preterm birth among infants born to all Latina women, regardless of nativity status or national origin. This finding also has clinical significance, as the

increased predicted probability of preterm birth among infants born to Latina women remained higher than what would have been expected under the counterfactual for the duration of the study period, equivalent to more than seven years. Although no studies exist evaluating the relationship between omnibus immigrant laws and preterm birth, these results are consistent with a related body of literature evaluating the effects of restrictive immigrant policies and immigration enforcement on birth outcomes. For example, Stanhope et al. (2019) found an association between restrictive state-level immigrant policy climates and elevated risk of preterm birth among Latina women. Ro and colleagues (2020) found that higher levels of immigration apprehensions conducted by local law enforcement officers was associated with increased odds of preterm birth among Latina women in California. Using quasi-experimental methodology, this dissertation study provides additional evidence of the deleterious effects of restrictive immigrant policy on preterm birth among Latinas.

These findings may reflect increased stress during pregnancy among Latinas following passage of omnibus immigrant laws that produces a culture of fear across Latino communities related to the increased surveillance of Latino and immigrant communities from immigration and law enforcement personnel, possible detection and deportation, and increased discrimination during everyday encounters (Ayón & Becerra, 2013; Kline, 2017; Koralek et al., 2009; Nichols et al., 2018; Szkupinski Quiroga et al., 2014). Evidence has pointed to a candidate biological mechanism linking maternal stress to the risk of preterm delivery via disruptions to critical neuroendocrine, immune, inflammatory, and other biological systems and processes involved in fetal development (Louis & Platt, 2011). These results may also be the result of decreased utilization of prenatal care during pregnancy that subsequently increased the risk of preterm birth. Early initiation of and adequate utilization of prenatal care is essential for monitoring the

health of the mother and fetus and detecting or preventing any issues that put their health at risk. Indeed, adequate prenatal care utilization has consistently been found to lower the risk of adverse birth outcomes (Kotelchuck, 1994b; Louis & Platt, 2011; Partridge et al., 2012). While the effects of omnibus immigrant laws on prenatal care utilization has not yet been evaluated, one study found that increased cooperation between local law enforcement agencies with federal immigration agencies was associated with Latina women seeking prenatal care later and receiving poorer quality care than non-Latina women in the state (Rhodes et al., 2015). There is also growing evidence that omnibus immigrant laws reduce access and utilization of other types of healthcare services among Latinos, regardless of nativity status (Allen, 2018; Beniflah et al., 2013; Toomey et al., 2014; White, Blackburn, et al., 2014; White, Yeager, et al., 2014). Further, there is evidence that Latinos experienced increased discrimination in healthcare settings following the passage of omnibus immigrant laws (White, Yeager, et al., 2014) which can ultimately deter Latinas from future engagement in the healthcare system. Research is needed that evaluates whether the passage of omnibus immigrant laws resulted in reduced access and utilization of prenatal care among Latina women.

I also found that omnibus immigrant laws had long-lasting effects on birth outcomes. The presence of these policies resulted in increased predicted probabilities of preterm birth above the expected values under the counterfactual at every measured time point during the post-policy period, equivalent to roughly 7 years. This suggests that the mechanisms by which omnibus immigrant laws influence preterm birth were operating well beyond the initial period immediately following policy passage. This is significant as other scholars have suggested that the effects of omnibus immigrant laws would be greatest immediately following policy passage and then dissipate over time given their limited implementation (Allen & McNeely, 2017;

Torche & Sirois, 2019). Indeed, Allen and McNeely (2017) found that the passage of an omnibus immigrant law immediately increased the odds of Medicaid/CHIP coverage for Latino children with at least one citizen parent but that this predicted probability returned to pre-policy levels within two quarter-years (or 6 months) of policy passage. Further, an evaluation of Google search trends of the terms "SB1070," "*ilegal*" (illegal), and "*derechos*" (rights), as well as newspaper mentions of "SB1070," in Arizona between April 2009 through December 2014, revealed large spikes in these terms immediately after SB 1070's passage in April 2010 until July 2010 when it was partially enjoined by court order (Torche & Sirois, 2019). However, a reduction in search trends should not be assumed to correspond to an equivalent decrease in the fear, stress, and other impacts produced after omnibus immigrant laws are passed. It is possible that the presence of omnibus immigrant laws acts as a chronic stressor for Latina women before and during conception and gestation, persisting for a period well beyond its initial passage. Both qualitative and quantitative research are needed to better understand how the passage of restrictive immigrant policies, and their continued presence, influences stress, healthcare seeking behaviors, and other potential pathways among Latina women before, during, and after pregnancy.

Low Birth Weight. I found no evidence of omnibus immigrant law passage resulting in statistically significant effects on the odds of low birth weight in analyses among infants born to all Latina women regardless of their nativity status or national origin. This remained true even when limiting the sample to infants born to term to assess the potential impacts of omnibus immigrant laws on low weight due to fetal growth restriction versus low weight resulting from preterm delivery.

These findings are generally inconsistent with related literature that has previously documented a positive association between restrictive immigrant policies and low birth weight; although, these associations were most commonly found among foreign-born Latina women specifically (Amuedo-Dorantes et al., 2021; Novak et al., 2017; Tome et al., 2021; Torche & Sirois, 2019). Thus, results from these analyses may be driven by differences in the effects of omnibus immigrant law passage on low birth weight across nativity status. Relatedly, it is possible that heterogeneity in the national origin of Latina women is driving results, whereby Latina women with national origin from those countries most likely to be the targets of omnibus immigrant legislation experience impacts that are effectively masked in analyses that include all Latinas regardless of national origin. For example, one study found that increased immigration enforcement policies were associated with increased risk of low birth weight among a sample of infants born to foreign-born women from Mexico and Central America (Amuedo-Dorantes et al., 2021), highlighting important intersections between both nativity status and national origin. In fact, several studies find clear differences in the risk of low birth weight across both nativity status and national origin subgroups (Acevedo-Garcia et al., 2007; Montoya-Williams et al., 2020; Singh & Yu, 1996).

Explanations for the variation in findings across preterm birth and low birth weight are unclear. Numerous experimental and quasi-experimental studies provide compelling evidence of the link between acute and chronic stressors near the time of or during pregnancy and an increased risk of both preterm birth and low birth weight, including among infants born to Latina women (Borders et al., 2007; Koning & Ehrenthal, 2019; Novak et al., 2017; Rini et al., 1999; Torche, 2011; Wadhwa et al., 2001). The biologic mechanisms by which stress can influence preterm birth and low birth weight are said to be overlapping yet distinct (Louis & Platt, 2011).

For example, higher amounts of CRH than expected in the placenta during pregnancy, a byproduct of a maternal stress response, is associated with both preterm birth and fetal growth restriction (Louis & Platt, 2011; Thomson, 2013). High stress levels can also increase risk of infection that initiates an inflammatory response and ultimately increases the risk of preterm birth and low birth weight (Christian, 2012; Louis & Platt, 2011). Both outcomes may also be indirectly and differentially influenced by a host of other socioeconomic and psychosocial factors lying on the causal pathway between omnibus immigration legislation and adverse birth outcomes. It is plausible that a distinct biologic and social pathway is responsible for the observed findings in preterm birth that would not translate to an effect on low birth weight among preterm infants or those born to term. It has also been suggested that the threshold by which stress becomes an attributable risk factor for preterm birth versus low birth weight could be different (Lilliecreutz et al., 2016), which could also contribute to this study's findings. In other words, it is possible that the passage of omnibus immigrant laws caused women to experience a stress load that increased risk of preterm birth but that this load did not reach necessary levels, on average, for it to influence fetal growth and thus increase risk of low birth weight due to growth restriction. Similarly, some birth outcomes may be more sensitive to chronic stress while others may be more sensitive to acute stress, especially when acute stressors occur during certain sensitive periods of gestation. Alternatively, model specification errors and the presence of cointerventions may also be responsible for discrepancies in the findings, as previously mentioned.

Differences Across Nativity Status. A significant increase in the odds of preterm birth following passage of an omnibus immigrant law was found among infants born to foreign-born but not US-born Latina women. These findings suggest a lack of spillover effects among US-

born Latinas and are consistent with results from Torche and Sirois (2019) who found evidence that prenatal exposure to the passage of Arizona's SB 1070 was associated with significantly lower birth weight among Latina immigrant women but not their US-born peers. However, these findings contradict other work that found an association between restrictive immigrant policies and adverse birth outcomes even among infants born to US-born Latinas (Novak et al., 2017; Stanhope et al., 2019). Nevertheless, there are a few reasons why spillover effects may not be present in the current study. First, the holding of US citizenship among US-born Latinas offers protection from deportation and additional access to social resources and benefits not readily available to all foreign-born Latinas, especially those with less than 5 years in the US or those with undocumented status, which may act as an important stress buffer. Next, it is possible that US-born Latinos in certain states are more accustomed to racialized exclusion and a general anti-immigrant and anti-Latino climate, whereby the passage of an omnibus immigrant law is less consequential in terms of significantly altering their risk of adverse birth outcomes (Torche & Sirois, 2019). Furthermore, the current study was unable to consider potential protective factors that may influence the extent that omnibus immigrant laws impact birth outcomes, such as healthcare seeking behaviors outside of the formal healthcare system or residing in an ethnic or immigrant enclave that provides greater access to community-based organizations catering to Latino and immigrant populations. While foreign-born Latinas could arguably have access to these same protective conditions, their buffering effect among US-born Latinas may have been enough to completely counteract the potential harmful effects of the passage of omnibus immigrant laws (versus what may potentially only be a partial buffering effect among foreign-born Latinas).

Because omnibus immigrant laws as written most directly target undocumented immigrants, the findings related to their impacts on the odds of preterm birth among foreign-born women may be a conservative estimate of the potential effects among those with undocumented status. Unfortunately, information on mother's citizenship and documentation status is not available in birth certificate data, and there continues to be a critical need to evaluate the effects of restrictive immigrant policies on adverse birth outcomes across both nativity and documentation status. Still, a sub-analysis among infants born to foreign-born women from Mexico and Guatemala, Honduras, or El Salvador, respectively, may provide the best approximation of these potential effects with the data available given that these groups have the highest proportion of foreign-born individuals living in the US with undocumented status. I found a statistically significant increase in the odds of preterm birth in the first quarter-year after policy passage among infants born to foreign-born women from Mexico, but a statistically significant decrease in the odds of preterm birth immediately after policy passage among infants born to foreign-born women from the Northern Triangle countries. I also found a statistically significant increase in the odds of low birth weight among infants born to foreign-born women from Mexico, with no effects detected among infants born to women from Guatemala, Honduras, or El Salvador. The passage of omnibus immigrant laws was accompanied by harmful political and media messaging that focused heavily on "illegal" Mexican migrants and the US-Mexico border. This messaging may have translated to an even higher concentration of fear and stress among Mexican communities and may explain findings among infants born to Mexican-born women, specifically. Further research is needed to help understand potential mechanisms by which omnibus immigrant laws would result in a decreased odds of preterm birth among infants born to foreign-born women from Northern Triangle countries, despite this group generally

having a higher prevalence of undocumented status. Nevertheless, researchers have posited that the effects of restrictive immigrant policies may differ across intersections of nativity status, national origin, and documentation status due to factors related to differences in histories of migration and contexts of reception (Philbin et al., 2018). These findings provide early evidence of such differences and emphasize the need for additional research that disaggregates across various identities of the Latino diaspora.

Conclusions

Infants born to Latina women are more likely to be born preterm and low weight than infants born to White women. Researchers have argued that restrictive immigrant policies, including omnibus immigrant laws, constitute an important part of the social environment that may influence disparities in health outcomes, including those observed in birth outcomes. Using population-based data and a quasi-experimental design, this study was the first to evaluate the effects of all omnibus immigrant laws passed across the US states on adverse birth outcomes among infants born to Latina women, with a focus on potential differences across nativity status. Although findings on the effects of omnibus immigrant laws on low birth weight were mixed, I find compelling evidence that omnibus immigrant laws resulted in a significant increase in the odds of preterm birth among infants born to foreign-born Latina women, especially those women born in Mexico. These increases continued for the duration of the study period, remaining higher than what would have been expected if the policies had never been passed. Not only does this study add to a growing literature documenting the harmful effects of restrictive immigrant policies on population health outcomes among Latinos in the US, but it also provides additional evidence for the influence of social environmental factors as drivers of disparities in birth outcomes among foreign-born Latinas compared to White women. Further, the study has

important implications for policy and programming, suggesting the need for interventions and resources aimed at improving birth outcomes among Latinas that specifically target foreign-born Latinas, Mexican-born Latinas, and Mexican and Latino immigrant communities at large. These may be especially warranted in states with immigrant policy climates that are decidedly restrictive.

CHAPTER 8. AIM 2 RESULTS

The purpose of Aim 2 was to determine the effects of omnibus immigrant laws on the odds of late entry into prenatal care (Question 1) and inadequate prenatal care utilization (Question 2), respectively, among Latina women in the US. In addition, Aim 2 sought to understand the extent to which these effects were moderated by mother's nativity status (Question 3). I hypothesized that the passage of omnibus immigrant laws would result in a statistically significant increase in the odds of late entry into prenatal care and inadequate prenatal care utilization, respectively, among Latina women. I also hypothesized that these effects would be moderated by mother's nativity status such that the effects were greatest for infants born to foreign-born versus US-born Latina women.

Question 1. What are the effects of omnibus immigrant laws on the odds of late entry into prenatal care among Latina women?

The results of the model evaluating the effects of passing an omnibus immigrant law on the odds of late entry into prenatal care among Latina women are provided in **Table 8.1**. No statistically significant changes were detected in either the level or trend of late entry into prenatal care following the passage of an omnibus immigrant law.

Table 8.1. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Late Entry into Prenatal Care among Infants Born to Latina Women, 2005-2014

Policy Variables	**Late Entry into PNC** aOR (95% CI)
Time, pre-policy trend	0.98 (0.98-0.99)***
OIL passed	0.89 (0.73-1.07)
OIL, post-policy trend	1.00 (0.99-1.01)

Notes: Adjusted odds ratio (95% confidence interval) shown. Model utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level

covariates. Individual-level covariates included women's nativity status, national origin, age, and marital status, father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; p<0.001***

Sensitivity analyses were completed to assess the robustness of findings for Question 1 and are presented in **Appendix L**. The findings were robust to the exclusion of each policy state from the model at a time (**Table L1**). Further, no statistically significant changes were detected in either the level or trend of late entry into prenatal care following the passage of an omnibus immigrant law among US-born Black women nor US-born White women, respectively (**Table L2**).

Question 2. What are the effects of omnibus immigrant laws on the odds of inadequate prenatal care utilization among Latina women?

The results of the model evaluating the effects of passing an omnibus immigrant law on the odds of inadequate utilization of prenatal care among Latina women are provided in **Table 8.2**. The odds of inadequate prenatal care utilization were 20% higher among Latina women who conceived in the first quarter-year after passage of an omnibus immigrant law compared those who conceived three quarter-years (or nine months) before policy passage, although the association was only approaching statistical significance with a p-value=0.06 (aOR=1.20; 95% CI: 0.99-1.45). No statistically significant change was detected in the trend of the odds of inadequate prenatal care utilization over time.

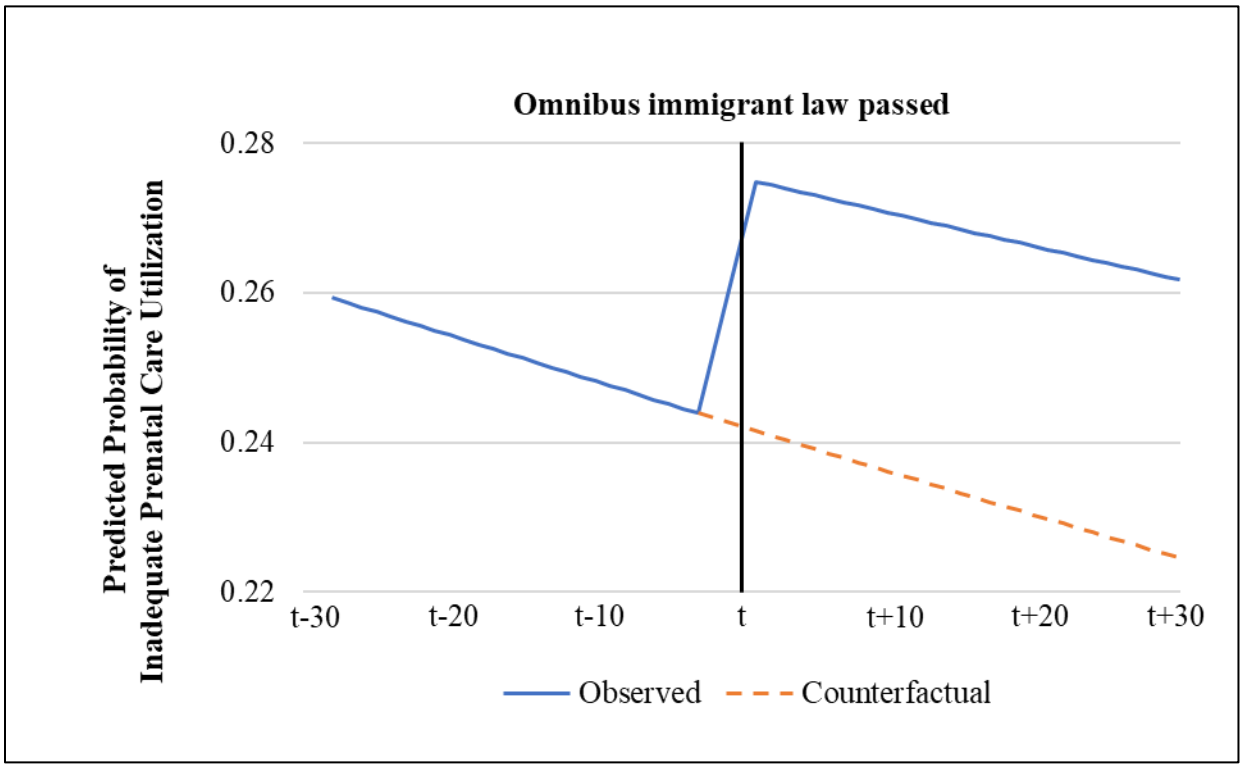
Table 8.2. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Inadequate Prenatal Care Utilization among Latina Women, 2005-2014

Policy Variables	**Inadequate Utilization of PNC** aOR (95% CI)
Time, pre-policy trend	1.00 (0.99-1.01)
OIL passed	1.20 (0.99-1.45)
OIL, post-policy trend	1.00 (0.99-1.02)

Notes: Adjusted odds ratio (95% confidence interval) shown. Model utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included women's nativity status, national origin, age, and marital status, father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; p<0.001***

These results are further illustrated in **Figure 8.1,** depicting the predicted probability of inadequate prenatal care utilization before and after passage of an omnibus immigrant law. The predicted probability of inadequate prenatal care utilization rose from 0.24 among women who conceived three quarter-years (or nine months) before passage of an omnibus immigrant law to 0.28 among women who conceived in the first quarter-year after the law was passed. Although the trend of the post-policy slope did not significantly differ from the trend in the pre-policy slope, the figure demonstrates how the predicted probability of inadequate prenatal care utilization remains higher during the post-policy period than what would have been expected under the counterfactual for the duration of the study period.

Figure 8.1. Predicted Probability of Inadequate Prenatal Care Utilization Before and After the Passage of an Omnibus Immigrant Law among Latina Women, 2005-2014



Sensitivity analyses were completed to assess the robustness of findings for Question 2 and are shown in **Appendix M**. First, the model failed robustness checks related to the exclusion of one state from the model at a time (**Table M1**), as the exclusion of Oklahoma, South Carolina, and Utah, respectively, resulted in the detection of a statistically significant level change in the odds of inadequate prenatal care utilization. Specifically, it was found that the odds of inadequate prenatal care utilization increased by 22 to 24% (depending on which state was removed from the model) among Latina women who conceived in the first quarter-year after passage of an omnibus immigrant law compared those who conceived three quarter-years (or nine months) before policy passage. Finally, no statistically significant effects of the passage of omnibus

immigrant laws on inadequate prenatal care utilization were detected among US-born Black women or US-born White women, respectively (**Table M2**).

Question 3. Are the effects of omnibus immigrant laws on late entry into care and inadequate prenatal care utilization, respectively, moderated by women's nativity status?

Table 8.3 provides results of models assessing the effects of omnibus immigrant laws on the adjusted odds ratios of late entry into prenatal care (Panel 1) and inadequate prenatal care utilization (Panel 2) among foreign-born versus US-born Latinas. Regardless of nativity status, no statistically significant effects of the passage of an omnibus immigrant law on the odds of late entry into prenatal care were found. When assessing the effects of omnibus immigrant laws on inadequate utilization of prenatal care, it was found that the odds of inadequate prenatal care had increased by 17% among foreign-born Latinas who conceived in the first quarter-year after passage of an omnibus immigrant law compared to foreign-born Latinas who conceived three quarter-years (or nine months) before policy passage, although the association was only approaching statistical significance with a p-value=0.07 (aOR=1.17; 95% CI: 0.98-1.39). The odds of inadequate prenatal care utilization were also statistically significantly higher among US-born Latinas who conceived in the first quarter-year after passage of an omnibus immigrant law compared to their counterparts who conceived three quarter-years (or nine months) before policy passage (a0R=1.29; 95% CI: 1.03-1.62).

Table 8.3. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratios of Late Entry into Prenatal Care and Inadequate Prenatal Care Utilization among Foreign- versus US-born Latina Women, 2005-2014

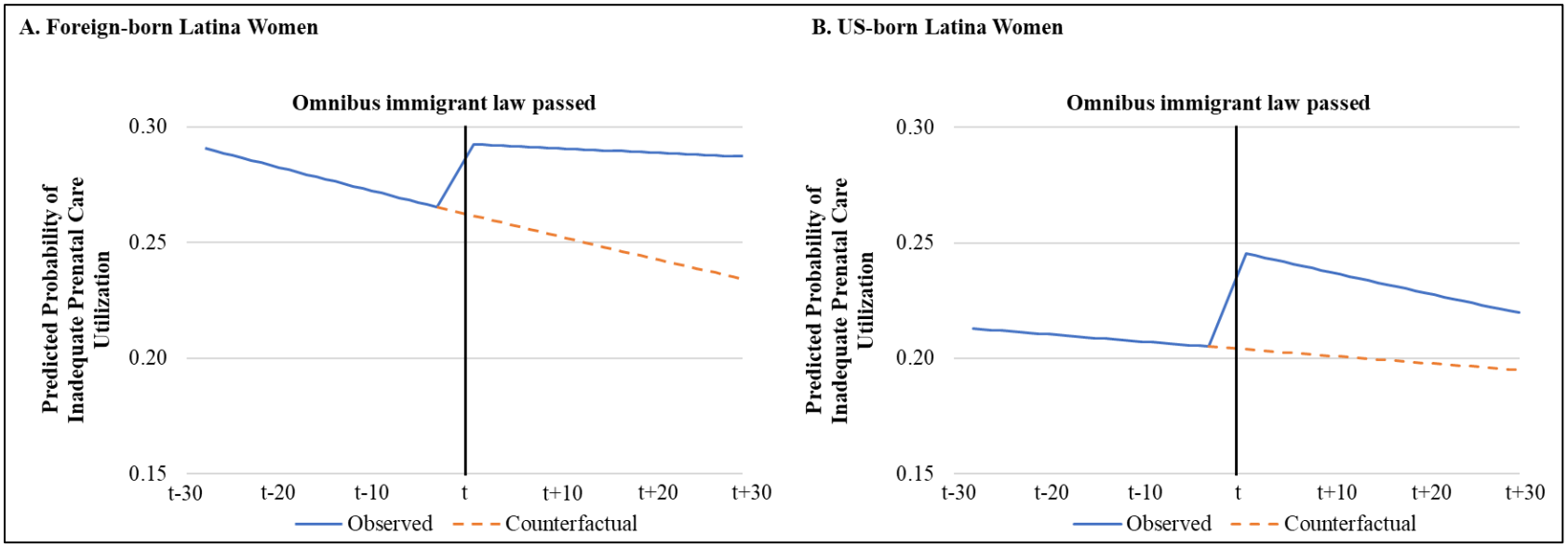
		aOR (95% CI)	
	Policy Variables	**Foreign-born**	**US-born**
Panel 1: Late Entry into PNC	Time, pre-policy trend	0.98 (0.97-0.99)**	0.99 (0.98-0.99)***
	OIL passed	0.89 (0.71-1.11)	0.91 (0.77-1.07)
	OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)
Panel 2: Inadequate Utilization of PNC	Time, pre-policy trend	0.99 (0.98-1.01)	1.00 (0.99-1.00)
	OIL passed	1.17 (0.98-1.39)	1.29 (1.03-1.62)*
	OIL, post-policy trend	1.00 (0.99-1.02)	1.00 (0.99-1.00)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included women's national origin, age, and marital status, father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

These effects are further illustrated in **Figure 8.2**. Among foreign-born women, the predicted probability of inadequate prenatal care utilization rose from approximately 0.26 among those who conceived three quarter-years (or nine months) before passage of an omnibus immigrant law to 0.29 among their counterparts who conceived in the first quarter-year after the law was passed. Similarly, the predicted probability of inadequate prenatal care utilization increased from approximately 0.20 among US-born Latinas who conceived nine months before an omnibus immigrant law was passed to 0.25 among US-born Latinas who conceived in the first

quarter-year after policy passage. For both groups, the figure also demonstrates how the predicted probability of inadequate prenatal care utilization remained higher during the post-policy period than what would have been expected under the counterfactual.

Figure 8.2. Predicted Probability of Inadequate Prenatal Care Utilization Before and After the Passage of an Omnibus Immigrant Law among Foreign-born and US-born Latina Women, 2005-2014



Results of the sub-analyses performed assessing the effects of omnibus immigrant laws on the odds of prenatal care utilization indicators among foreign-born women from Mexico and Guatemala, Honduras, or El Salvador are shown in **Table 8.4**. Panel 1 shows results of models assessing the effect of omnibus immigrant laws on the odds of late entry into prenatal care, where I found that the passage of the policy did not result in any statistically significant changes in the odds of late entry into prenatal care for either group of foreign-born Latina women. Further, the results in Panel 2 indicate that the odds of inadequate prenatal utilization increased by 16% among Mexican-born women who conceived in the first quarter-year after policy passage compared to their counterparts who conceived three quarter-years (or nine months) prior to the policy passage, although this association was only approaching statistical significance with a p-value of 0.07 (aOR=1.16; 95% CI: 0.99-1.39). There was no evidence of a similar effect of the passage of an omnibus immigrant law on the odds of inadequate prenatal care utilization among women born in the Northern Triangle countries.

Table 8.4. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Late Entry into Prenatal Care and Inadequate Prenatal Care Utilization among Foreign-Born Women from Mexico versus Guatemala, Honduras, or El Salvador, 2005-2014

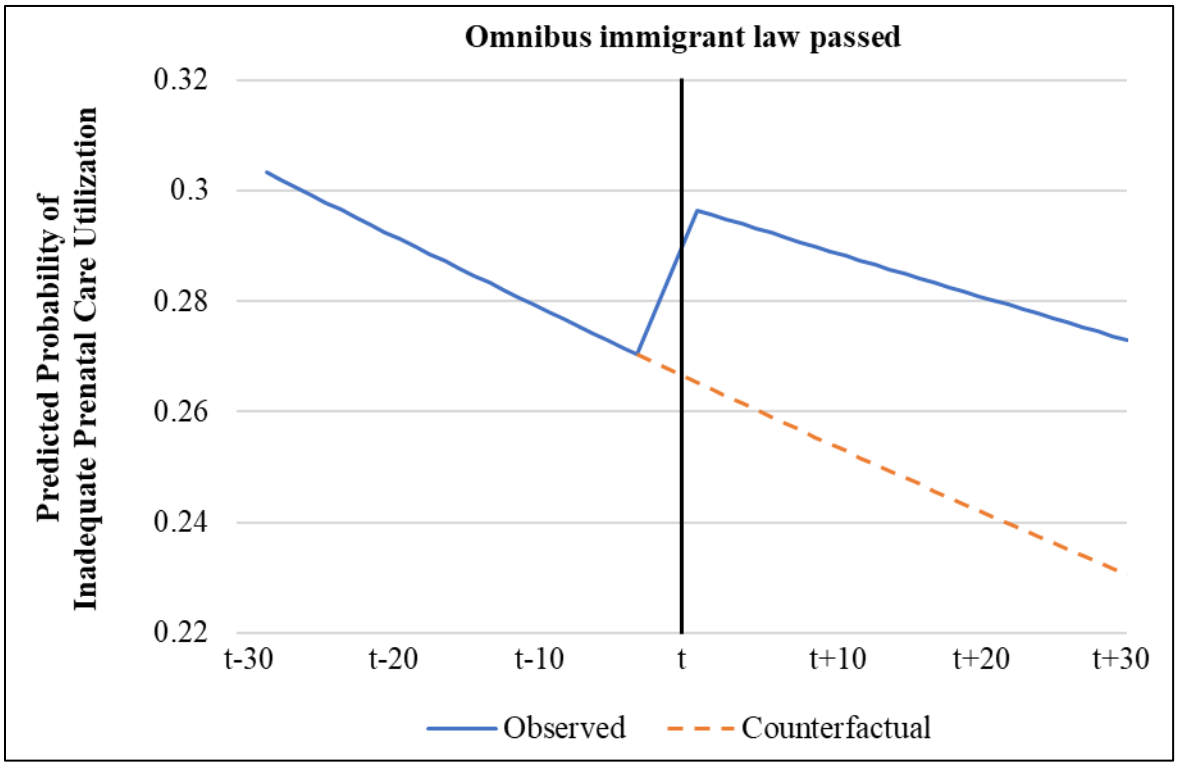
		aOR (95% CI)	
	Policy Variables	**Women born in Mexico**	**Women born in Guatemala, Honduras, or El Salvador**
Panel 1: Late Entry into PNC	Time, pre-policy trend	0.98 (0.97-0.99)***	1.00 (0.98-1.01)
	OIL passed	0.89 (0.72-1.11)	0.98 (0.69-1.39)
	OIL, post-policy trend	1.00 (0.99-1.01)	1.01 (0.99-1.02)
Panel 2: Inadequate Utilization of PNC	Time, pre-policy trend	0.99 (0.98-1.01)	1.00 (0.99-1.01)
	OIL passed	1.16 (0.99-1.39)	1.18 (0.92-1.53)
	OIL, post-policy trend	1.00 (0.98-1.02)	1.00 (0.98-1.03)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included women's age and marital status, father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

The effects of omnibus immigrant law passage on inadequate prenatal care utilization among foreign-born women from Mexico are further illustrated in **Figure 8.3**. The predicted probability of inadequate prenatal care utilization increased from about 0.27 among Mexican-born Latinas who conceived in the first quarter-year after an omnibus immigrant law was passed to 0.30 among their counterparts who conceived three quarter-years before the law was passed. Although there was no statistically significant difference in the pre-policy trend compared to the

post-policy trend, the figure reveals how the predicted probability of inadequate prenatal care utilization remained higher during the post-policy period than what would have been expected under the counterfactual for the duration of the study period.

Figure 8.3. Predicted Probability of Inadequate Prenatal Care Utilization Before and After the Passage of an Omnibus Immigrant Law among Foreign-born Women from Mexico, 2005-2014



Sensitivity analyses were performed to assess the robustness of findings for primary and sub-analyses performed for Question 3 and are shown in **Appendix N**. First, this included running models assessing the effects of omnibus immigrant laws on each of the prenatal care utilization indicators among foreign-born versus US-born Latina women when removing one policy state from the model at a time (**Tables N1 and N2** for late entry into prenatal care and inadequate prenatal care utilization, respectively). Then, a similar procedure was conducted for models assessing the effects of omnibus immigrant laws on each of the prenatal care utilization

indicators among foreign-born women from Mexico and foreign-born Latina women from Guatemala, Honduras, or El Salvador (**Tables N3 and N4** for late entry into prenatal care and inadequate prenatal care utilization, respectively). Again, this procedure included the removal of one state from the model at a time.

The results evaluating changes in the odds of late entry into prenatal care before and after passage of a first omnibus immigrant law across mother's nativity status remained robust to the exclusion of each state from the model at a time (**Table N1**). In other words, regardless of which state was left out of the model, I failed to find any statistically significant change in the odds of late entry into prenatal care following passage of an omnibus immigrant law among both foreign- and US-born Latina women. However, the models evaluating changes in the odds of inadequate prenatal care utilization among both foreign-born and US-born women appeared sensitive to the removal of certain states from the model (**Table N2**). Among foreign-born women, the removal of Oklahoma, South Carolina, and Utah from the model, respectively, resulted in the detection of a statistically significant change in the level of the odds of inadequate prenatal care utilization. Specifically, it was found that the odds of inadequate prenatal care utilization were 19 to 21% higher (depending on which state was removed from the model) among Latina women who conceived in the first quarter-year after passage of an omnibus immigrant law compared those who conceived three quarter-years (or nine months) before policy passage. Furthermore, the removal of Colorado and Missouri from the model, respectively, each resulted in the loss of a statistically significant effect of omnibus immigrant laws on the odds of inadequate prenatal care utilization among US-born Latinas.

Sub-analysis models assessing the effects of omnibus immigrant laws on late entry into prenatal care among foreign-born Latinas from Mexico and Northern Triangle countries,

respectively, remained robust to the exclusion of each policy state (**Table N3**). In other words, I failed to find any evidence of an effect of omnibus immigrant laws on late entry into prenatal care regardless of which policy state was excluded from the model. However, I found that models assessing the effects of omnibus immigrant laws on inadequate prenatal care utilization among both groups of foreign-born Latinas were sensitive to the exclusion of particular policy states (**Table N4**). Among foreign-born Latinas from Mexico, the removal of Oklahoma, South Carolina, and Utah from the model each resulted in the detection of a statistically significant change in the odds of inadequate prenatal care after policy passage. Explicitly, it was found that the odds of inadequate prenatal care utilization were 19 to 21% higher (depending on which state was removed from the model) among Mexican-born women who conceived in the first quarter-year after passage of an omnibus immigrant law compared to their counterparts who conceived three quarter-years (or nine months) before policy passage. Moreover, among Latinas born in Guatemala, Honduras, or El Salvador, the removal of South Carolina from the model resulted in a highly statistically significant level change in the odds of inadequate prenatal care utilization; the odds of inadequate prenatal care utilization was 34% among Latinas born in Northern Triangles countries who conceived in the first quarter-year after an omnibus immigrant law was passed compared to those who conceived nine months previously before the policy was passed (aOR=1.34; 95% CI: 1.24-1.44).

Aim 2 Discussion

The overall goal of the second aim of this dissertation research was to determine the effects of omnibus immigrant laws on prenatal care indicators and investigate whether there were differences in these effects across women's nativity status. I found no evidence that the passage

of omnibus immigrant laws resulted in any effect on late entry into prenatal care among Latina women generally, nor among foreign-born or US-born Latina women specifically. When further restricting models to foreign-born women from Mexico versus those from Guatemala, Honduras, or El Salvador, I still found that the passage of omnibus immigrant laws resulted in no changes to the odds of late entry into prenatal care among either group.

In contrast, my findings provide some evidence that the passage of omnibus immigrant laws resulted in an immediate increase in the odds of inadequate prenatal care utilization, a measure that captures both the timing of prenatal care initiation as well as the number of visits attended, among both foreign-born and US-born Latina women. However, sensitivity analyses suggest that these effects did not occur uniformly across states. In other words, the models were sensitive to the removal of specific states, indicating that the extent that omnibus immigrant laws influence inadequate prenatal care utilization may depend upon the specific provisions included in the law and other aspects of the state landscape. Further, these findings may also suggest that omnibus immigrant laws are more likely to impact the total number of prenatal care visits attended during pregnancy than the timing of prenatal care initiation.

Interpretation of Findings

Late Entry into Prenatal Care. I found no evidence that the passage of an omnibus immigrant law resulted in any change in the odds of late entry into prenatal care among foreign- nor US-born Latina women. Latinas in these states experienced extremely poor prenatal care utilization even before the passage of a first omnibus immigrant law. For example, more than half (52%) of all Latina women who conceived prior to the passage of an omnibus immigrant law had entered prenatal care after the first trimester, although this average decreased to 39% among those who conceived after the passage of the law (Chapter 6, Table 6.3). This decrease

may reflect potential selection bias in these analyses due to out-migration among those most vulnerable to the negative impacts of omnibus immigrant legislation after passage of the law which could potentially explain the null findings. Indeed, there is some evidence of an association between the passage of an omnibus immigrant law and the out-migration of Latinos to states with less restrictive immigrant policy climates (Bohn et al., 2014; Ellis et al., 2014, 2016).

However, even among white women, where sensitivity analyses revealed no effect of omnibus immigrant laws on late entry into prenatal care as expected, there was a decrease in the average proportion of those entering prenatal care after the first trimester comparing those who conceived before versus after the passage of an omnibus immigrant law (32% vs. 22%, respectively). This may suggest the presence of a general downward trend in the likelihood of late entry into prenatal care over time among all women that was not substantially interrupted by the passage of omnibus immigrant legislation. Moreover, for Latina women, it is possible that the awareness of the importance of initiating prenatal care early in the gestational period outweighed the potential risks or fears associated with the passage of an omnibus immigrant law that would have deterred healthcare utilization (e.g., possible detection and deportation while traveling to or from a healthcare facility, anticipated discrimination from health care professionals).

Inadequate Prenatal Care Utilization. The findings provide some evidence that the passage of omnibus immigrant laws resulted in an immediate increase in the odds of inadequate prenatal care utilization among both foreign-born and US-born Latina women but, importantly, these effects were not consistent across all policy states. For example, among foreign-born Latina women, it was found that the removal of Oklahoma, South Carolina, and Utah from the

model, respectively, each resulted in the detection of a statistically significant increase in the odds of inadequate prenatal care utilization comparing those women who conceived three quarter-years (nine months) before policy passage to those who conceived in the first quarter-year after policy passage. When any other state was removed from the model, there was no statistically significant association detected. This suggests that the effects of omnibus immigrant laws on inadequate prenatal care utilization among foreign-born Latinas may have been suppressed by the inclusion of Oklahoma, South Carolina, and Utah in the primary model (i.e., effects may be present in the other policy states included). In contrast, among US-born Latinas, sensitivity analyses revealed that the exclusion of Colorado and Missouri from the model, respectively, each resulted in a loss of statistical significance, suggesting that the inclusion of these two states in the model were driving findings and that prenatal care utilization among US-born Latinas was particularly affected by the omnibus immigrant laws passed in these two states. Thus, it cannot be assumed that the passage of omnibus immigrant laws will result in consistent effects across all contexts for all outcomes. As most omnibus immigrant laws share commonalities in the domains they target (e.g., enforcement, employment), they were all assumed to be the same for the purposes of this dissertation research; however, in reality, they differ in the total number, type, and severity of provisions included (see **Table 2.1** and **Appendix B**). Certain provisions, or even a specific mix of provisions, may be particularly harmful to Latinas' prenatal care access and utilization than others. For example, omnibus immigrant laws that include provisions which reinforce federal regulations around immigrants' eligibility for public benefits and/or require state health employees to report suspected undocumented immigrants to immigration enforcement authorities can compound the many difficulties already experienced by immigrants in accessing safe, patient-centered healthcare. There is evidence that

such provisions created confusion among healthcare workers and patients about what documentation is required to prove documented status in the US and who is eligible for benefits (White, Yeager, et al., 2014). Further, laws that included provisions that restricted immigrants' access to driver's licenses could also have implications for healthcare access among Latinos. The fear of being stopped and questioned by law enforcement officials can deter Latino immigrants, even those with valid driver's licenses, from driving unless absolutely necessary (Hardy et al., 2012; Rhodes et al., 2015). In one study, immigrants in Georgia reported delaying or avoiding healthcare services altogether because the act of driving to a health center put them at risk of being stopped, arrested, and deported (Kline, 2017).

Previous literature has demonstrated that the impacts of immigration laws and enforcement activities on enrollment in public health benefits can differ depending on characteristics of the local community (Allen, 2018; Watson, 2014). Thus, it is also possible that differences in the effects of omnibus immigrant laws on prenatal care utilization across states are attributable to other factors of the local context that can either exacerbate or protect Latinas from the effects of the laws, such as the informal health care landscape and/or the presence of established Latino and/or immigrant enclaves. Pregnant Latinas have been shown to utilize an informal system of prenatal care, comprised of family, friends, and community-based outreach workers known as *promotoras*, that can provide maternity support in a manner that feels safer for many women than going through formal healthcare settings and act as a critical stress-buffer (Korinek & Smith, 2011; McGlade et al., 2004). Further, especially for foreign-born Latina women, living in an area with high concentrations of Latinos may increase their likelihood of finding community-based healthcare services that are affordable and cater specifically to Latino and/or immigrant communities, including undocumented immigrants (Korinek & Smith, 2011).

Alternatively, living in a predominantly Latino or immigrant community could expose residents to greater policing and immigration enforcement activities and thus, increase fears of possible detection and deportation and experiences of discrimination that could have downstream effects of healthcare utilization. More research is needed to understand how various factors of the state and local context interact with the passage of restrictive state-level immigrant policies to produce different health effects across the Latino diaspora.

Finally, the results of sub-analyses suggest that the observed effects of omnibus immigrant laws on inadequate prenatal care utilization among foreign-born Latina women were likely driven by effects among those born in Mexico, specifically. Political and media rhetoric surrounding the passage of omnibus immigrant laws focused heavily on Mexican immigrants and the US-Mexico border. This could have translated to Mexican-born women feeling particularly vulnerable to such policies, regardless of their documentation status. Again, a fear of encountering law enforcement while driving to and from appointments or a fear of being reported to immigration officials by healthcare staff may have caused women to limit the number of prenatal visits they attended. Moreover, Mexican-born women may have experienced a period of heightened anticipated or enacted stigma and discrimination from healthcare staff after the passage of omnibus immigrant legislation that could have also affected their level of engagement in the healthcare system. Indeed, there is evidence that that Latinos experienced increased discrimination from healthcare workers following passage of omnibus immigrant laws (White, Yeager, et al., 2014).

Conclusions

Latina women consistently experience poorer prenatal care utilization than their white counterparts. Researchers have argued that restrictive state-level immigrant policies may

contribute to these disparities. A number of studies show that omnibus immigrant laws reduced healthcare utilization among Latinos (Allen, 2018; Beniflah et al., 2013; Toomey et al., 2014; White, Blackburn, et al., 2014; White, Yeager, et al., 2014); however, to my knowledge, no study has evaluated the impact of omnibus immigrant laws on prenatal care utilization specifically.

Using population-based data and a quasi-experimental design, this dissertation research adds to the literature by providing early evidence that the passage of omnibus immigrant laws resulted in an immediate increase in the odds of inadequate prenatal care utilization among both foreign- and US-born Latina women. These results are consistent with related research that has found an association between immigration enforcement activities and reduced healthcare utilization among Latina women and immigrant women generally (Rhodes et al., 2015; Tome et al., 2021).

In addition to capturing late initiation of prenatal care, the inadequate prenatal care utilization measure also captures whether a woman attended at least 50% of recommended prenatal care visits. Although it was found that omnibus immigrant laws had no effect on late entry into prenatal care, the findings of this dissertation research related to inadequate prenatal care utilization suggest that omnibus immigrant laws may have had a particularly salient effect on the total number of prenatal care visits attended. This can have critical implications for the consistent monitoring of the woman and fetus throughout the gestational period, hampering the ability to prevent, detect, and treat complications. In turn, this can increase the risk of poor maternal and newborn health outcomes, including preterm birth and low birth weight, as well as maternal morbidity and mortality. Policies and programs are needed to ensure the early and

consistent utilization of prenatal care among Latina women, particularly in states with a decidedly restrictive immigrant policy agenda.

CHAPTER 9. AIM 3 RESULTS

The purpose of Aim 3 was to determine if the effects of omnibus immigrant laws on prenatal care indicators (Question 1) and birth outcomes (Question 2) were moderated by national origin, comparing the effects across women of Mexican, Puerto Rican, and Cuban origin or descent. In these analyses, nativity status (i.e., foreign vs. US-born) is treated as a control variable; thus, each national origin subgroup includes those born in the respective country as well as those born in the US who identify as being of Mexican, Puerto Rican, or Cuban descent, respectively. I hypothesized that the effects of passage of an omnibus immigrant law on the odds of late entry into prenatal care, inadequate prenatal care utilization, preterm birth, and low birth weight, respectively, were moderated by mother's national origin or descent such that the effects were greatest for women of Mexican versus Puerto Rican or Cuban origin or descent.

Question 1: Are the effects of omnibus immigrant laws on late entry into prenatal care and inadequate prenatal care utilization, respectively, moderated by mother's national origin?

Table 9.1 shows the results of models assessing the effects of omnibus immigrant laws on the adjusted odds ratios of late entry into prenatal care (Panel 1) and inadequate prenatal care (Panel 2) across women of Mexican, Puerto Rican, and Cuban origin or descent, respectively. The findings indicate that the effects of omnibus immigrant laws on prenatal care indicators were not consistent across the three different national origin subgroups.

Table 9.1. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Late Entry into Prenatal Care and Inadequate Prenatal Care Utilization among Latina Women of Mexican, Puerto Rican, and Cuban Origin or Descent, 2005-2014

		aOR (95% CI)		
	Policy Variables	**Mexican**	**Puerto Rican**	**Cuban**
Panel 1: Late Entry into PNC	Time, pre-policy trend	0.98 (0.98-0.99)***	0.99 (0.98-1.00)*	0.99 (0.97-1.01)
	OIL passed	0.88 (0.73-1.06)	1.01 (0.88-1.16)	0.79 (0.65-0.97)*
	OIL, post-policy trend	1.00 (0.99-1.01)	0.99 (0.98-0.99)***	1.00 (0.98-1.02)
Panel 2: Inadequate Utilization of PNC	Time, pre-policy trend	1.00 (0.99-1.01)	0.99 (0.98-1.00)	0.99 (0.99-1.00)
	OIL passed	1.16 (0.97-1.40)	1.33 (0.96-1.84)	0.92 (0.65-1.28)
	OIL, post-policy trend	1.00 (0.99-1.02)	1.00 (0.99-1.01)	1.01 (1.00-1.02)*

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included women's nativity status, age, and marital status, father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

No statistically significant effects of omnibus immigrant law passage on either indicator of prenatal care utilization were detected among women of Mexican origin or descent. Among Puerto Rican women, there was no statistically significant change in the odds of late entry into prenatal care utilization comparing those who conceived three quarter-years (or nine months) before policy passage versus those who conceived in the first quarter-year after passage of an omnibus immigrant law; however, there was a statistically significant change in the post- versus pre-policy trend among this group. Specifically, the odds of late entry into prenatal care

utilization among women of Puerto Rican origin or descent decreased by an average of 1% each quarter-year after policy passage (aOR=0.99; 95% CI: 0.98-0.99). Further, it was found that the odds of inadequate prenatal care utilization had increased by 33% among Puerto Rican women who conceived in the first quarter-year after passage of an omnibus immigrant law compared to their counterparts who conceived three quarter-years (or nine months) before policy passage, although the association was only approaching statistical significance with a p-value=0.09 (aOR=1.33; 95% CI: 0.96-1.84).

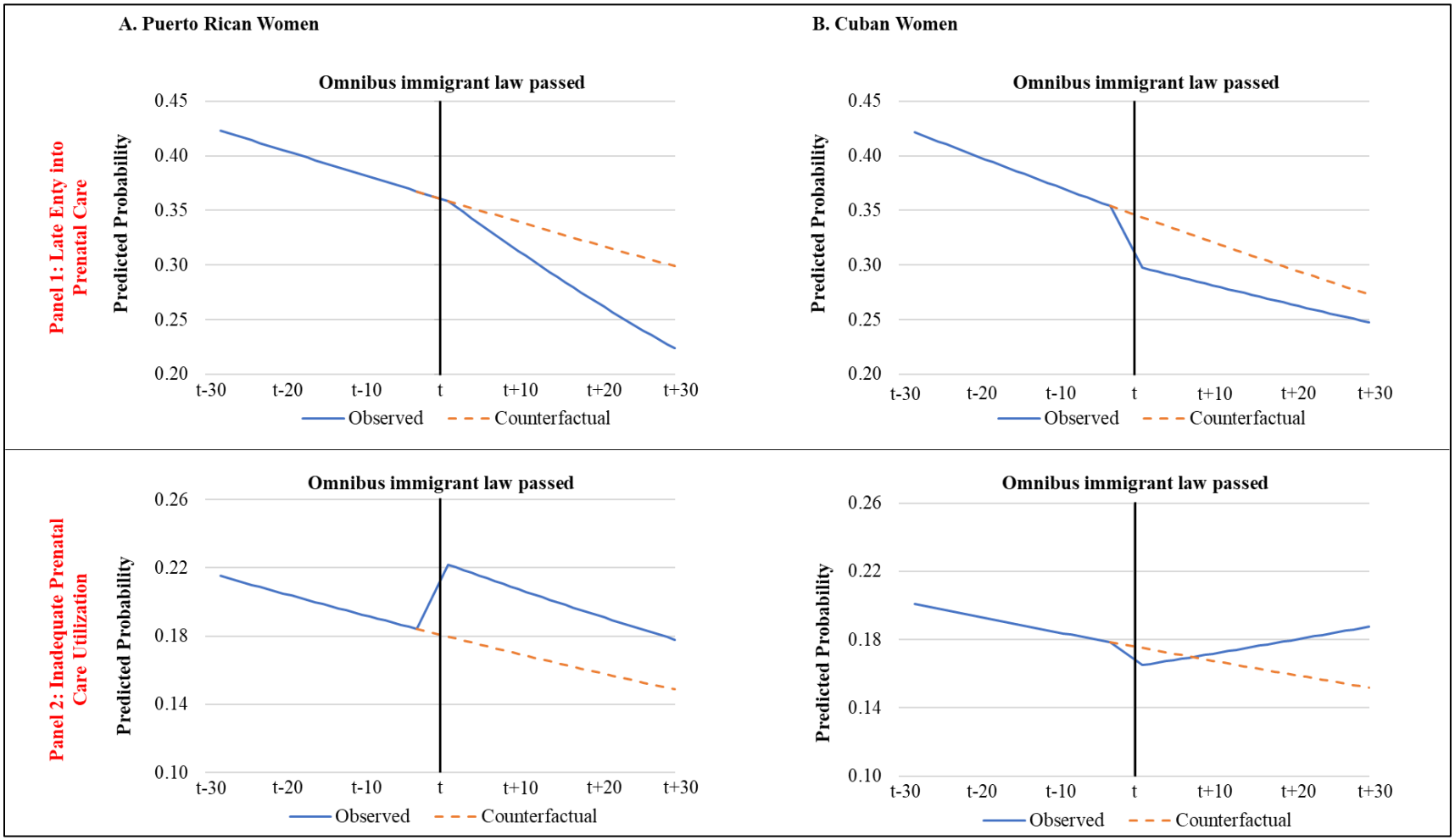
Finally, statistically significant effects of omnibus immigrant law passage on prenatal care indicators were also detected among Cuban women. The odds of late entry into prenatal care utilization decreased by 21% among Cuban women who conceived in the first quarter-year after passage of an omnibus immigrant law compared to those who conceived three quarter-years (or nine months) before policy passage (aOR=0.79; 95% CI: 0.65-0.97). Also, although no statistically significant level change in inadequate prenatal care utilization was detected, there was a statistically significant change in the post-policy versus pre-policy trend, whereby the odds of inadequate prenatal care utilization increased by an average of 1% each quarter year after policy passage.

These findings are further illustrated in **Figure 9.1**, which shows the predicted probability of late entry into prenatal care (Panel 1) and inadequate prenatal care utilization (Panel 2) before and after passage of an omnibus immigrant law among women of Puerto Rican and Cuban origin or descent, respectively. In Panel 1, we see that both Puerto Rican and Cuban women had a lower predicted probability of late entry into prenatal care (i.e., seemingly improved utilization of prenatal care according to this indicator) after the passage of an omnibus immigrant law than what would have been observed under the counterfactual. Although Puerto Rican women did not

experience an immediate change in late entry into prenatal care, the post-policy trend in the predicted probability of late entry into prenatal care declined at a faster rate than what had occurred prior to policy passage. In contrast, among Cuban women, there was an immediate decrease in the predicted probability of late entry into prenatal care. Specifically, the predicted probability of late entry into prenatal care decreased from about 0.35 among those who conceived three quarter-years (or nine months) before an omnibus immigrant law was passed to 0.30 among those who conceived in the first quarter-year after the law was passed. However, Cuban women did not experience any change in the overall trend of the predicted probability of late entry into prenatal care from pre- to post-policy passage.

Panel 2 of Figure 9.1 also shows differences in how the passage of an omnibus immigrant law effected the predicted probability of inadequate prenatal care utilization among Puerto Rican versus Cuban women. For Puerto Rican women, the predicted probability of inadequate prenatal care utilization increased from approximately 0.18 among those who conceived 3 quarter-years before law passage to 0.22 in the first quarter-year after the omnibus immigrant law had been passed with no significant change in the post-policy versus pre-policy trend. Although Cuban women initially experienced a small but statistically insignificant decrease in the predicted probability of inadequate prenatal care utilization in the first quarter-year after an omnibus immigrant law was passed, the overall trend following policy passage indicated an overall increase in the predicted probability of inadequate prenatal care utilization over time. Within 8 quarter-years after policy passage, the predicted probability of inadequate prenatal care utilization was higher than what would have been expected under the counterfactual, and this disparity continued to grow for the duration of the study period.

Figure 9.1. Predicted Probability of Late Entry into Prenatal Care and Inadequate Prenatal Care Utilization Before and After the Passage of an Omnibus Immigrant Law among Women of Puerto Rican and Cuban Origin or Descent, 2005-2014



The results of sensitivity analyses for Question 1 assessing the robustness of findings to the exclusion of one policy state from the models at a time are presented in **Appendix O**. Models assessing the effects of omnibus immigrant laws on late entry into prenatal care among Mexican and Puerto Rican women remained robust to the exclusion of each policy state (**Table O1**). In other words, regardless of which policy state was excluded from the model, the findings remained consistent to those presented in Panel 1 of Table 9.1 above. However, the model assessing the effects of omnibus immigrant laws on late entry into prenatal care among Cuban women was highly sensitive to the exclusion of certain policy states. While the model including all policy states indicated a statistically significant downward trend in the odds of late entry into prenatal care after an omnibus immigrant law was passed, the removal of Colorado, Indiana, Nebraska, and South Carolina from the model, respectively, each resulted in this association losing its statistical significance. Models assessing the effects of omnibus immigrant laws on inadequate prenatal care utilization among Mexican, Puerto Rican, and Cuban women, respectively, were also sensitive to the exclusion of certain policy states (**Table O2**). Among Mexican women, the removal of Oklahoma, South Carolina, or Utah from the model, respectively, each resulted in the detection of a statistically significant change in the odds of inadequate prenatal care utilization immediately after an omnibus immigrant law was passed, whereas no such effect was present in the main model including all policy states. Specifically, the odds of inadequate prenatal care utilization were 19 to 20% higher (depending on which state was removed from the model) among Mexican women who conceived in the first quarter-year after policy passage compared to their counterparts who conceived three quarter-years (or nine months) before policy passage. There was also a statistically significant increase in the odds of inadequate prenatal care utilization immediately after policy passage among Puerto Rican

women when Indiana or South Carolina was removed from the model. When either of these states were removed from the model, the results indicated that the odds of inadequate prenatal care utilization increased by nearly 50% among Puerto Rican women who conceived in the first quarter-year after policy passage compared to those who conceived three quarter-years (or nine months) before policy passage. Finally, while the model including all policy states showed a statistically significant upward trend in the odds of inadequate prenatal care utilization after an omnibus immigrant law was passed among Cuban women, the removal of Colorado, Georgia, Indiana, or Missouri from the model each resulted in the loss of the statistical significance of that association.

Question 2: Are the effects of omnibus immigrant laws on preterm birth and low birth weight, respectively, moderated by mother's national origin?

Table 9.2 provides results of models assessing the effects of omnibus immigrant laws on the adjusted odds ratios of preterm birth (Panel 1) and low birth weight among all infants regardless of gestational age at birth and infants born to term (Panels 2 and 3, respectively) across women of Mexican, Puerto Rican, and Cuban origin or descent, respectively. Again, like the findings above related to prenatal care indicators, the results show that the effects of omnibus immigrant laws on birth outcomes were not consistent across the three national origin subgroups.

Table 9.2. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Preterm Birth and Low Birth Weight among Latina Women of Mexican, Puerto Rican, and Cuban Origin, 2005-2014

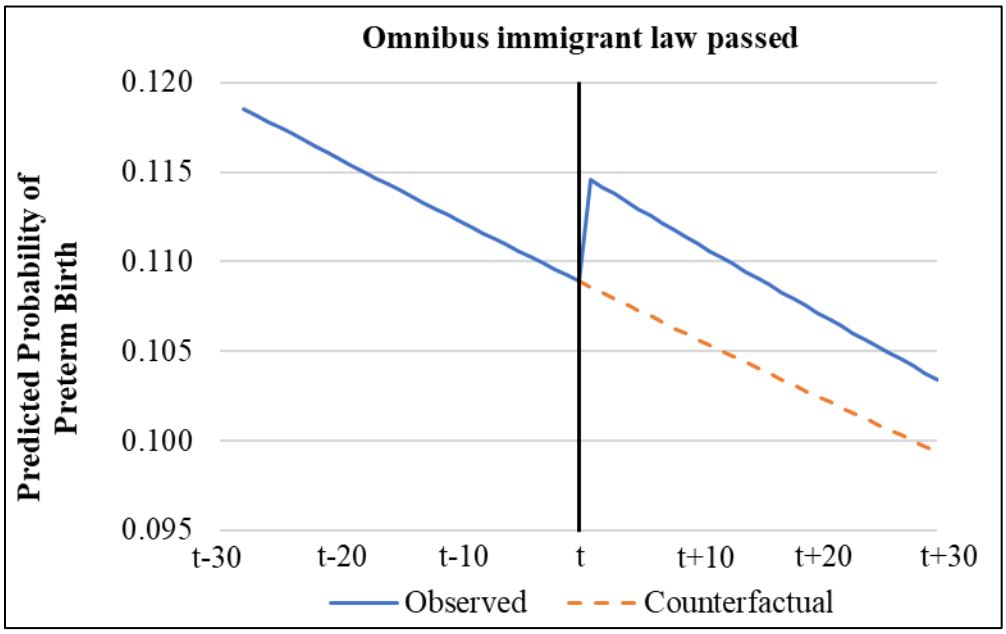
		aOR (95% CI)		
	Policy Variables	**Mexican**	**Puerto Rican**	**Cuban**
Panel 1: PTB	Time, pre-policy trend	1.00 (0.99-1.00)	0.99 (0.99-1.00)	1.00 (0.98-1.01)
	OIL passed	1.06 (1.02-1.10)***	1.04 (0.88-1.23)	1.04 (0.83-1.31)
	OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)	1.00 (0.99-1.01)
Panel 2: LBW	Time, pre-policy trend	1.01 (1.00-1.01)	1.00 (0.99-1.01)	1.01 (1.00-1.02)**
	OIL passed	1.04 (1.00-1.09)	1.00 (0.99-1.01)	0.88 (0.68-1.14)
	OIL, post-policy trend	1.00 (1.00-1.01)	1.01 (1.00-1.03)*	0.98 (0.97-0.99)***
Panel 3: LBW among Full Term Infants	Time, pre-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)	1.01 (1.00-1.02)
	OIL passed	1.04 (0.98-1.10)	1.01 (0.77-1.32)	1.01 (0.77-1.33)
	OIL, post-policy trend	1.00 (1.00-1.01)	1.02 (1.00-1.04)	0.98 (0.97-1.00)*

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included women's nativity status, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PTB = Preterm birth; LBW = Low birth weight; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Although there was no evidence of omnibus immigrant laws influencing the likelihood of preterm birth among women of Puerto Rican or Cuban origin or descent, an immediate change in the odds of preterm birth following passage of an omnibus immigrant law was detected among women of Mexican origin or descent. Specifically, the odds of preterm birth were 6% higher

among those conceived in the first quarter-year after an omnibus immigrant law was passed versus those conceived in the quarter-year during policy passage (aOR=1.06; 95% CI: 1.02-1.10). These results are further illustrated in **Figure 9.2** below, which depicts the predicted probability of preterm birth before and after passage of an omnibus immigrant law among infants born to Mexican women. The predicted probability of preterm birth increased from about 0.109 among infants conceived in the quarter-year when the omnibus immigrant law was passed to 0.115 among those conceived in the first quarter-year after the law had passed. Although there was no change in the overall trend of preterm birth from before to after an omnibus immigrant law had passed, the figure shows that the predicted probability of preterm birth among infants born to Mexican women remained higher after the law was passed than what would have been expected under the counterfactual.

Figure 9.2. Predicted Probability of Preterm Birth Before and After the Passage of an Omnibus Immigrant Law among Women of Mexican Origin or Descent, 2005-2014



Additionally, as shown in Table 9.2, it was found that the odds of low birth weight among infants born to women of Mexican origin or descent increased by 4% among those conceived in the first quarter-year after an omnibus immigrant law was passed compared to those conceived in the quarter-year during policy passage, although this association was only approaching statistical significance with a p-value=0.06 (aOR=1.04; 95% CI: 1.00-1.09). However, there was no longer a statistically significant effect of omnibus immigrant laws on low birth weight when restricting the sample to infants born to term to Mexican women.

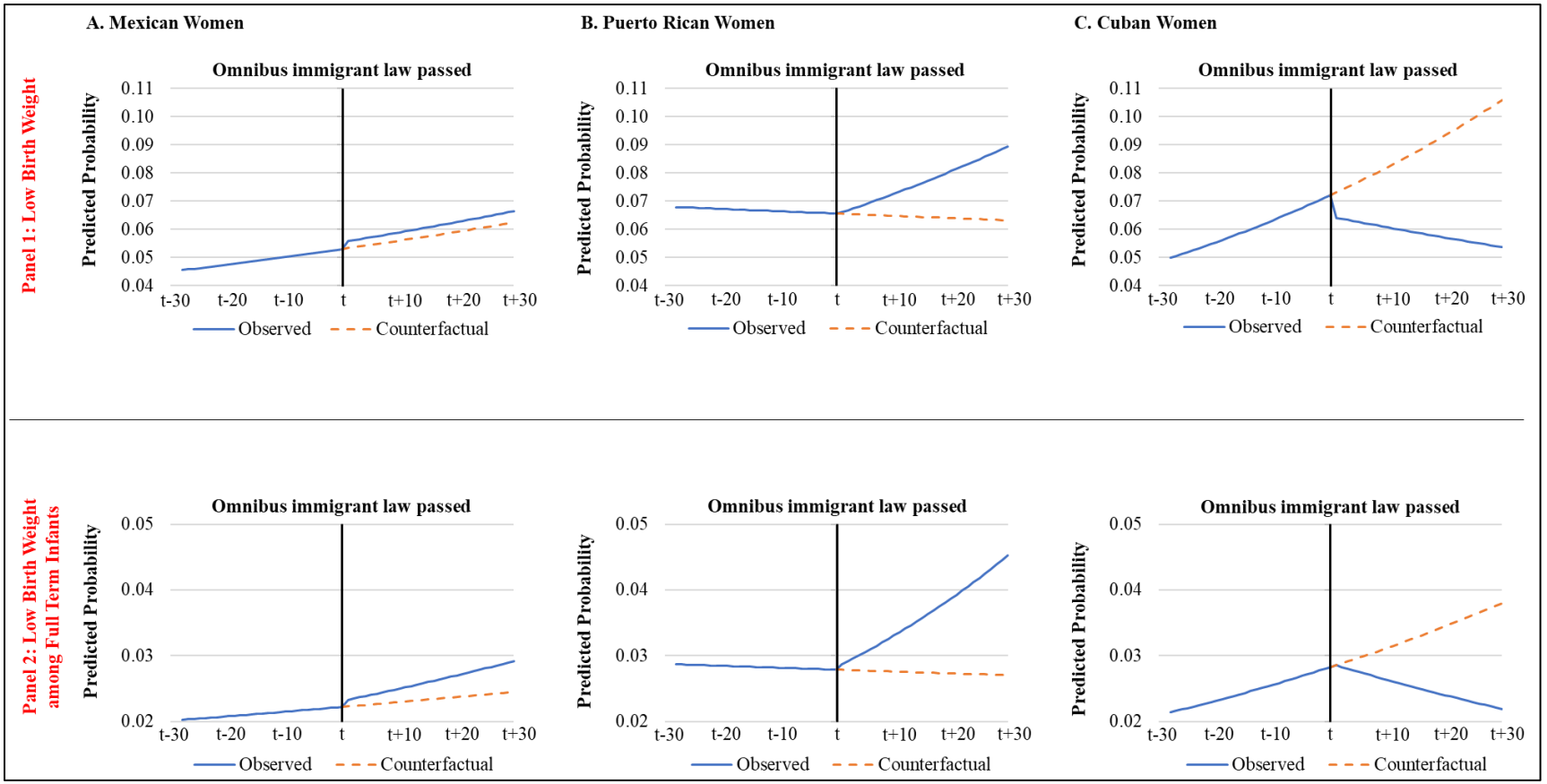
The passage of an omnibus immigrant law also resulted in significant changes to the odds of low birth weight among both women of Puerto Rican and Cuban origin or descent. Specifically, among infants born to Puerto Rican women, the odds of low birth weight regardless of gestational age at birth increased by an average of 1% each quarter-year after policy passage (aOR=1.01; 95% 1.00-1.03). Further, when restricting the sample to full-term infants, the odds of low birth weight increased by an average of 2% each quarter-year after policy passage, although the association was just outside of statistical significance with a p-value=0.05 (aOR=1.02; 95% CI: 1.00-1.04). Finally, among infants born to Cuban women, it was found that the odds of low birth weight decreased by an average of 2% each quarter-year after policy passage in analyses among infants of any gestational age at birth as well as those restricted only to infants born to term (aOR=0.98; 95% 0.97-0.99 and aOR=0.98; 95% CI 0.97-1.00, respectively).

Findings related to changes in low birth weight due to passage of omnibus immigrant law are further illustrated in **Figure 9.3**, which depicts the predicted probability of low birth weight over time among infants born to women of Mexican, Puerto Rican, and Cuban origin or descent, respectively. Panel 1 of Figure 9.3 shows the results among all infants regardless of their gestational age at delivery, while Panel 2 provides the results of models restricted to infants born

to term (i.e., low weight due to growth restriction). Among infants born to Mexican women, there was a small increase in the predicted probability of low birth rate (regardless of gestational age at delivery) from 0.53 for those conceived in the quarter-year that the omnibus immigrant law was passed to 0.56 for those conceived in the first quarter-year after passage (although this change was only approaching statistical significance). There was no significant change in the trend of low birth weight from pre- to post-policy passage; however, the predicted probability of low birth weight among infants born to Mexican women remained higher after passage of the omnibus policy than what would have been expected under the counterfactual. Although there was no immediate change in the predicted probability of low birth weight among infants born to Puerto Rican women, the overall trend increased over time after an omnibus immigrant law was passed with a growing disparity between the observed and counterfactual probabilities with each passing quarter-year of the study period. In fact, prior to policy passage, the predicted probability of low birth weight among infants born to Puerto Rican women was relatively stable if not decreasing slightly over time. Compared to an average predicted probability of low birth weight of 0.066 at the time of policy passage, the predicted probability had risen to nearly 0.090 by the end of the study period. Further, infants born to Cuban women experienced an immediate decrease in the predicted probability of low birth weight among those conceived in the first quarter-year after the omnibus immigrant law was passed, although this change was not statistically significant. However, there was a statistically significant change in the post- versus pre-policy trend. Specifically, although the average predicted probability was increasing over time prior to the passage of an omnibus immigrant law, there was a general downward trend in the average predicted probability of low birth weight after the policy was passed. As a result, the predicted probability of low birth weight among infants born to Cuban women conceived during

the last quarter-year of the study period was nearly identical to that of their counterparts conceived during the first quarter-year of the study period (0.54 and 0.05, respectively). Finally, in Panel 2 of Figure 9.3, which portrays the results of models restricted to infants born to term, the general patterns for each national origin subgroup remain consistent to those found in models among all infants regardless of gestational age presented in Panel 1. However, the only statistically significant change was among Cuban women, whereby the overall trend in the predicted probability of low birth weight among full term infants decreased over time after an omnibus immigrant law was passed in comparison to an increasing trend over time prior to policy passage.

Figure 9.3. Predicted Probability of Low Birth Weight Before and After the Passage of an Omnibus Immigrant Law among Women of Mexican, Puerto Rican, and Cuban Origin or Descent, 2005-2014



The results of sensitivity analyses for Question 2 assessing the robustness of findings to the exclusion of each policy state at a time can be found in **Appendix P**. In general, models assessing the effects of omnibus immigrant laws on preterm birth among infants born to women of Mexican, Puerto Rican, and Cuban origin or descent remained robust to the exclusion of each policy state (**Table P1**). In other words, regardless of which policy state was excluded from the model, the findings remained consistent to those presented in Panel 1 of Table 9.2 above. In addition, although the model assessing the effects of omnibus immigrant laws on low birth weight among all infants regardless of gestational age at delivery was robust to the exclusion of each policy state among Cuban women, these models failed robustness checks for Mexican and Puerto Rican women (**Table P2**). Among infants born to Mexican women, the removal of Colorado, Georgia, Indiana, or Nebraska, respectively, each resulted in the detection of a statistically significant increase in the odds of low birth weight immediately after an omnibus immigrant law was passed whereas this association was only approaching statistical significance in the results presented in Panel 2 of Table 9.2 above. Explicitly, the odds of low birth weight were 6 to 7% higher (depending on which state was removed from the model) among infants born to Mexican women conceived in the first quarter-year after policy passage compared to their counterparts conceived in the quarter-year during policy passage. Further, although the results of the primary model indicated a statistically significant change in the post-policy trend following passage of an omnibus immigrant law among Puerto Rican women, there was a loss in the statistical significance of this association when Arizona, Colorado, Indiana, Missouri, or South Carolina was removed from the model, respectively.

Lastly, the models assessing the effects of omnibus immigrant laws on low birth weight among full term infants born to women of Mexican, Puerto Rican, and Cuban origin or descent

were all sensitive to the removal of particular policy states (**Table P3**). When Colorado or Georgia was removed from the model, the odds of low birth weight were 13% and 6% higher, respectively, among full term infants born to Mexican women conceived in the first quarter-year after an omnibus immigrant law was passed compared to their counterparts conceived in the quarter-year during law passage. Although the association was only approaching statistical significance in the primary model including all policy states, there was a statistically significant change in the post-policy trend compared to the pre-policy trend in low birth weight among full term infants born to Puerto Rican women when Alabama, Missouri, Nebraska, or Oklahoma was removed from the model, respectively. Specifically, when any of these states were removed from the model, the results indicated an average increase of 2% in the odds of low birth weight each quarter-year after the policy was passed. In contrast, while the model including all policy states indicated a statistically significant downward trend in the odds of low birth weight among full term infants born to Cuban women after an omnibus immigrant law was passed, the removal of Colorado, Georgia, Indiana, or Utah from the model, respectively, each resulted in this association losing its statistical significance.

Aim 3 Discussion

The goal of the final aim of this dissertation was to determine if the effects of omnibus immigrant laws on prenatal care indicators and birth outcomes differed by national origin subgroup, comparing the effects across women of Mexican, Puerto Rican, and Cuban origin or descent. I found that the effects of omnibus immigrant laws on prenatal care indicators and birth outcomes were not consistent across the three national origin subgroups. In short, the findings suggest that the passage of an omnibus immigrant law resulted in some improvement to late

entry into prenatal care but a worsening of inadequate prenatal care utilization among Puerto Rican and Cuban women, while Mexican women experienced no effects of omnibus immigrant laws on either prenatal care indicator.

In contrast, I found evidence that the passage of omnibus immigrant laws resulted in an immediate increase in the odds of preterm birth among infants born to Mexican women, with no changes in preterm birth among Puerto Rican or Cuban women. Moreover, I found evidence that all three groups experienced effects on low birth weight, although in different directions. Unlike infants born to Mexican and Puerto Rican women who experienced an increased odds of low birth weight following passage of an omnibus immigrant law, infants born to Cubans experienced a decrease in the odds of low birth weight over time. This finding among Cubans may be resulting from a general improvement in the timing of entry into prenatal care, despite a worsening in adequate prenatal care utilization. However, the findings of sensitivity analyses across all outcomes suggest that, in general, the extent that laws significantly affect these outcomes across the different subgroups relies heavily on the specific law and state context. In other words, the analyses were commonly sensitive to the removal of specific policy states from the model.

Interpretation of Findings

Prenatal Care Indicators. It was hypothesized that Mexican women would experience the greatest effect of an omnibus immigrant law on prenatal care utilization for myriad reasons, including political and media rhetoric focused heavily on Mexicans and undocumented migration at the US-Mexico border, the higher proportion of undocumented immigrants within the Mexican community, heightened fear related to possible detection and deportation of themselves, family, and friends, and increased experiences of stigma and discrimination. However, in main analyses,

I found no evidence of effects of omnibus immigrant laws on late entry into prenatal care nor inadequate prenatal care utilization among this group. One possible explanation for this finding is heterogeneity across nativity and/or documentation status that is masking actual effects within certain subgroups of Mexicans. For example, a lack of effect among US-born Mexicans or foreign-born Mexicans with documented status (i.e., naturalized citizens or green card holders) may be masking the presence of an effect among foreign-born Mexican with undocumented status. About 30% of foreign-born Mexicans in the US are naturalized citizens (Zong & Batalova, 2018); however, Mexicans also account for the largest share of all undocumented immigrants. Specifically, in 2016, it was estimated that 53% of the 11.3 million undocumented immigrants in the US were from Mexico (Zong & Batalova, 2018). Although I am unable to account for documentation status in this study, sub-analyses conducted in the previous chapter of this dissertation research did find that the passage of an omnibus immigrant law caused an increased odds of inadequate prenatal care utilization among foreign-born Mexican women, providing some evidence for this hypothesis. It is also possible that Mexicans are more accustomed to racialized exclusion and a general anti-immigrant and anti-Latino climate so that the passage of an omnibus immigrant law is less consequential in terms of significantly altering their health care seeking behaviors (Torche & Sirois, 2019). Finally, the results of sensitivity analyses provide an additional explanation, suggesting that the extent that the prenatal care utilization of Mexican women is impacted by omnibus immigrant laws differs across specific laws and state contexts. Specifically, the removal of Oklahoma, South Carolina, or Utah from the model, respectively, each resulted in the detection of a statistically significant change in the odds of inadequate prenatal care utilization immediately after an omnibus immigrant law was passed.

This implies that the inclusion of these states in the model was masking the existence of observed effects.

In fact, it appears that the effects of omnibus immigrant laws on prenatal care indicators among all three national origin subgroups included in this study are sensitive to the specific policy and state context. As stated in the previous chapter, despite being treated as generally "equal" for the purposes of this dissertation research, each omnibus immigrant law differs in the number, type, and severity of provisions included (see **Table 2.1** and **Appendix B**). Variation in the specifics of each policy, in addition to differences in the local and state context, likely interact to differentially influence how women of specific national origin subgroups are impacted by the policy. The political and media rhetoric surrounding the passage of omnibus immigrant laws may have been more widespread and/or racially charged in certain states, resulting in members of certain Latino subgroups (e.g., Mexicans) feeling more vulnerable than others. Further, the presence of more Latino or immigrant enclaves could have exposed Latinos in certain states to greater policing by immigration enforcement and more experiences of anti-immigrant and anti-Latino discrimination that can have downstream effects on healthcare access and utilization. One study found that Latino citizen children with noncitizen parents living in counties with higher Latino population density were at significantly higher risk of losing Medicaid/CHIP when their state passed restrictive omnibus immigrant laws (Allen, 2018). As all Puerto Ricans have US citizenship by birthright and most Cubans being either US citizens or legal permanent residents, they may have greater access to social benefits and resources than Mexicans or other Latino national origin subgroups that can buffer the negative effects of certain omnibus immigrant laws.

I found that Puerto Rican and Cuban women generally experienced some improvements in the timing of prenatal care initiation following the passage of an omnibus immigrant law. It is possible that the passage of these laws motivated women to initiate prenatal care early in their pregnancy, perhaps due to uncertainty around how the law would be implemented and affect their daily lives in the future. It may have been easier for Puerto Rican and Cuban women to initiate prenatal care within the first trimester following passage of the omnibus immigrant laws because, again, the vast majority have US citizenship or legal permanent residence and, thus, may experience fewer barriers to care. However, my findings also show that the passage of an omnibus immigrant law increased the odds of inadequate prenatal care utilization among both groups. So, despite improvements in the early initiation of prenatal care, the passage of an omnibus immigrant law could have caused women to fail to meet the minimum number of prenatal care visits recommended for each trimester of pregnancy. This might have been due to increases in anticipated or enacted stigma or discrimination from law enforcement or health care professionals that deterred Puerto Rican and Cuban women from frequently attending prenatal care even though their citizenship or documentation status would, in theory, provide some level of protection. Although not specific to particular national origin subgroups, there is some evidence that Latinos experienced increased discrimination from healthcare workers following passage of omnibus immigrant laws (White, Yeager, et al., 2014). Moreover, for Latinos, race/ethnicity, nativity status, and documentation status can be conflated so that "in the popular imagination all Latinos are perceived to be Mexican, all Mexicans are seen as immigrants, and they, in turn, are all cast as undocumented" (Viruell-Fuentes et al., 2012, p. 2103). Consequently, all Latinos are made vulnerable to experiences of racial profiling and discrimination that can cause considerable fear and stress.

Birth Outcomes. Like findings related to the effects of omnibus immigrant laws on prenatal care indicators, it was found that the effects of omnibus immigrant laws on birth outcomes were not consistent across Mexican, Puerto Rican, and Cuban women. Although models assessing the effects of omnibus immigrant laws on preterm birth were robust to sensitivity analyses, models assessing the effects on low birth weight across each of the three national origin subgroups were generally more sensitive to the removal of specific states (and thus, specific policies) from the model. Again, as described previously, this suggests that the specifics of the policy and the local and state context likely matter in terms of how omnibus immigrant laws will influence birth outcomes, especially low birth weight, across these three national origin subgroups.

In general, I found that the passage of omnibus immigrant laws may have been particularly detrimental to birth outcomes among Mexican and Puerto Rican women. Specifically, Mexican women who conceived in the first quarter-year after the passage of an omnibus immigrant law had a significantly higher odds of preterm birth and low birth weight, respectively, than those who conceived in the previous quarter-year (i.e., during policy passage). Further, I found that Puerto Rican women experienced a 1% increase in the odds of low birth weight each quarter-year after an omnibus immigrant law was passed.

Acute and chronic stress are independent risk factors for both preterm birth and low birth weight, causing a disruption of critical endocrine, immune, and other biological systems and processes involved in fetal development and growth (Louis & Platt, 2011). Stress can also cause other behavioral changes that increase the risk of adverse birth outcomes, such as substance use, decreased physical activity, and dietary changes (Louis & Platt, 2011). Numerous studies describe how omnibus immigrant laws contributed to widespread fear and stress among Latinos regardless of their nativity or documentation status, most commonly related to the constant threat

of being surveilled, detained, and deported and experiences of racial profiling and discrimination (Ayón & Becerra, 2013; Kline, 2017; Koralek et al., 2009; Nichols et al., 2018; Szkupinski Quiroga et al., 2014). This fear and distress may have been particularly pronounced among Mexicans and Puerto Ricans, explaining their poorer birth outcomes.

Mexican women may be more likely to be undocumented or live in mixed-status families than their Puerto Rican and Cuban counterparts. Further, Mexican nationals consistently make up the largest proportion of those detained and deported from the US each year. In turn, Mexican women may be more vulnerable to the economic and psychological consequences of deportation which can have downstream effects on birth outcomes. Moreover, the fact that political and media rhetoric surrounding the passage of omnibus immigrant laws focused heavily on undocumented immigrants from Mexico and migration at the US-Mexico border may have caused even greater fear and stress among this group.

However, the passage of omnibus immigrant laws that foster an anti-immigrant and anti-Latino climate exposes all Latinos to a "culture of fear" related to increased racial profiling and discrimination during everyday interactions. Latinos have described increased discrimination from law enforcement officers, employers, healthcare workers, and in other day-to-day interactions following the passage of omnibus immigrant laws in their state (Koralek et al., 2009; White, Yeager, et al., 2014). Increased experiences of discrimination may at least partially explain why I also found worsening birth outcomes among infants born to Puerto Rican women despite having US citizenship that offers greater access to social services and benefits and protection from deportation. These findings suggest that citizenship does not shield all Latinos from the impacts of restrictive immigrant laws that do not directly target them as written. Further, Puerto Ricans are more likely to be racialized as Black than other national origin

subgroups of Latinos (Montoya-Williams et al., 2020). This may have exposed Puerto Ricans to increased and intersecting forms of racism and discrimination following the passage of omnibus immigrant laws that caused compounding stress over time and, thus, an increasing odds of poorer birth outcomes than compared to the time before policy passage.

Interestingly, although the passage of omnibus immigrant laws would have left all Latinos vulnerable to experiences of stress and discrimination and, in turn, poorer health, I found that Cuban women generally experienced an improvement in birth outcomes, namely low birth weight, after an omnibus immigrant law was passed. The reasons for this are not clear but may be related to their distinct migration history and a generally positive context of reception since arriving to the US following the Cuban revolution and amid lasting implications of Cold War era politics. Cubans tend to hold a more conservative political ideology, identifying favorably with the Republican Party and their agenda (Krogstad, 2020). Republican control of the state legislature and the percentage of Republican voters in a state have been found to be positively associated with the passage of restrictive state-level immigrant policies (Ramakrishnan & Wong, 2010; S. P. Wallace et al., 2018). Moreover, the Cuban Adjustment Act of 1966 that provided Cuban immigrants with legal residency and a path to citizenship (regardless of how they arrived in the US) meant that virtually no Cuban would have been undocumented during the period that this dissertation research takes place. These factors, combined with Cubans' access to the potential buffering effects of access to social benefits and resources, may have translated to Cubans being more likely than Latinos of other national origin subgroups to support and feel considerably less threatened by the passage of omnibus immigrant laws meant to target undocumented immigrants as written. Still, these explanations may provide more justification for finding no association between omnibus immigrant laws and birth outcomes among Cubans, as

opposed to my finding of improved outcomes among this group after an omnibus immigrant law was passed. Further, it is interesting to note that worsening prenatal care utilization following passage of an omnibus immigrant law among both Puerto Ricans and Cubans may have contributed to poorer birth outcomes only for Puerto Ricans but not Cubans. Qualitative research may be a particularly useful tool to better understand how Cubans, with their unique political power and a very distinct immigrant story in the US, respond to, understand, and are affected by restrictive state-level immigrant policies like omnibus immigrant laws and how this differs from other Latino subgroups.

Conclusion

A growing body of literature has assessed the association between restrictive state-level immigrant policies on health outcomes among Latinos in the US, paying particular attention to potential differences by nativity status. However, researchers have argued for studies that seek to better understand how the effects of immigrant policies on health differ across Latino national origin subgroups, positing that policies may disproportionately harm members from specific groups (e.g., Mexicans or Central Americans). To address this gap in the literature, this study uses a quasi-experimental design and population-based data to examine whether the effects of omnibus immigrant laws on pregnancy outcomes, namely prenatal care utilization, preterm birth, and low birth weight, differ across the three largest national origin subgroups of Latinos in the US: Mexican, Puerto Ricans, and Cubans (Noe-Bustamante, 2019). Importantly, this study provides early evidence that, as hypothesized, the effects of restrictive state-level immigrant policies on pregnancy outcomes are not consistent across the three groups. In general, I found that the passage of omnibus immigrant laws resulted in poorer prenatal care utilization among Puerto Rican and Cuban women, while no effects were observed among Mexican women.

Furthermore, the passage of omnibus immigrant laws was associated with significantly poorer birth outcomes among Mexicans and Puerto Ricans but an improvement in birth outcomes among Cuban women. These differences may be due to the great variation in the histories of migration, contexts of reception, political ideologies and power, and socioeconomic status that exists across the national origin subgroups of Latinos in the US. However, my findings also suggest that differences across national origin subgroups can result from variation in the specifics of each omnibus immigrant law as written and aspects of local and state context where Latinos live and how that can also intersect with national origin identities. Regardless, these findings highlight the need for studies attempting to understand the effects of immigrant policies on health among Latinos in the US to disaggregate analyses by national origin and descent.

CHAPTER 10. CONLUSION AND FUTURE DIRECTIONS

Summary of Key Findings across Study Aims

This study utilized a quasi-experimental study design and national population-based data to examine the effects of omnibus immigrant laws on birth outcomes and prenatal care utilization among Latina women in the US, with a specific focus on assessing differences across nativity status and national origin. I found substantial evidence that the passage of omnibus immigrant laws resulted in a significant increase in the odds of preterm birth immediately after passage of an omnibus immigrant law, largely driven by effects among infants born to foreign-born Latinas generally and Mexican-born Latinas specifically. I also found evidence that the passage of omnibus immigrant laws resulted in a worsening of preterm birth outcomes among women of Mexican origin or descent regardless of nativity status. Unlike other outcomes assessed in this dissertation, the effects of omnibus immigrant laws on preterm birth did not appear to be sensitive to specific states or policies despite the great variation that exists across omnibus immigrant laws passed in terms of the number, type, and severity of provisions included in each law.

In contrast, evidence on the impacts of omnibus immigrant laws on low birth weight and prenatal care indicators varied and these associations were more likely to be sensitive to the inclusion of specific states (or policies) in the analytic model, suggesting that the extent that omnibus immigrant laws influence these outcomes may largely depend on the specific provisions included with each omnibus immigrant law and other factors of the local and state context that effect the conditions in which people live (e.g., the presence of community-based organizations that cater to Latino and immigrant communities, living in an ethnic and/or immigrant enclave that can either buffer or exacerbate stressors). Regardless, this dissertation study does provide

some evidence that some omnibus immigrant laws resulted in significant changes to low birth weight and inadequate prenatal care utilization among specific groups. For example, I found an increased odds of low birth weight among infants born to foreign-born women from Mexico as well as Latina women of Mexican and Puerto Rican origin or descent, respectively, regardless of nativity status. I also found that the passage of omnibus immigrant laws resulted in an increased odds of inadequate prenatal care utilization among both foreign-born and US-born Latina women, foreign-born women from Mexico, and Latina women of Puerto Rican and Cuban origin or descent. Generally, I either found that omnibus immigrant laws resulted in no statistically significant effect on late entry into prenatal care or that timing of initiation improved following the passage of an omnibus immigrant law among certain groups (i.e., among Latina women of Puerto Rican and Cuban origin or descent, respectively). Together, these findings suggest that the effects on prenatal care utilization may have been driven by certain groups of women being more likely to fail to attend the total number of recommended prenatal care visits at each stage of pregnancy after an omnibus immigrant law was passed rather than due to when prenatal care was started. Thus, policies and programs aimed at improving prenatal care utilization and birth outcomes, especially in states that have a more restrictive immigrant policy landscape, should focus on ensuring that women receive the support necessary to attend all recommended prenatal care visits so that the health and wellbeing of both the mother and baby may be properly monitored throughout the pregnancy. Such programs could also have additional downstream benefits for women and children too, increasing the likelihood that they remain engaged in the healthcare system during the postpartum period and beyond.

Further, these findings also highlight how the observed effects of omnibus immigrant laws on Latina women on pregnancy outcomes will differ considerably depending on the specific

group under study. In fact, some Latina women can even experience an improvement in outcomes, counter to what many scholars would likely hypothesize given that these are restrictive policies that restrict immigrants' access to certain rights and benefits and foster an anti-immigrant and anti-Latino climate that can result in stress and increased experiences of discrimination for anyone who may be perceived to be Latino. For example, I found that the odds of low birth weight decreased after an omnibus immigrant law was passed among Latina women of Cuban origin or descent. This further underscores the need to disaggregate analyses across multiple identities, including nativity status, national origin, and even documentation status whenever possible. Analyses that focus on Latinos generally are likely to miss important variation in the effects of immigrant policies across the diaspora that can better inform future programming, policy, and research.

One goal of this dissertation study was to better understand the extent that omnibus immigrant laws affected pregnancy outcomes among US-born Latinos. Importantly, this study found limited evidence of spillover effects of omnibus immigrant laws on US-born Latina women. This finding contradicts related research that has found an association between restrictive immigrant policies and adverse birth outcomes even among infants born to US-born Latinas (Novak et al., 2017; Stanhope et al., 2019). One reason why spillover effects may not have been present in the current study is because the holding of citizenship among US-born Latinas provides them with safety from deportation and access to critical social benefits and resources not readily available to all foreign-born Latinas, especially those with less than five years in the US or who are undocumented. Thus, their US citizenship acts as a critical stress buffer that generally protected them from suffering the negative health consequences of omnibus immigrant laws. However, research should be conducted to examined whether differences exist

comparing those who are US-born living in mixed-status households to those who are not, as those living in mixed-status household can still experience significant stress and fear following the passage of restrictive immigrant policies despite their own protected status.

Another possible explanation for the lack of spillover effects is that US-born Latinas in certain local or state contexts are simply more accustomed to experiences of racialized exclusion and a general anti-immigrant and anti-Latino climate that translate to omnibus immigrant laws being less consequential in terms of significantly altering their risk of poor pregnancy outcomes. Further, the current study was unable to consider other protective factors that could influence the extent that omnibus immigrant laws impact pregnancy outcomes. These could include seeking healthcare outside of the formal healthcare system or residing in an ethnic or immigrant enclave with access to trusted community-based organizations who may also provide essential support and resources for Latinos. The buffering effect of such factors may have been enough to completely counteract any potential harmful effects of the passage of omnibus immigrant laws on pregnancy outcomes among US-born Latina women.

Finally, I found that when effects of omnibus immigrant laws on pregnancy outcomes were detected, the effects were long-lasting and generally failed to return to pre-policy levels for the duration of the post-policy period, equivalent to about seven years of post-policy evaluation time. This is significant as other scholars have suggested that the effects of omnibus immigrant laws would be greatest immediately after policy passage and then dissipate over time given that many of these laws were found to be only partially implemented (Allen & McNeely, 2017; Torche & Sirois, 2019). Consequently, the findings of this dissertation research suggest that omnibus immigrant laws may act as a chronic stressor among Latina women before and during conception and gestation, persisting for a period well beyond its initial passage. Furthermore,

omnibus immigrant laws were found to negatively affect important social determinants of health, including housing, employment, healthcare, and education, which may also explain the long-term impacts observed in pregnancy outcomes.

Study Limitations

This dissertation has important limitations worth noting and all findings should be considered within the context of these constraints. First, birth certificate data for birth weight, maternal ethnicity, and maternal birthplace have been shown to have high validity (Baumeister et al., 2000; DiGiuseppe et al., 2002; Northam & Knapp, 2006); however, data on gestational age are of lower quality, especially for Latina women and those not proficient in English (Wingate et al., 2007). This could affect classification of preterm birth and the timing of exposure to omnibus immigrant policies which could lead to biased effect estimates. Birth certificate data for prenatal care are also of lower validity (DiGiuseppe et al., 2002; Northam & Knapp, 2006) and important indicators of prenatal care utilization, including timing of initiation and total number of visits, were completely missing for a sizable portion of the study sample. Analyses on prenatal care indicators were completed using a complete case analysis approach, resulting in a sample size that represented only 58% of the original analytic sample. Furthermore, a comparison of demographic characteristics comparing those with complete information on prenatal care indicators versus those with any missingness in prenatal care indicators revealed statistically significant differences in the two groups across nearly all sociodemographic variables measures in the current study, suggesting that missingness was not at random (see **Appendix F**). There was also considerable missingness in potential confounding variables (e.g., mother's education

and smoking status) that, as a result, were not included in analytic models. This will all have important implications for the generalizability of study findings.

Second, it was assumed that baseline differences across states that passed omnibus immigrant laws would be accounted for by controlling for state-level characteristics in the empirical models. Furthermore, incorporation of a long baseline period (or pre-policy period) should allow for the models to account for potential confounding. Nonetheless, the findings of the study may be subject to bias if other unmeasured events took place in policy states at or around the same time that omnibus immigrant laws were being enacted. The Great Recession is a potential candidate, and the inclusion of a control series in sensitivity analyses was intended to increase confidence that any observed effects among Latinas is due to omnibus immigrant laws if no concurrent effects are seen among US-born White and Black women, respectively. The inclusion of time-varying variables capturing the economic conditions of states (i.e., unemployment rates) were intended to control for potential effects resulting from the recession. Other potential cointerventions that could have potentially biased study findings included states' uptake of the CHIP unborn child option (passed in 2002) or the Children's Health Insurance Program Reauthorization Act (CHIPRA) of 2009. The CHIP unborn child option allows states to use federal funding to provide health services to a fetus identified as a "targeted low-income child," thus allowing women's pregnancy and delivery-related care to be covered regardless of their immigration or documentation status (Wherry et al., 2017). CHIPRA allows states to eliminate the five-year waiting period for Medicaid/CHIP coverage to pregnant immigrant women with qualified status (Wherry et al., 2017). Both policies can have important implications for healthcare utilization during pregnancy and subsequent birth outcomes, particularly among foreign-born Latina women. However, most states included in this study did not have either of

these policies in place at any point during the study period and, therefore, their presence was not included in analyses as additional state-level control variables. Furthermore, I generally found no evidence that the passage of omnibus immigrant laws had any effect on pregnancy outcomes among US-born White or US-born Black women, providing some confidence that the observed effects of the laws on outcomes among Latina women were in fact a result of passage of an omnibus immigrant law versus other possible co-interventions. Nevertheless, unmeasured confounding remains a possible threat to validity.

Next, it is possible that some Latina women left the state after the passage of omnibus immigrant law and before giving birth in the state. Afterall, "self-deportation" was an explicitly stated goal of omnibus immigrant policies, and there is some evidence of out-migration to states with less restrictive immigrant policy climates among immigrant workers in low-skill professions (Bohn et al., 2014; Ellis et al., 2014, 2016). If significant out-migration occurred, model estimates would be biased due to differences in the composition of the same before versus after the policy was passed and, as a result, any observed differences in study outcomes would reflect possible selection effects. Indeed, I found numerous statistically significant differences across numerous sociodemographic and health indicators in an analysis comparing all Latina women who conceived prior and during the passage of an omnibus immigrant law to those who conceived after a policy was passed (see **Table 6.3**). Generally, those women who conceived during the post-policy period had better sociodemographic and health indicators than those who conceived in the pre-policy period. These findings may suggest possibly out-migration, especially among those who could have been most vulnerable to the negative effects of omnibus immigrant laws.

Another limitation of the study was in its inability to account for differences in potential protective factors which may influence the occurrence and impact of both acute and chronic stressors on prenatal care utilization and birth outcomes, such as other healthcare seeking behaviors and residing in an ethnic or immigrant enclave. For example, pregnant Latinas have been shown to utilize an informal system of prenatal care – composed of family, friends, and community-based outreach workers (also known as *promotoras*) – that can provide maternity support and act as a stress-buffer (Korinek & Smith, 2011; McGlade et al., 2004). Further, living in an area with high concentrations of Latinos may increase their likelihood of finding community-based healthcare services that are affordable and cater specifically to Latino and/or immigrant communities, including undocumented immigrants (Korinek & Smith, 2011). These informal sources of care among Latina women have been noted as a potential contributor to the Latino and/or immigrant health paradox in birth outcomes.

Finally, this study was unable to account for documentation or citizenship status (e.g., undocumented immigrants, green card holders and legal permanent residents, naturalized citizens, and so on) among foreign-born women as this information is not captured in birth certificate data. I would expect the greatest effects among undocumented women as they are the group most directly targeted by omnibus immigrant laws. The deleterious effects of omnibus immigrant laws observed in the present study on preterm birth, low birth weight, and inadequate prenatal care utilization among foreign-born Latinas may in fact be a conservative estimate of the effects among those immigrants with undocumented status. Relatedly, the length of residency in the US is also not collected in birth certificate data, and thus, was not accounted for in the present study. It has been shown that health outcomes among Latino immigrants worsen over time, theorized to be the result of the weathering effects of chronic and acute stress. Future

research should control for length of time in the US among foreign-born Latina women as recent arrivals may have improved outcomes or be less vulnerable to the passage of restrictive immigrant policies than those immigrants who have been in the US for a significant period.

Conclusion and Implications

Despite these limitations, the findings of this dissertation study have important implications for policy, programming, and public health. Adverse birth outcomes such as preterm birth and low birth weight are critical indicators of population health. Latina women consistently experience poorer birth outcomes and utilization of prenatal care than white women and it has been suggested that state-level immigrant policies are an important driver of health inequalities among Latinos in the US. Although omnibus immigrant laws constitute the harshest of state-level immigrant policies passed at the state level to date, their impact on population health has remained under-investigated.

This study utilized quasi-experimental methodology to investigate the effects of omnibus immigrant laws on preterm birth, low birth weight, late entry into prenatal care, and inadequate prenatal care utilization among Latina women in the US and makes several important contributions to the literature. First, it answered calls for research that examines the effects of state-level immigrant policy, a plausibly modifiable factor, on health (Hardy et al., 2012). Second, while numerous studies have considered the impact of restrictive immigrant policies on indicators of health care utilization, far fewer have studied their effects on specific health outcomes with important implications for population health, like preterm birth and low birth weight. Third, this study recognized the vast heterogeneity of the Latino community by investigating whether the effects of omnibus immigrant laws differ across nativity status and

national origin. My findings on a lack of spillover effects of omnibus immigrant laws on pregnancy outcomes among US-born Latina women generally, but some significant effects among women of Puerto Rican origin or descent (who all would have US citizenship), can be used to inform ongoing debate related to the extent to which immigrant policies instituted at both the sub-federal and federal levels result in negative health consequences even among those not directly targeted by the laws (i.e., undocumented immigrants). Moreover, this study provides novel evidence that the effects of immigrant laws on health outcomes also differ across the three largest national origin subgroups of Latinos in the US, providing valuable theoretical insight into the various mechanisms by which immigrant laws may improve or harm health for members of specific groups. Further, these findings highlight the need for similar studies, even those conducted among other racial/ethnic immigrant groups in the US like Black or Asian populations, to disaggregate analyses across national origin subgroups whenever possible.

Programmatic and Policy Implications

This study has important programming and policy implications. The findings of this dissertation research can be used to develop or inform interventions for improving maternal and child health outcomes targeted toward specific communities (e.g., by nativity status or national origin) who may be particularly vulnerable to the negative consequences of restrictive immigrant policies. For example, in states with an overwhelmingly restrictive immigrant policy landscape or when a new restrictive immigrant policy is soon to be passed in a local or state context, such programs could be tailored specifically to foreign-born Latina women generally, as well as those of Mexican, Puerto Rican, and Cuban origin or descent, respectively, based on the specific and distinct needs of each group.

Although state-level omnibus immigrant legislation has not been passed in several years, immigration remains a highly salient topic in US politics and restrictive immigrant policies continue to be a central feature of the state legislative agenda. These single-issue restrictive immigrant policies often include provisions reminiscent of those commonly included in omnibus immigrant laws. Just recently, in July 2021, Texas Governor Greg Abbott issued an executive order granting state troopers with the Texas Department of Public Safety the authority to stop any vehicle upon "reasonable suspicion" that it may be transporting migrants as a supposed public health intervention to curb the spread of COVID-19 (The Associated Press, 2021). This order has been compared to the "show me your papers" provision in Arizona's SB 1070 that required police officers to determine the immigration status of any person stopped or detained so long as there was "reasonable suspicion" that the person was undocumented (Hansen, 2021). Thus, the findings of this study not only illuminate the impacts of omnibus immigrant laws specifically, but also shed light on the potential negative effects of other state-level, single-issue restrictive immigrant policies commonly passed throughout the US each year on US-citizen children. In turn, this dissertation research may be used to inform contemporary immigrant policy reform, debate, and advocacy work directed at both the federal and sub-federal levels. For example, these findings can support efforts to overturn existing state-level omnibus immigrant laws and other single-issue restrictive immigrant policies, as well as provide data that deters politicians from passing future restrictive policies. Further, this dissertation may also inform efforts to expand access to prenatal and postnatal care to all pregnant women, regardless of their nativity or documentation status, as a federal mandate.

APPENDICES

Appendix A. Summary of Omnibus Immigrant Laws Passed by State (Adapted from Allen, 2016)

State	Bill Number	Date Signed (MM/DD/YYYY)	Date Effective (MM/DD/YYYY)	Status[1]
		Alabama		
AL	HB 56	06/09/2011	09/01/2011	Enacted
AL	HB 658	05/18/2012	05/18/2012	Enacted
		Arizona		
AZ	HB 2779	07/02/2007	01/01/2008	Enacted
AZ	SB 1070	04/23/2010	07/29/2010	Enacted
AZ	HB 2162	04/30/2010	07/29/2010	Enacted
		Colorado		
CO	SB 90	05/01/2006	05/01/2006	Repealed 04/26/2013
		Georgia		
GA	SB 529	04/17/2006	07/01/2007	Enacted
GA	HB 2	05/11/2009	01/01/2010	Enacted
GA	HB 87	05/13/2011	07/01/2011	Enacted
GA	SB 160	04/24/2013	07/01/2013	Enacted
		Indiana		
IN	SB 590	05/10/2011	07/01/2011	Enacted
		Missouri		
MO	HB 1549	07/07/2008	08/28/2008	Enacted
MO	HB 390	07/07/2009	07/07/2009	Enacted
		Nebraska		
NE	LB 403	04/08/2009	10/01/2009	Enacted
		Oklahoma		
OK	HB 1804	05/08/2007	11/01/2007	Enacted
		South Carolina		
SC	HB 4400	06/04/2008	06/04/2008	Enacted
SC	SB 20	06/27/2011	01/01/2012	Enacted
		Utah		
UT	SB 81	03/13/2008	07/01/2009	Enacted
UT	HB 116, 466, 469, and 497[2]	03/15/2011	05/10/2011	Enacted

Notes: AL = Alabama; AZ = Arizona; CO = Colorado; GA = Georgia; IN = Indiana; MO = Missouri; NE = Nebraska; OK = Oklahoma; SC = South Carolina; UT = Utah. HB = House Bill. SB = Senate Bill. LB = Legislative Bill.

[1]"Status" reflects the status of the bill as of the end of 2014, the final year included in the current study.

[2]This collection of laws were signed into law on the same day by Utah Governor Gary Herbert and are collectively known as The Utah Compact.
Source: Allen, C. D. (2016). *Estimating the Effects of Arizona-Style Omnibus Immigration Policies on Latino Children's Access to Health Care* [PhD Dissertation].

Appendix B. Summary of Key Immigrant-related Provisions in Omnibus Immigrant Laws (Adapted from Allen, 2016)

State	Bill Number	Summary of Key Provisions[1]
		Alabama
AL	HB 56	• Prohibits sanctuary policies; • Requires officials to verify immigration status for any person booked into jails and/or to report suspected; undocumented immigrants who are arrested to federal immigration authorities; • Mandates 287(g) MOU; • Criminal penalties for being present in the state without immigration documentation; • Criminal penalties for transporting, harboring, concealing, or shielding an undocumented immigrant; • Requires employers to use E-Verify; • Criminal penalties for applying to work without immigration documentation; • Limits hiring or working as a day laborer; • Requires agencies to verify legal status for all applications for public benefits; • Limits access to identification documents, including driver's licenses; and • Limits undocumented students' access to postsecondary education.
AL	HB 658	• Criminal penalties for transporting, harboring, concealing, or shielding an undocumented immigrant; • Prohibits knowingly renting to an undocumented immigrant; and • Requires the state to make publicly available a list of all undocumented immigrants who appeared in court for any violation of state law.
		Arizona
AZ	HB 2779	• Prohibits employers from knowingly employing an undocumented immigrant; • Requires employers to use E-Verify; and • Criminal penalties for using false or counterfeit identification documents to obtain employment.
AZ	SB 1070	• Prohibits sanctuary policies; • Requires or authorizes law enforcement to check documentation at any legal stop; • Requires officials to verify immigration status for any person booked into jails and/or to report suspected

State	Bill Number	Summary of Key Provisions[1]
		undocumented immigrants who are arrested to federal immigration authorities; • Allows warrantless arrests; • Criminal penalties for being present in the state without immigration documentation; • Criminal penalties for transporting, harboring, concealing, or shielding an undocumented immigrant; • Criminal penalties for applying to work without immigration documentation; and • Limits hiring or working as a day laborer.
AZ	HB 2162	• Requires or authorizes law enforcement to check documentation at any legal stop.
		Colorado
CO	SB 90	• Prohibits sanctuary policies; • Requires officials to verify immigration status for any person booked into jails and/or to report suspected undocumented immigrants who are arrested to federal immigration authorities; • Criminal penalties for transporting, harboring, concealing, or shielding an undocumented immigrant; • Requires employers to use E-Verify; and • Requires agencies to verify legal status for all applications for public benefits.
		Georgia
GA	SB 529	• Requires officials to verify immigration status for any person booked into jails and/or to report suspected undocumented immigrants who are arrested to federal immigration authorities; • Mandates 287(g) MOU; • Requires employers to use E-Verify; and • Requires agencies to verify legal status for all applications for public benefits.
GA	HB 2	• Prohibits sanctuary policies; and • Requires officials to verify immigration status for any person booked into jails and/or to report suspected undocumented immigrants who are arrested to federal immigration authorities.
GA	HB 87	• Requires or authorizes law enforcement to check documentation at any legal stop; • Requires officials to verify immigration status for any person booked into jails and/or to report suspected undocumented immigrants who are arrested to federal immigration authorities;

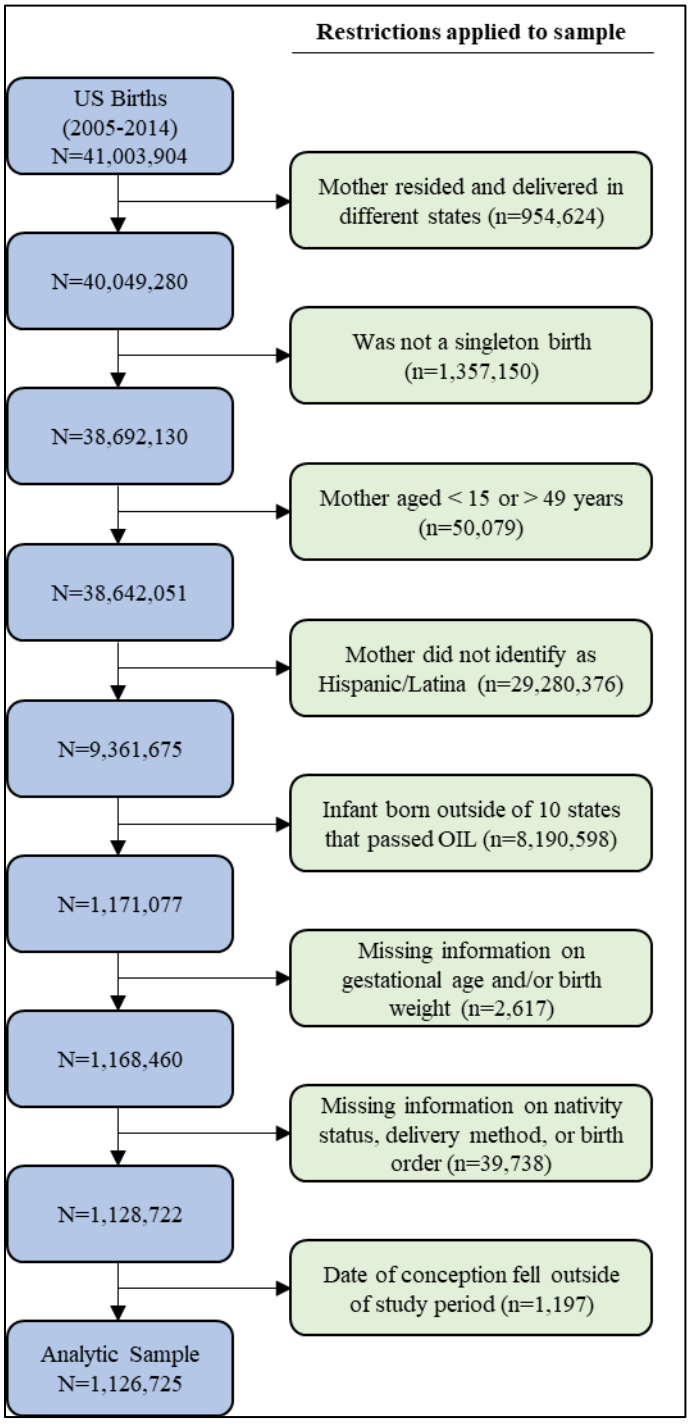
State	Bill Number	Summary of Key Provisions[1]
		• Criminal penalties for transporting, harboring, concealing, or shielding an undocumented immigrant; • Requires employers to use E-Verify; and
GA	SB 160	• Requires agencies to verify legal status for all applications for public benefits.
		Indiana
IN	SB 590	• Prohibits sanctuary policies; • Requires officials to verify immigration status for any person booked into jails and/or to report suspected undocumented immigrants who are arrested to federal immigration authorities; • Allows warrantless arrests; • Criminal penalties for transporting, harboring, concealing, or shielding an undocumented immigrant; • Requires employers to use E-Verify; and • Limits undocumented students' access to postsecondary education.
		Missouri
MO	HB 1549	• Prohibits sanctuary policies; • Requires officials to verify immigration status for any person booked into jails and/or to report suspected undocumented immigrants who are arrested to federal immigration authorities; • Mandates 287(g) MOU; • Criminal penalties for transporting, harboring, concealing, or shielding an undocumented immigrant; • Requires employers to use E-Verify; • Requires agencies to verify legal status for all applications for public benefits; and • Limits access to identification documents, including driver's licenses.
MO	HB 390	• Limits undocumented students' access to postsecondary education; and • Requires employers to use E-Verify.
		Nebraska
NE	LB 403	• Requires employers to use E-Verify; and • Requires agencies to verify legal status for all applications for public benefits.
		Oklahoma
OK	HB 1804	• Prohibits sanctuary policies; • Requires officials to verify immigration status for any person booked into jails and/or to report suspected undocumented immigrants who are arrested to federal immigration authorities;

State	Bill Number	Summary of Key Provisions[1]
		• Mandates 287(g) MOU; • Criminal penalties for transporting, harboring, concealing, or shielding an undocumented immigrant; • Requires employers to use E-Verify; • Requires agencies to verify legal status for all applications for public benefits; • Limits access to identification documents, including driver's licenses; and • Limits undocumented students' access to postsecondary education.
		South Carolina
SC	HB 4400	• Prohibits sanctuary policies; • Requires officials to verify immigration status for any person booked into jails and/or to report suspected undocumented immigrants who are arrested to federal immigration authorities; • Mandates 287(g) MOU; • Criminal penalties for transporting, harboring, concealing, or shielding an undocumented immigrant; • Requires employers to use E-Verify; • Requires agencies to verify legal status for all applications for public benefits; and • Limits undocumented students' access to postsecondary education.
SC	SB 20	• Prohibits sanctuary policies; • Requires or authorizes law enforcement to check documentation at any legal stop; • Mandates 287(g) MOU; • Criminal penalties for being present in the state without immigration documentation; and • Requires employers to use E-Verify.
		Utah
UT	SB 81	• Prohibits sanctuary policies; • Requires officials to verify immigration status for any person booked into jails and/or to report suspected undocumented immigrants who are arrested to federal immigration authorities; • Criminal penalties for transporting, harboring, concealing, or shielding an undocumented immigrant; • Requires employers to use E-Verify; • Requires agencies to verify legal status for all applications for public benefits; and • Limits access to identification documents, including driver's licenses.[2]

State	Bill Number	Summary of Key Provisions[1]
UT	HB 116, 466, 469, and 497[2]	• Prohibits sanctuary policies; • Requires or authorizes law enforcement to check documentation at any legal stop; • Allows warrantless arrests; • Criminal penalties for transporting, harboring, concealing, or shielding an undocumented immigrant; • Requires employers to use E-Verify; • Requires agencies to verify legal status for all applications for public benefits; and • Limits access to identification documents, including driver's licenses.[2]

Notes: AL = Alabama; AZ = Arizona; CO = Colorado; GA = Georgia; IN = Indiana; MO = Missouri; NE = Nebraska; OK = Oklahoma; SC = South Carolina; UT = Utah. HB = House Bill. SB = Senate Bill. LB = Legislative Bill. MOU = Memorandum of Understanding.
[1]This table outlines key provisions that are commonly included in omnibus immigrant legislation but is not a complete list of all provisions included in each policy.
[2]Undocumented immigrants may be issued a "driving privilege card" but not a driver's license.
[3]This collection of laws were signed into law on the same day by Utah Governor Gary Herbert and are collectively known as The Utah Compact.
Source: Allen, C. D. (2016). *Estimating the Effects of Arizona-Style Omnibus Immigration Policies on Latino Children's Access to Health Care* [PhD Dissertation].

Appendix C. Flowchart of the Sample Selection Procedure



Appendix D. Results of Model Building Exercises for Aim 1 Outcomes

Aim 1, Question 1

Table D1. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Preterm Birth among Infants Born to Latina Women, 2005-2014

	Preterm Birth aOR (95% CI)		
Policy Variables	**Model 1**	**Model 2**	**Model 3**
Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)	1.00 (0.99-1.00)
OIL passed	1.05 (1.02-1.08)**	1.03 (1.00-1.06)*	1.05 (1.01-1.08)**
OIL, post-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)	1.00 (0.99-1.00)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state). Model 1 includes only time and policy variables; Model 2 adds individual-level covariates; and Model 3 adds state-level covariates. Individual-level covariates included women's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; p<0.001***

Aim 1, Question 2

Table D2. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Low Birth Weight among Infants Born to Latina Women, 2005-2014

	Low Birth Weight aOR (95% CI)		
Policy Variables	**Model 1**	**Model 2**	**Model 3**
Time, pre-policy trend	1.01 (1.00-1.01)*	1.01(1.00-1.01)**	1.01 (1.00-1.01)
OIL passed	0.99 (0.96-1.02)	0.98 (0.95-1.00)	1.03 (0.96-1.09)
OIL, post-policy trend	1.00 (1.00-1.01)	1.00 (1.00-1.00)	1.00 (1.00-1.00)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state). Model 1 includes only time and policy variables; Model 2 adds individual-level covariates; and Model 3 adds state-level covariates. Individual-level covariates included women's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; p<0.001***

Appendix E. Results of Main Analyses with Censoring of Three Quarter-Years (nine months) Prior to Policy Passage

Aim 1, Question 1

Table E1. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Preterm Birth among Infants Born to Latina Women, 2005-2014

Policy Variables	aOR (95% CI)
Time, pre-policy trend	1.00 (0.99-1.00)
OIL passed	1.05 (1.01-1.09)*
OIL, post-policy trend	1.00 (0.99-1.01)

Notes: Adjusted odds ratio (95% confidence interval) shown. Model utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; p<0.001***

Aim 1, Question 2

Table E2. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Low Birth Weight among Infants Born to Latina Women, 2005-2014

Policy Variables	aOR (95% CI)
Time, pre-policy trend	1.01 (1.00-1.01)**
OIL passed	1.02 (0.95-1.09)
OIL, post-policy trend	1.00 (1.00-1.01)

Notes: Adjusted odds ratio (95% confidence interval) shown. Model utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; p<0.001***

Aim 1, Question 3

Table E3. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratios of Preterm Birth and Low Birth Weight among Infants Born to Foreign- versus US-born Latina Women, 2005-2014

		aOR (95% CI)	
	Policy Variables	**Foreign-born**	**US-born**
Panel 1: PTB	Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)
	OIL passed	1.06 (1.01-1.12)*	1.04 (0.95-1.13)
	OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)
Panel 2: LBW	Time, pre-policy trend	1.00 (1.00-1.01)	1.01 (1.00-1.01)
	OIL passed	1.04 (0.98-1.09)	1.03 (0.93-1.13)
	OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (1.00-1.00)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PTB = Preterm birth; LBW = Low birth weight; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table E4. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Preterm Birth and Low Birth Weight among Infants born to Foreign-Born Latinas from Mexico versus Guatemala, Honduras, and El Salvador, 2005-2014

		aOR (95% CI)	
	Policy Variables	**Women born in Mexico**	**Women born in Guatemala, Honduras, or El Salvador**
Panel 1: PTB	Time, pre-policy trend	1.00 (0.99-1.00)	1.01 (1.00-1.01)
	OIL passed	1.07 (1.02-1.13)**	0.90 (0.81-0.99)*
	OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)
Panel 2: LBW	Time, pre-policy trend	1.00 (1.00-1.01)	1.00 (0.99-1.01)
	OIL passed	1.07 (1.03-1.14)*	0.92 (0.80-1.06)
	OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PTB = Preterm birth; LBW = Low birth weight; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table E5. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Low Birth Weight among Full Term Infants Born to Foreign- versus US-born Latina Women, 2005-2014

Policy Variables	**aOR (95% CI)**	
	Foreign-born	**US-born**
Time, pre-policy trend	1.00 (0.99-1.01)	1.01 (1.00-1.01)***
OIL passed	1.00 (0.91-1.09)	1.10 (1.01-1.19)*
OIL, post-policy trend	1.01 (1.00-1.02)*	1.00 (1.00-1.01)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PTB = Preterm birth; LBW = Low birth weight; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Appendix F. Descriptive Statistics of Infants born to Latina, Black, and White Women in States with Omnibus Immigrant Legislation, 2005-2014[a]

		Mother's Race/Ethnicity			
	Total	**Latina**	**Black**	**White**	**p-value[b]**
	N=5,937,135	**N=1,126,725**	**N=973,081**	**N=3,837,329**	
MOTHER'S CHARACTERISTICS					
Age, years					
15-19	10.7	14.0	16.9	8.1	<0.001
20-24	27.9	29.4	36.0	25.5	
25-29	30.0	27.3	25.2	31.3	
30-34	21.1	18.8	14.3	23.5	
35-39	8.9	8.6	6.2	9.7	
40-49	1.9	1.9	1.5	1.9	
Married					
No	40.2	48.7	75.9	28.6	<0.001
Yes	59.8	51.3	24.1	71.4	
Late entry into prenatal care[c]					
No	69.1	56.7	61.0	73.8	<0.001
Yes	30.9	43.4	39.0	26.3	
Inadequate prenatal care[c]					
No	83.6	73.9	75.5	87.6	<0.001
Yes	16.4	26.1	24.5	12.4	
Delivery method					
Vaginal	71.3	75.4	67.6	71.0	<0.001
Cesarean section	28.7	24.6	32.4	29.0	
FATHER'S CHARACTERISTICS					
Age, years					
Less than 20	3.3	4.7	4.3	2.7	<0.001
20-24	16.2	19.5	16.7	15.1	
25-29	24.8	25.1	16.6	26.9	
30-34	22.2	19.7	12.1	25.4	
35-39	11.9	10.6	6.9	13.6	
40-44	4.4	4.2	3.1	4.8	
45 and over	1.8	1.9	1.7	1.8	
Unknown	15.3	14.3	38.6	9.7	
Race/Ethnicity					
Latino	16.1	68.7	1.2	4.4	<0.001
White	54.5	11.7	2.7	80.2	
Black	11.1	2.5	54.1	2.7	
Other	2.1	1.5	1.7	2.4	
Unknown	16.2	15.5	40.2	10.3	
INFANT'S CHARACTERISTICS					
Sex					
Male	51.2	51.1	50.8	51.3	<0.001
Female	48.8	48.9	49.3	48.7	
First born infant					
No	66.5	70.9	66.4	65.2	<0.001

	Total N=5,937,135	Mother's Race/Ethnicity			p-value[b]
		Latina N=1,126,725	Black N=973,081	White N=3,837,329	
Yes	33.5	29.1	33.6	34.8	
Birth season					
Spring	24.5	23.9	23.3	25.0	<0.001
Summer	26.2	26.4	26.0	26.3	
Autumn	25.2	25.6	25.6	25.0	
Winter	24.0	24.1	25.1	23.7	
Preterm birth					
No	89.1	88.9	83.6	90.6	<0.001
Yes	10.9	11.1	16.4	9.4	
Low birth weight					
No	93.4	94.3	87.8	94.5	<0.001
Yes	6.6	5.7	12.2	5.5	
Low birth weight among infants born to term[d]					
No	97.1	97.5	94.6	97.6	<0.001
Yes	2.9	2.5	5.4	2.4	

Notes: Proportions are shown and may not add to 100 due to rounding. Late entry into prenatal care defined as initiation after the first trimester. Inadequate prenatal care is scored according to the Adequate Prenatal Care Utilization (APNCU) Index and denotes prenatal care that is initiated after the 4th month of pregnancy or attending less than 50% of recommended visits. Preterm birth is defined as births occurring before 37 weeks gestation. Low birth weight is defined as infant weight less than 2500 grams at delivery.

[a]States that passed at least one omnibus immigrant law include: Alabama, Arizona, Colorado, Georgia, Indiana, Missouri, Nebraska, Oklahoma, South Carolina, and Utah.

[b]Results of Pearson's chi-square tests of differences across categorical variables across mother's nativity status.

[c]Restricted to those with complete information on prenatal care utilization indicators (Total N=3,960,261; Latina N=597,026; Black N=631,299; White N=2,731,936)

[d]Restricted to those who delivered low weight infants at 37 weeks gestation or later (Total N=5,290,585; Latina N=1,001,502; Black N=813,845; White N=3,475,238)

Appendix G. Descriptive Statistics of Infants born to Latina Women in States with Omnibus Immigrant Legislation Comparing Observations with Complete versus Missing Information on Prenatal Care Utilization Indicators, 2005-2014[a]

	Prenatal Care Utilization Indicators		p-value[b]
	Complete Information N=653,984	Missing Information N=55,880	
MOTHER'S CHARACTERISTICS			
Nativity status			
US-born	36.9	26.9	<0.001
Foreign-born	63.1	73.1	
National origin			
Mexico	72.5	68.5	<0.001
Puerto Rico	3.1	3.4	
Cuba	0.7	1.0	
Central and South American	11.7	17.1	
Other or Unknown	12.1	10.1	
Age, years			
15-19	13.4	13.0	<0.001
20-24	29.1	27.8	
25-29	27.7	27.8	
30-34	19.2	19.9	
35-39	8.8	9.5	
40-49	1.9	2.0	
Married			
No	45.6	52.0	<0.001
Yes	54.4	48.0	
Delivery method			
Vaginal	75.1	74.2	<0.001
Cesarean section	24.9	25.8	
FATHER'S CHARACTERISTICS			
Age, years			
Less than 20	4.3	3.8	<0.001
20-24	19.2	18.3	
25-29	25.7	25.6	
30-34	20.2	20.7	
35-39	10.9	11.6	
40-44	4.3	4.7	
45 and over	1.8	1.9	
Unknown	13.5	13.3	
Race/Ethnicity			
Latino	67.3	69.4	<0.001
White	13.3	9.1	
Black	2.7	3.3	

	Prenatal Care Utilization Indicators		p-value[b]
	Complete Information N=653,984	Missing Information N=55,880	
Other	1.7	1.1	
Unknown	14.9	17.2	
INFANT'S CHARACTERISTICS			
Sex			
Male	51.1	51.2	0.866
Female	48.9	48.8	
First born infant			
No	71.3	69.5	<0.001
Yes	28.7	30.5	
Birth season			
Spring	24.3	23.6	<0.001
Summer	26.8	25.8	
Autumn	25.2	25.3	
Winter	23.7	25.4	
Preterm birth			
No	89.3	88.9	0.003
Yes	10.7	11.1	
Low birth weight			
No	94.2	93.3	<0.001
Yes	5.8	6.7	

Notes: Proportions are shown and may not add to 100 due to rounding. Preterm birth is defined as births occurring before 37 weeks gestation. Low birth weight is defined as an infant weight less than 2500 grams at delivery.

[a]States that passed at least one omnibus immigrant law and are included in analyses on prenatal care indicators are: Colorado, Georgia, Indiana, Missouri, Nebraska, Oklahoma, South Carolina, and Utah.

[b]Results of Pearson's chi-square tests of differences across categorical variables across mother's nativity status.

Appendix H. Results of Model Building Exercises for Aim 2 Outcomes

Aim 2, Question 1

Table H1. The Effects of Omnibus Immigrant Laws on Adjusted Odds Ratio of Late Entry into Prenatal Care among Infants Born to Latina Women, 2005-2014

	Late Entry into Prenatal Care aOR (95% CI)		
Policy Variables	**Model 1**	**Model 2**	**Model 3**
Time, pre-policy trend	0.98 (0.97-0.99)***	0.99 (0.98-0.99)***	0.98 (0.98-0.99)***
OIL passed	0.90 (0.73-1.10)	0.88 (0.71-1.09)	0.89 (0.73-1.07)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)	1.00 (0.99-1.01)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state). Model 1 includes only time and policy variables; Model 2 adds individual-level covariates; and Model 3 adds state-level covariates. Individual-level covariates included women's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; p<0.001***

Aim 2, Question 2

Table H2. The Effects of Omnibus Immigrant Laws on Adjusted Odds Ratio of Inadequate Prenatal Care Utilization among Infants Born to Latina Women, 2005-2014

	Inadequate Utilization of PNC aOR (95% CI)		
Policy Variables	**Model 1**	**Model 2**	**Model 3**
Time, pre-policy trend	0.99 (0.99-1.00)***	1.00 (0.99-1.00)	1.00 (0.99-1.01)
OIL passed	1.25 (1.09-1.44)**	1.25 (1.08-1.45)**	1.20 (0.99-1.45)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)	1.00 (0.99-1.02)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state). Model 1 includes only time and policy variables; Model 2 adds individual-level covariates; and Model 3 adds state-level covariates. Individual-level covariates included women's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; p<0.001***

Appendix I. Results of Sensitivity Analyses for Aim 1, Question 1

Table I1. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Preterm Birth among Infants Born to Latina Women, 2005-2014

Policy Variables	**Preterm Birth** aOR (95% CI)
STATE REMOVED: ALABAMA	
Time, pre-policy trend	1.00 (1.00-1.00)
OIL passed	1.06 (1.02-1.11)**
OIL, post-policy trend	1.00 (0.99-1.00)
STATE REMOVED: ARIZONA	
Time, pre-policy trend	1.00 (0.99-1.00)
OIL passed	1.04 (1.00-1.09)*
OIL, post-policy trend	1.00 (0.99-1.01)
STATE REMOVED: COLORADO	
Time, pre-policy trend	1.00 (0.99-1.01)
OIL passed	1.03 (0.99-1.08)
OIL, post-policy trend	1.00 (0.99-1.01)
STATE REMOVED: GEORGIA	
Time, pre-policy trend	1.00 (0.99-1.00)
OIL passed	1.05 (1.00-1.09)*
OIL, post-policy trend	1.00 (0.99-1.00)
STATE REMOVED: INDIANA	
Time, pre-policy trend	1.00 (0.99-1.00)
OIL passed	1.05 (1.02-1.09)**
OIL, post-policy trend	1.00 (0.99-1.00)
STATE REMOVED: MISSOURI	
Time, pre-policy trend	1.00 (0.99-1.00)
OIL passed	1.05 (1.01-1.08)*
OIL, post-policy trend	1.00 (0.99-1.00)
STATE REMOVED: NEBRASKA	
Time, pre-policy trend	1.00 (0.99-1.00)
OIL passed	1.05 (1.01-1.09)**
OIL, post-policy trend	1.00 (0.99-1.00)
STATE REMOVED: OKLAHOMA	
Time, pre-policy trend	1.00 (0.99-1.00)
OIL passed	1.04 (1.01-1.08)*
OIL, post-policy trend	1.00 (0.99-1.00)
STATE REMOVED: SOUTH CAROLINA	
Time, pre-policy trend	1.00 (0.99-1.00)
OIL passed	1.05 (1.01-1.09)**

Policy Variables	**Preterm Birth** aOR (95% CI)
OIL, post-policy trend	1.00 (0.99-1.01)
STATE REMOVED: UTAH	
Time, pre-policy trend	1.00 (0.99-1.00)
OIL passed	1.05 (1.01-1.09)*
OIL, post-policy trend	1.00 (0.99-1.01)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table I2. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Preterm Birth among Infants Born to US-born Black and White Women, 2005-2014

	Preterm Birth aOR (95% CI)	
Policy Variables	**Black Women**	**White Women**
Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)
OIL passed	1.03 (0.98-1.09)	1.01 (0.98-1.05)
OIL, post-policy trend	1.00 (0.99-1.00)	1.00 (1.00-1.00)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Appendix J. Results of Sensitivity Analyses for Aim 1, Question 2

Table J1. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Low Birth Weight among Infants Born to Latina Women, 2005-2014

Policy Variables	**Low Birth Weight** aOR (95% CI)
STATE REMOVED: ALABAMA	
Time, pre-policy trend	1.01 (1.01-1.01)***
OIL passed	1.04 (0.97-1.12)
OIL, post-policy trend	1.00 (0.99-1.00)
STATE REMOVED: ARIZONA	
Time, pre-policy trend	1.00 (0.99-1.00)
OIL passed	1.00 (0.97-1.04)
OIL, post-policy trend	1.00 (1.00-1.00)
STATE REMOVED: COLORADO	
Time, pre-policy trend	1.00 (0.99-1.01)
OIL passed	1.05 (1.01-1.08)*
OIL, post-policy trend	1.00 (0.99-1.00)
STATE REMOVED: GEORGIA	
Time, pre-policy trend	1.01 (1.00-1.01)**
OIL passed	1.04 (0.98-1.11)
OIL, post-policy trend	1.00 (1.00-1.00)
STATE REMOVED: INDIANA	
Time, pre-policy trend	1.01 (1.00-1.01)*
OIL passed	1.04 (0.97-1.11)
OIL, post-policy trend	1.00 (0.99-1.01)
STATE REMOVED: MISSOURI	
Time, pre-policy trend	1.01 (1.00-1.01)**
OIL passed	1.02 (0.96-1.09)
OIL, post-policy trend	1.00 (1.00-1.00)
STATE REMOVED: NEBRASKA	
Time, pre-policy trend	1.01 (1.00-1.01)**
OIL passed	1.04 (0.97-1.11)
OIL, post-policy trend	1.00 (1.00-1.01)
STATE REMOVED: OKLAHOMA	
Time, pre-policy trend	1.01 (1.00-1.01)**
OIL passed	1.03 (0.95-1.11)
OIL, post-policy trend	1.00 (1.00-1.01)
STATE REMOVED: SOUTH CAROLINA	
Time, pre-policy trend	1.01 (1.00-1.01)**
OIL passed	1.02 (0.96-1.09)

Policy Variables	**Low Birth Weight** aOR (95% CI)
OIL, post-policy trend	1.00 (1.00-1.00)
STATE REMOVED: UTAH	
Time, pre-policy trend	1.01 (1.00-1.01)*
OIL passed	1.01 (0.95-1.07)
OIL, post-policy trend	1.00 (1.00-1.00)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table J2. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Birth Low Weight among Full Term Infants Born to Latina Women, 2005-2014

Policy Variables	**Low Birth Weight** aOR (95% CI)
STATE REMOVED: ALABAMA	
Time, pre-policy trend	1.01 (1.00-1.01)**
OIL passed	1.05 (0.98-1.13)
OIL, post-policy trend	1.00 (1.00-1.01)
STATE REMOVED: ARIZONA	
Time, pre-policy trend	0.99 (0.99-1.00)*
OIL passed	1.01 (0.94-1.08)
OIL, post-policy trend	1.00 (1.00-1.01)
STATE REMOVED: COLORADO	
Time, pre-policy trend	1.00 (0.98-1.00)
OIL passed	1.11 (1.03-1.20)**
OIL, post-policy trend	1.01 (1.00-1.02)
STATE REMOVED: GEORGIA	
Time, pre-policy trend	1.00 (1.00-1.01)
OIL passed	1.07 (1.02-1.12)**
OIL, post-policy trend	1.00 (1.00-1.01)
STATE REMOVED: INDIANA	
Time, pre-policy trend	1.00 (1.00-1.01)
OIL passed	1.04 (0.96-1.12)
OIL, post-policy trend	1.00 (1.00-1.01)
STATE REMOVED: MISSOURI	
Time, pre-policy trend	1.00 (1.00-1.01)
OIL passed	1.03 (0.96-1.10)
OIL, post-policy trend	1.00 (1.00-1.01)
STATE REMOVED: NEBRASKA	
Time, pre-policy trend	1.00 (1.00-1.01)
OIL passed	1.05 (0.98-1.12)
OIL, post-policy trend	1.01 (1.00-1.01)
STATE REMOVED: OKLAHOMA	
Time, pre-policy trend	1.00 (1.00-1.01)
OIL passed	1.03 (0.96-1.11)
OIL, post-policy trend	1.01 (1.00-1.01)
STATE REMOVED: SOUTH CAROLINA	
Time, pre-policy trend	1.00 (1.00-1.01)
OIL passed	1.04 (0.97-1.10)
OIL, post-policy trend	1.00 (1.00-1.01)
STATE REMOVED: UTAH	

Policy Variables	**Low Birth Weight** aOR (95% CI)
Time, pre-policy trend	1.00 (1.00-1.01)
OIL passed	1.02 (0.95-1.09)
OIL, post-policy trend	1.01 (1.00-1.01)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table J3. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Low Birth Weight among Infants Born to US-born Black and White Women, 2005-2014

		Low Birth Weight aOR (95% CI)	
	Policy Variables	**Black Women**	**White Women**
All infants	Time, pre-policy trend	1.00 (1.00-1.01)	1.00 (0.99-1.01)
	OIL passed	0.99 (0.95-1.03)	0.98 (0.95-1.01)
	OIL, post-policy trend	1.00 (0.99-1.00)**	1.00 (1.00-1.00)
Infants born to term	Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.01)
	OIL passed	1.00 (0.93-1.07)	0.96 (0.91-1.01)
	OIL, post-policy trend	1.00 (1.00-1.01)	1.01 (1.00-1.01)*

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Appendix K. Results of Sensitivity Analyses for Aim 1, Question 3

Table K1. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Preterm Birth among Infants Born to Foreign- versus US-born Latina Women, 2005-2014

	Preterm Birth aOR (95% CI)	
Policy Variables	**Foreign-born**	**US-born**
STATE REMOVED: ALABAMA		
Time, pre-policy trend	1.00 (1.00-1.01)	1.00 (0.99-1.00)
OIL passed	1.07 (1.03-1.11)***	1.05 (0.98-1.13)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)
STATE REMOVED: ARIZONA		
Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)
OIL passed	1.07 (1.01-1.12)*	1.01 (0.94-1.10)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)
STATE REMOVED: COLORADO		
Time, pre-policy trend	1.00 (0.98-1.01)	1.00 (0.99-1.01)
OIL passed	1.05 (0.99-1.12)	1.00 (0.94-1.07)
OIL, post-policy trend	1.00 (0.99-1.02)	1.00 (0.99-1.01)
STATE REMOVED: GEORGIA		
Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)
OIL passed	1.04 (1.01-1.08)*	1.06 (0.99-1.12)
OIL, post-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)
STATE REMOVED: INDIANA		
Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)
OIL passed	1.06 (1.02-1.10)**	1.06 (1.00-1.13)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)
STATE REMOVED: MISSOURI		
Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)
OIL passed	1.06 (1.02-1.10)**	1.04 (0.98-1.11)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)
STATE REMOVED: NEBRASKA		
Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)
OIL passed	1.06 (1.02-1.09)**	1.05 (0.98-1.12)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)
STATE REMOVED: OKLAHOMA		
Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.01)
OIL passed	1.05 (1.01-1.09)**	1.04 (0.97-1.11)
OIL, post-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)
STATE REMOVED: SOUTH CAROLINA		
Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)

Policy Variables	**Preterm Birth aOR (95% CI)**	
	Foreign-born	**US-born**
OIL passed	1.06 (1.02-1.10)**	1.05 (0.98-1.12)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)
STATE REMOVED: UTAH		
Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)
OIL passed	1.06 (1.02-1.10)**	1.05 (0.98-1.12)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table K2. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Low Birth Weight among Infants Born to Foreign- versus US-born Latina Women, 2005-2014

Policy Variables	**Low Birth Weight aOR (95% CI)**	
	Foreign-born	**US-born**
STATE REMOVED: ALABAMA		
Time, pre-policy trend	1.01 (1.00-1.01)*	1.01 (1.01-1.01)***
OIL passed	1.05 (1.00-1.11)	1.04 (0.96-1.13)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (1.00-1.00)
STATE REMOVED: ARIZONA		
Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (1.00-1.00)
OIL passed	1.03 (0.97-1.08)	0.99 (0.96-1.02)
OIL, post-policy trend	1.00 (1.00-1.01)	1.00 (1.00-1.00)
STATE REMOVED: COLORADO		
Time, pre-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)
OIL passed	1.07 (1.02-1.11)**	1.01 (0.97-1.04)
OIL, post-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)
STATE REMOVED: GEORGIA		
Time, pre-policy trend	1.00 (1.00-1.01)	1.01 (1.00-1.01)***
OIL passed	1.05 (0.99-1.11)	1.05 (0.99-1.12)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (1.00-1.00)
STATE REMOVED: INDIANA		
Time, pre-policy trend	1.01 (1.00-1.01)	1.01 (1.00-1.01)***
OIL passed	1.05 (1.00-1.10)*	1.04 (0.97-1.12)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)
STATE REMOVED: MISSOURI		
Time, pre-policy trend	1.00 (1.00-1.01)	1.01 (1.01-1.01)***
OIL passed	1.04 (0.98-1.09)	1.03 (0.95-1.10)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (1.00-1.00)
STATE REMOVED: NEBRASKA		
Time, pre-policy trend	1.00 (1.00-1.01)	1.01 (1.01-1.01)***
OIL passed	1.05 (1.00-1.11)	1.04 (0.97-1.13)
OIL, post-policy trend	1.00 (1.00-1.01)	1.00 (1.00-1.00)
STATE REMOVED: OKLAHOMA		
Time, pre-policy trend	1.00 (1.00-1.01)	1.01 (1.01-1.01)***
OIL passed	1.04 (0.98-1.10)	1.04 (0.95-1.14)
OIL, post-policy trend	1.00 (1.00-1.01)	1.00 (1.00-1.00)
STATE REMOVED: SOUTH CAROLINA		
Time, pre-policy trend	1.00 (1.00-1.01)	1.01 (1.01-1.01)***
OIL passed	1.03 (0.98-1.08)	1.03 (0.95-1.11)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (1.00-1.00)

Policy Variables	**Low Birth Weight aOR (95% CI)**	
	Foreign-born	**US-born**
STATE REMOVED: UTAH		
Time, pre-policy trend	1.00 (1.00-1.01)	1.01 (1.01-1.01)***
OIL passed	1.02 (0.98-1.06)	1.02 (0.95-1.10)
OIL, post-policy trend	1.00 (1.00-1.01)	1.00 (1.00-1.00)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table K3. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Low Birth Weight among Full Term Infants Born to Foreign- versus US-born Latina Women, 2005-2014

	Low Birth Weight aOR (95% CI)	
Policy Variables	**Foreign-born**	**US-born**
STATE REMOVED: ALABAMA		
Time, pre-policy trend	1.00 (0.99-1.01)	1.01 (1.01-1.01)***
OIL passed	1.01 (0.95-1.07)	1.12 (1.05-1.19)***
OIL, post-policy trend	1.01 (1.00-1.02)	1.00 (1.00-1.00)
STATE REMOVED: ARIZONA		
Time, pre-policy trend	0.99 (0.98-1.00)	1.00 (0.99-1.00)***
OIL passed	1.00 (0.90-1.12)	1.05 (0.98-1.13)
OIL, post-policy trend	1.01 (1.00-1.02)**	1.00 (0.99-1.00)
STATE REMOVED: COLORADO		
Time, pre-policy trend	0.99 (0.98-0.99)***	1.00 (0.99-1.00)
OIL passed	1.10 (1.02-1.18)*	1.14 (1.03-1.26)*
OIL, post-policy trend	1.01 (1.00-1.02)	1.00 (0.99-1.01)
STATE REMOVED: GEORGIA		
Time, pre-policy trend	1.00 (0.99-1.01)	1.01 (1.00-1.01)***
OIL passed	1.02 (0.95-1.09)	1.14 (1.09-1.19)***
OIL, post-policy trend	1.01 (1.00-1.01)	1.00 (1.00-1.00)
STATE REMOVED: INDIANA		
Time, pre-policy trend	1.00 (0.99-1.01)	1.01 (1.00-1.01)**
OIL passed	1.00 (0.94-1.08)	1.11 (1.03-1.18)**
OIL, post-policy trend	1.01 (1.00-1.02)	1.00 (1.00-1.01)
STATE REMOVED: MISSOURI		
Time, pre-policy trend	1.00 (0.99-1.01)	1.01 (1.00-1.01)***
OIL passed	1.00 (0.92-1.08)	1.10 (1.03-1.17)**
OIL, post-policy trend	1.01 (1.00-1.02)*	1.00 (1.00-1.00)
STATE REMOVED: NEBRASKA		
Time, pre-policy trend	1.00 (0.99-1.01)	1.01 (1.00-1.01)***
OIL passed	1.02 (0.94-1.10)	1.13 (1.07-1.20)***
OIL, post-policy trend	1.01 (1.00-1.02)*	1.00 (1.00-1.00)
STATE REMOVED: OKLAHOMA		
Time, pre-policy trend	1.00 (0.99-1.01)	1.01 (1.00-1.01)
OIL passed	1.00 (0.93-1.06)	1.11 (1.02-1.20)*
OIL, post-policy trend	1.01 (1.00-1.02)**	1.00 (1.00-1.00)
STATE REMOVED: SOUTH CAROLINA		
Time, pre-policy trend	1.00 (0.99-1.01)	1.01 (1.00-1.01)***
OIL passed	1.00 (0.93-1.08)	1.12 (1.05-1.19)***
OIL, post-policy trend	1.01 (1.00-1.02)*	1.00 (1.00-1.00)

Policy Variables	**Low Birth Weight aOR (95% CI)**	
	Foreign-born	**US-born**
STATE REMOVED: UTAH		
Time, pre-policy trend	1.00 (0.99-1.01)	1.01 (1.00-1.01)***
OIL passed	0.99 (0.92-1.07)	1.10 (1.03-1.18)**
OIL, post-policy trend	1.01 (1.00-1.02)**	1.00 (1.00-1.01)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's national origin, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table K4. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Preterm Birth among Infants born to Foreign-born Women from Mexico versus Guatemala, Honduras, or El Salvador, 2005-2014

	Preterm Birth aOR (95% CI)	
Policy Variables	**Women born in Mexico**	**Women born in Guatemala, Honduras, or El Salvador**
STATE REMOVED: ALABAMA		
Time, pre-policy trend	1.00 (1.00-1.01)	1.01 (1.01-1.01)***
OIL passed	1.08 (1.03-1.13)**	0.86 (0.78-0.95)**
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)
STATE REMOVED: ARIZONA		
Time, pre-policy trend	1.00 (0.99-1.00)	1.01 (1.01-1.01)***
OIL passed	1.08 (1.03-1.13)**	0.89 (0.80-0.98)*
OIL, post-policy trend	1.00 (1.00-1.01)	1.00 (0.99-1.00)
STATE REMOVED: COLORADO		
Time, pre-policy trend	1.00 (0.98-1.01)	1.00 (1.00-1.01)
OIL passed	1.05 (1.00-1.10)	0.93 (0.86-1.02)
OIL, post-policy trend	1.00 (0.99-1.02)	1.00 (0.99-1.02)
STATE REMOVED: GEORGIA		
Time, pre-policy trend	1.00 (0.99-1.00)	1.01 (1.01-1.01)***
OIL passed	1.06 (1.02-1.10)**	0.90 (0.80-1.02)
OIL, post-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.00)
STATE REMOVED: INDIANA		
Time, pre-policy trend	1.00 (0.99-1.00)	1.01 (1.01-1.01)***
OIL passed	1.07 (1.03-1.11)***	0.90 (0.78-1.03)
OIL, post-policy trend	1.00 (0.99-1.01)	0.99 (0.99-1.00)*
STATE REMOVED: MISSOURI		
Time, pre-policy trend	1.00 (0.99-1.00)	1.01 (1.01-1.01)***
OIL passed	1.07 (1.03-1.11)***	0.88 (0.80-0.97)**
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)
STATE REMOVED: NEBRASKA		
Time, pre-policy trend	1.00 (0.99-1.00)	1.01 (1.01-1.01)***
OIL passed	1.07 (1.04-1.11)***	0.87 (0.80-0.95)**
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)
STATE REMOVED: OKLAHOMA		
Time, pre-policy trend	1.00 (0.99-1.00)	1.01 (1.01-1.01)***
OIL passed	1.06 (1.03-1.10)**	0.90 (0.81-1.00)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)*
STATE REMOVED: SOUTH CAROLINA		
Time, pre-policy trend	1.00 (0.99-1.00)	1.01 (1.01-1.01)***

Policy Variables	Preterm Birth aOR (95% CI)	
	Women born in Mexico	**Women born in Guatemala, Honduras, or El Salvador**
OIL passed	1.07 (1.04-1.11)***	0.86 (0.78-0.95)**
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)
STATE REMOVED: UTAH		
Time, pre-policy trend	1.00 (0.99-1.00)	1.01 (1.01-1.01)
OIL passed	1.07 (1.03-1.10)***	0.89 (0.80-0.99)*
OIL, post-policy trend	1.00 (0.99-1.01)	0.99 (0.99-1.00)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table K5. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Low Birth Weight among Infants born to Foreign-born Women from Mexico versus Guatemala, Honduras, or El Salvador, 2005-2014

	Low Birth Weight aOR (95% CI)	
Policy Variables	**Women born in Mexico**	**Women born in Guatemala, Honduras, or El Salvador**
STATE REMOVED: ALABAMA		
Time, pre-policy trend	1.01 (1.00-1.01)*	1.00 (0.99-1.01)
OIL passed	1.07 (1.02-1.12)**	0.93 (0.82-1.05)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)
STATE REMOVED: ARIZONA		
Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.01)
OIL passed	1.05 (0.98-1.12)	0.92 (0.84-1.01)
OIL, post-policy trend	1.00 (1.00-1.01)	1.00 (1.00-1.01)
STATE REMOVED: COLORADO		
Time, pre-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)
OIL passed	1.11 (1.06-1.16)***	0.93 (0.81-1.05)
OIL, post-policy trend	1.00 (0.99-1.00)	1.01 (0.99-1.02)
STATE REMOVED: GEORGIA		
Time, pre-policy trend	1.01 (1.00-1.01)	1.00 (0.99-1.01)
OIL passed	1.07 (1.01-1.13)*	0.95 (0.81-1.11)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)
STATE REMOVED: INDIANA		
Time, pre-policy trend	1.01 (1.00-1.01)	1.01 (1.00-1.02)
OIL passed	1.08 (1.03-1.12)***	1.00 (0.85-1.18)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)
STATE REMOVED: MISSOURI		
Time, pre-policy trend	1.00 (1.00-1.01)	1.00 (0.99-1.01)
OIL passed	1.06 (1.01-1.12)*	0.94 (0.83-1.06)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)
STATE REMOVED: NEBRASKA		
Time, pre-policy trend	1.00 (1.00-1.01)	1.01 (0.99-1.01)
OIL passed	1.08 (1.02-1.13)**	0.97 (0.83-1.14)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)
STATE REMOVED: OKLAHOMA		
Time, pre-policy trend	1.01 (1.00-1.01)	1.00 (0.99-1.01)
OIL passed	1.07 (1.01-1.12)*	0.94 (0.85-1.05)
OIL, post-policy trend	1.00 (1.00-1.01)	1.00 (0.99-1.01)
STATE REMOVED: SOUTH CAROLINA		
Time, pre-policy trend	1.01 (1.00-1.01)	1.00 (0.99-1.01)

Policy Variables	Low Birth Weight aOR (95% CI)	
	Women born in Mexico	**Women born in Guatemala, Honduras, or El Salvador**
OIL passed	1.06 (1.01-1.11)*	0.92 (0.82-1.04)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)
STATE REMOVED: UTAH		
Time, pre-policy trend	1.00 (1.00-1.01)	1.00 (1.00-1.01)
OIL passed	1.04 (1.01-1.08)*	0.94 (0.83-1.07)
OIL, post-policy trend	1.00 (1.00-1.01)	1.00 (0.99-1.01)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table K6. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Low Birth Weight among Full Term Infants born to Foreign-born Women from Mexico versus Guatemala, Honduras, or El Salvador, 2005-2014

	Low Birth Weight aOR (95% CI)	
Policy Variables	**Women born in Mexico**	**Women born in Guatemala, Honduras, or El Salvador**
STATE REMOVED: ALABAMA		
Time, pre-policy trend	1.00 (0.99-1.02)	0.99 (0.98-1.01)
OIL passed	1.01 (0.93-1.10)	0.96 (0.73-1.27)
OIL, post-policy trend	1.01 (1.00-1.01)	1.01 (1.00-1.02)
STATE REMOVED: ARIZONA		
Time, pre-policy trend	0.99 (0.98-1.00)	0.99 (0.98-1.00)
OIL passed	1.01 (0.86-1.18)	0.95 (0.74-1.21)
OIL, post-policy trend	1.01 (1.00-1.01)*	1.01 (1.00-1.02)
STATE REMOVED: COLORADO		
Time, pre-policy trend	0.99 (0.98-0.99)***	1.00 (0.97-1.03)
OIL passed	1.13 (1.03-1.24)**	0.87 (0.54-1.40)
OIL, post-policy trend	1.01 (1.00-1.02)	1.00 (0.97-1.04)
STATE REMOVED: GEORGIA		
Time, pre-policy trend	1.00 (0.99-1.01)	0.99 (0.98-1.00)
OIL passed	1.02 (0.92-1.12)	1.04 (0.76-1.42)
OIL, post-policy trend	1.00 (1.00-1.01)	1.00 (0.99-1.01)
STATE REMOVED: INDIANA		
Time, pre-policy trend	1.00 (0.99-1.02)	1.00 (0.98-1.01)
OIL passed	1.01 (0.93-1.10)	0.93 (0.65-1.35)
OIL, post-policy trend	1.00 (1.00-1.01)	1.01 (0.99-1.02)
STATE REMOVED: MISSOURI		
Time, pre-policy trend	1.00 (0.99-1.01)	0.99 (0.98-1.01)
OIL passed	1.01 (0.91-1.11)	0.94 (0.72-1.23)
OIL, post-policy trend	1.01 (1.00-1.01)	1.01 (0.99-1.02)
STATE REMOVED: NEBRASKA		
Time, pre-policy trend	1.00 (0.99-1.02)	1.00 (0.98-1.01)
OIL passed	1.02 (0.92-1.13)	1.06 (0.81-1.39)
OIL, post-policy trend	1.01 (1.00-1.02)	1.01 (0.99-1.02)
STATE REMOVED: OKLAHOMA		
Time, pre-policy trend	1.00 (0.99-1.02)	0.99 (0.98-1.01)
OIL passed	1.01 (0.93-1.10)	0.97 (0.74-1.26)
OIL, post-policy trend	1.01 (1.00-1.02)*	1.01 (1.00-1.02)
STATE REMOVED: SOUTH CAROLINA		
Time, pre-policy trend	1.00 (0.99-1.02)	0.99 (0.98-1.00)

Policy Variables	Low Birth Weight aOR (95% CI)	
	Women born in Mexico	**Women born in Guatemala, Honduras, or El Salvador**
OIL passed	1.01 (0.91-1.11)	1.07 (0.81-1.41)
OIL, post-policy trend	1.01 (1.00-1.01)	1.01 (1.00-1.02)
STATE REMOVED: UTAH		
Time, pre-policy trend	1.00 (0.99-1.01)	0.99 (0.98-1.01)
OIL passed	0.99 (0.91-1.08)	0.98 (0.73-1.30)
OIL, post-policy trend	1.01 (1.00-1.02)*	1.01 (0.99-1.02)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Appendix L. Results of Sensitivity Analyses for Aim 2, Question 1

Table L1. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Late Entry into Prenatal Care among Latina Women, 2005-2014

Policy Variables	**Late Entry into PNC** aOR (95% CI)
STATE REMOVED: COLORADO	
Time, pre-policy trend	0.99 (0.97-1.01)
OIL passed	0.80 (0.52-1.23)
OIL, post-policy trend	1.00 (0.97-1.03)
STATE REMOVED: GEORGIA	
Time, pre-policy trend	0.99 (0.98-1.00)**
OIL passed	0.91 (0.76-1.09)
OIL, post-policy trend	1.00 (0.99-1.01)
STATE REMOVED: INDIANA	
Time, pre-policy trend	0.98 (0.97-1.00)*
OIL passed	0.85 (0.68-1.07)
OIL, post-policy trend	1.00 (0.99-1.02)
STATE REMOVED: MISSOURI	
Time, pre-policy trend	0.99 (0.98-0.99)**
OIL passed	0.90 (0.72-1.09)
OIL, post-policy trend	1.00 (0.99-1.01)
STATE REMOVED: NEBRASKA	
Time, pre-policy trend	0.98 (0.97-0.99)***
OIL passed	0.88 (0.72-1.07)
OIL, post-policy trend	1.00 (0.99-1.01)
STATE REMOVED: OKLAHOMA	
Time, pre-policy trend	0.98 (0.97-0.99)***
OIL passed	0.89 (0.72-1.09)
OIL, post-policy trend	1.00 (0.99-1.01)
STATE REMOVED: SOUTH CAROLINA	
Time, pre-policy trend	0.98 (0.97-0.99)***
OIL passed	0.87 (0.71-1.06)
OIL, post-policy trend	1.00 (0.99-1.01)
STATE REMOVED: UTAH	
Time, pre-policy trend	0.98 (0.97-0.99)**
OIL passed	0.98 (0.92-1.04)
OIL, post-policy trend	1.00 (0.99-1.01)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, national origin, age, and

marital status, father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table L2. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Late Entry into Prenatal Care among US-Born Black and White Women, 2005-2014

	Late Entry into PNC aOR (95% CI)	
Policy Variables	**Black Women**	**White Women**
Time, pre-policy trend	0.98 (0.96-1.00)*	0.99 (0.98-1.00)**
OIL passed	1.12 (1.00-1.25)	0.85 (0.63-1.15)
OIL, post-policy trend	1.01 (0.99-1.03)	1.00 (0.99-1.01)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included age and marital status, father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Appendix M. Results of Sensitivity Analyses for Aim 2, Question 2

Table M1. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Inadequate Prenatal Care Utilization among Latina Women, 2005-2014

Policy Variables	**Inadequate Utilization of PNC** aOR (95% CI)
STATE REMOVED: COLORADO	
Time, pre-policy trend	0.99 (0.97-1.01)
OIL passed	1.08 (0.84-1.37)
OIL, post-policy trend	1.02 (1.00-1.04)
STATE REMOVED: GEORGIA	
Time, pre-policy trend	1.00 (0.99-1.01)
OIL passed	1.23 (0.98-1.55)
OIL, post-policy trend	1.00 (0.99-1.01)
STATE REMOVED: INDIANA	
Time, pre-policy trend	1.00 (1.00-1.00)
OIL passed	1.23 (0.96-1.59)
OIL, post-policy trend	1.00 (0.99-1.01)
STATE REMOVED: MISSOURI	
Time, pre-policy trend	1.00 (0.99-1.01)
OIL passed	1.20 (0.99-1.45)
OIL, post-policy trend	1.00 (0.99-1.01)
STATE REMOVED: NEBRASKA	
Time, pre-policy trend	1.00 (0.99-1.01)
OIL passed	1.19 (0.98-1.46)
OIL, post-policy trend	1.00 (0.99-1.02)
STATE REMOVED: OKLAHOMA	
Time, pre-policy trend	1.00 (0.99-1.01)
OIL passed	1.22 (1.02-1.45)*
OIL, post-policy trend	1.00 (0.99-1.01)
STATE REMOVED: SOUTH CAROLINA	
Time, pre-policy trend	0.99 (0.98-1.00)
OIL passed	1.24 (1.06-1.44)**
OIL, post-policy trend	1.00 (0.99-1.02)
STATE REMOVED: UTAH	
Time, pre-policy trend	0.99 (0.98-1.00)
OIL passed	1.23 (1.05-1.45)*
OIL, post-policy trend	1.00 (0.99-1.01)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, national origin, age, and

marital status, father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table M2. The Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Inadequate Prenatal Care Utilization among US-born Black and White Women, 2005-2014

	Inadequate Utilization of PNC aOR (95% CI)	
Policy Variables	**Black Women**	**White Women**
Time, pre-policy trend	0.98 (0.97-1.00)*	1.00 (0.99-1.01)
OIL passed	1.23 (0.89-1.71)	1.13 (0.90-1.42)
OIL, post-policy trend	1.02 (1.00-1.05)	1.01 (0.99-1.02)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, national origin, age, and marital status, father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Appendix N. Results of Sensitivity Analyses for Aim 2, Question 3

Table N1. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Late Entry into Prenatal Care among Foreign- versus US-born Latina Women, 2005-2014

	Late Entry into PNC aOR (95% CI)	
Policy Variables	**Foreign-born**	**US-born**
STATE REMOVED: COLORADO		
Time, pre-policy trend	0.99 (0.96-1.01)	1.00 (0.98-1.02)
OIL passed	0.82 (0.55-1.24)	0.75 (0.48-1.18)
OIL, post-policy trend	1.00 (0.97-1.03)	0.99 (0.96-1.01)
STATE REMOVED: GEORGIA		
Time, pre-policy trend	0.99 (0.97-1.00)*	0.99 (0.98-0.99)**
OIL passed	0.90 (0.72-1.12)	0.94 (0.83-1.07)
OIL, post-policy trend	0.99 (0.98-1.01)	1.00 (0.99-1.01)
STATE REMOVED: INDIANA		
Time, pre-policy trend	0.98 (0.97-1.00)*	0.98 (0.97-0.99)**
OIL passed	0.84 (0.66-1.08)	0.89 (0.72-1.08)
OIL, post-policy trend	1.00 (0.98-1.02)	1.00 (0.99-1.01)
STATE REMOVED: MISSOURI		
Time, pre-policy trend	0.98 (0.97-1.00)**	0.99 (0.98-0.99)***
OIL passed	0.90 (0.71-1.13)	0.89 (0.75-1.07)
OIL, post-policy trend	1.00 (0.98-1.01)	1.00 (0.99-1.01)
STATE REMOVED: NEBRASKA		
Time, pre-policy trend	0.98 (0.97-0.99)***	0.98 (0.98-0.99)***
OIL passed	0.88 (0.70-1.11)	0.90 (0.76-1.06)
OIL, post-policy trend	1.00 (0.99-1.02)	1.00 (0.99-1.01)
STATE REMOVED: OKLAHOMA		
Time, pre-policy trend	0.98 (0.97-0.99)**	0.98 (0.98-0.99)***
OIL passed	0.89 (0.70-1.13)	0.89 (0.75-1.06)
OIL, post-policy trend	1.00 (0.99-1.02)	1.00 (0.99-1.01)
STATE REMOVED: SOUTH CAROLINA		
Time, pre-policy trend	0.98 (0.97-0.99)***	0.99 (0.98-0.99)***
OIL passed	0.86 (0.68-1.08)	0.90 (0.76-1.07)
OIL, post-policy trend	1.00 (0.99-1.02)	1.00 (0.99-1.01)
STATE REMOVED: UTAH		
Time, pre-policy trend	0.98 (0.97-0.99)**	0.99 (0.98-0.99)***
OIL passed	0.99 (0.91-1.08)	0.98 (0.93-1.03)
OIL, post-policy trend	1.00 (0.98-1.01)	1.00 (0.99-1.00)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's national origin, age, and marital status,

father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table N2. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Inadequate Prenatal Care Utilization among Foreign- versus US-born Latina Women, 2005-2014

Policy Variables	**Inadequate Utilization of PNC** aOR (95% CI)	
	Foreign-born	**US-born**
STATE REMOVED: COLORADO		
Time, pre-policy trend	0.99 (0.97-1.01)	1.00 (0.98-1.01)
OIL passed	1.08 (0.84-1.41)	1.03 (0.84-1.27)
OIL, post-policy trend	1.02 (1.00-1.05)	1.01 (1.00-1.02)
STATE REMOVED: GEORGIA		
Time, pre-policy trend	1.00 (0.98-1.01)	1.00 (1.00-1.00)
OIL passed	1.18 (0.93-1.50)	1.32 (1.07-1.65)*
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)
STATE REMOVED: INDIANA		
Time, pre-policy trend	1.00 (1.00-1.00)	1.00 (1.00-1.00)
OIL passed	1.18 (0.91-1.53)	1.38 (1.12-1.71)**
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)
STATE REMOVED: MISSOURI		
Time, pre-policy trend	1.00 (0.99-1.01)	1.00 (1.00-1.00)
OIL passed	1.18 (1.00-1.40)	1.26 (1.00-1.60)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)
STATE REMOVED: NEBRASKA		
Time, pre-policy trend	0.99 (0.98-1.01)	1.00 (0.99-1.00)
OIL passed	1.15 (0.96-1.38)	1.30 (1.04-1.65)*
OIL, post-policy trend	1.00 (0.98-1.02)	1.00 (0.99-1.00)
STATE REMOVED: OKLAHOMA		
Time, pre-policy trend	0.99 (0.98-1.01)	1.00 (0.99-1.00)
OIL passed	1.19 (1.01-1.41)*	1.29 (1.06-1.59)*
OIL, post-policy trend	1.00 (0.98-1.03)	1.00 (0.99-1.00)
STATE REMOVED: SOUTH CAROLINA		
Time, pre-policy trend	0.99 (0.98-1.00)	1.00 (0.99-1.00)
OIL passed	1.21 (1.07-1.37)**	1.31 (1.05-1.63)*
OIL, post-policy trend	1.01 (0.99-1.03)	1.00 (0.99-1.00)
STATE REMOVED: UTAH		
Time, pre-policy trend	0.99 (0.98-1.01)	1.00 (0.99-1.00)*
OIL passed	1.21 (1.05-1.40)*	1.31 (1.06-1.62)*
OIL, post-policy trend	1.00 (0.98-1.02)	1.00 (0.99-1.00)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's national origin, age, and marital status, father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population,

percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table N3. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Late Entry into Prenatal Care among Foreign-born Women from Mexico versus Guatemala, Honduras, or El Salvador, 2005-2014

	Late Entry into PNC aOR (95% CI)	
Policy Variables	**Women born in Mexico**	**Women born in Guatemala, Honduras, or El Salvador**
STATE REMOVED: COLORADO		
Time, pre-policy trend	0.99 (0.96-1.01)	1.00 (0.98-1.02)
OIL passed	0.83 (0.54-1.27)	0.87 (0.57-1.32)
OIL, post-policy trend	1.00 (0.96-1.03)	1.01 (0.97-1.04)
STATE REMOVED: GEORGIA		
Time, pre-policy trend	0.98 (0.97-1.00)	1.00 (0.99-1.01)
OIL passed	0.90 (0.72-1.12)	1.20 (0.95-1.52)
OIL, post-policy trend	0.99 (0.98-1.01)	1.00 (0.98-1.01)
STATE REMOVED: INDIANA		
Time, pre-policy trend	0.98 (0.96-1.00)*	0.99 (0.98-1.01)
OIL passed	0.85 (0.66-1.09)	0.89 (0.56-1.41)
OIL, post-policy trend	1.00 (0.98-1.02)	1.01 (0.99-1.03)
STATE REMOVED: MISSOURI		
Time, pre-policy trend	0.98 (0.97-0.99)**	1.00 (0.99-1.01)
OIL passed	0.90 (0.72-1.13)	1.06 (0.75-1.51)
OIL, post-policy trend	1.00 (0.98-1.01)	1.00 (0.98-1.01)
STATE REMOVED: NEBRASKA		
Time, pre-policy trend	0.98 (0.97-0.99)***	1.00 (0.98-1.01)
OIL passed	0.90 (0.72-1.12)	0.91 (0.62-1.35)
OIL, post-policy trend	1.00 (0.99-1.01)	1.01 (0.99-1.03)
STATE REMOVED: OKLAHOMA		
Time, pre-policy trend	0.98 (0.97-0.99)***	1.00 (0.99-1.01)
OIL passed	0.90 (0.72-1.14)	0.93 (0.65-1.34)
OIL, post-policy trend	1.00 (0.99-1.01)	1.01 (0.99-1.03)
STATE REMOVED: SOUTH CAROLINA		
Time, pre-policy trend	0.98 (0.97-0.98)***	0.99 (0.98-1.00)
OIL passed	0.87 (0.70-1.08)	1.03 (0.77-1.39)
OIL, post-policy trend	1.00 (0.99-1.01)	1.01 (0.99-1.03)
STATE REMOVED: UTAH		
Time, pre-policy trend	0.98 (0.97-0.99)**	0.99 (0.98-1.01)
OIL passed	0.99 (0.91-1.08)	0.99 (0.70-1.40)
OIL, post-policy trend	1.00 (0.98-1.01)	1.00 (0.98-1.02)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level

covariates. Individual-level covariates included mother's age and marital status, father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table N4. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Inadequate Prenatal Care Utilization among Foreign-born Women from Mexico versus Guatemala, Honduras, or El Salvador, 2005-2014

	Inadequate Utilization of PNC aOR (95% CI)	
Policy Variables	**Women born in Mexico**	**Women born in Guatemala, Honduras, or El Salvador**
STATE REMOVED: COLORADO		
Time, pre-policy trend	0.99 (0.97-1.01)	0.99 (0.96-1.03)
OIL passed	1.06 (0.83-1.36)	1.17 (0.73-1.88)
OIL, post-policy trend	1.02 (1.00-1.04)	1.02 (0.97-1.07)
STATE REMOVED: GEORGIA		
Time, pre-policy trend	1.00 (0.98-1.01)	1.00 (0.99-1.02)
OIL passed	1.18 (0.93-1.49)	1.29 (0.96-1.74)
OIL, post-policy trend	1.00 (0.98-1.01)	1.00 (0.98-1.01)
STATE REMOVED: INDIANA		
Time, pre-policy trend	1.00 (1.00-1.00)	1.00 (0.99-1.01)
OIL passed	1.18 (0.89-1.55)	1.11 (0.78-1.59)
OIL, post-policy trend	1.00 (0.98-1.01)	1.00 (0.99-1.02)
STATE REMOVED: MISSOURI		
Time, pre-policy trend	1.00 (0.99-1.01)	1.01 (1.00-1.02)
OIL passed	1.18 (0.99-1.40)	1.26 (1.00-1.59)
OIL, post-policy trend	1.00 (0.99-1.01)	0.99 (0.98-1.00)
STATE REMOVED: NEBRASKA		
Time, pre-policy trend	0.99 (0.98-1.01)	1.00 (0.99-1.01)
OIL passed	1.17 (0.98-1.40)	1.13 (0.80-1.58)
OIL, post-policy trend	1.00 (0.98-1.02)	1.01 (0.98-1.03)
STATE REMOVED: OKLAHOMA		
Time, pre-policy trend	0.99 (0.98-1.01)	1.00 (0.99-1.02)
OIL passed	1.19 (1.02-1.40)*	1.13 (0.86-1.50)
OIL, post-policy trend	1.00 (0.98-1.02)	1.01 (0.98-1.04)
STATE REMOVED: SOUTH CAROLINA		
Time, pre-policy trend	0.99 (0.98-1.00)*	1.00 (0.98-1.01)
OIL passed	1.21 (1.07-1.36)**	1.34 (1.24-1.44)***
OIL, post-policy trend	1.01 (0.99-1.02)	1.01 (0.98-1.03)
STATE REMOVED: UTAH		
Time, pre-policy trend	0.99 (0.98-1.01)	1.00 (0.98-1.01)
OIL passed	1.21 (1.04-1.40)*	1.21 (0.94-1.55)
OIL, post-policy trend	1.00 (0.98-1.02)	1.00 (0.98-1.02)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level

covariates. Individual-level covariates included mother's age and marital status, father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Appendix O. Results of Sensitivity Analyses for Aim 3, Question 1

Table O1. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Late Entry into Prenatal Care among Latina Women of Mexican, Puerto Rican, and Cuban Origin or Descent, 2005-2014

Policy Variables	**Late Entry into PNC** aOR (95% CI)		
	Mexican	**Puerto Rican**	**Cuban**
STATE REMOVED: COLORADO			
Time, pre-policy trend	0.99 (0.97-1.01)	1.00 (0.99-1.01)	1.02 (0.98-1.05)
OIL passed	0.81 (0.53-1.23)	0.95 (0.77-1.17)	0.65 (0.40-1.07)
OIL, post-policy trend	1.00 (0.97-1.03)	0.98 (0.97-1.00)*	0.98 (0.94-1.02)
STATE REMOVED: GEORGIA			
Time, pre-policy trend	0.99 (0.98-0.99)**	0.99 (0.98-1.00)	0.99 (0.96-1.01)
OIL passed	0.89 (0.74-1.07)	1.01 (087-1.17)	0.72 (0.63-0.82)***
OIL, post-policy trend	1.00 (0.98-1.01)	0.98 (0.98-0.99)***	1.00 (0.98-1.02)
STATE REMOVED: INDIANA			
Time, pre-policy trend	0.98 (0.97-1.00)*	0.99 (0.97-1.01)	0.98 (0.96-1.01)
OIL passed	0.84 (0.67-1.05)	1.02 (0.85-1.22)	0.81 (0.63-1.04)
OIL, post-policy trend	1.00 (0.98-1.02)	0.99 (0.97-1.00)	1.01 (0.99-1.03)
STATE REMOVED: MISSOURI			
Time, pre-policy trend	0.98 (0.98-0.99)**	0.99 (0.98-1.00)	0.99 (0.97-1.01)
OIL passed	0.87 (0.72-1.07)	1.01 (0.87-1.18)	0.76 (0.64-0.91)**
OIL, post-policy trend	1.00 (0.99-1.01)	0.99 (0.98-0.99)**	1.01 (0.99-1.02)
STATE REMOVED: NEBRASKA			
Time, pre-policy trend	0.98 (0.97-0.99)***	0.99 (0.98-1.00)*	0.99 (0.97-1.01)
OIL passed	0.88 (0.73-1.06)	1.01 (0.87-1.16)	0.83 (0.68-1.01)
OIL, post-policy trend	1.00 (0.99-1.01)	0.99 (0.98-0.99)**	1.00 (0.98-1.02)
STATE REMOVED: OKLAHOMA			
Time, pre-policy trend	0.98 (0.97-0.99)***	0.99 (0.98-1.00)	0.99 (0.97-1.01)
OIL passed	0.88 (0.72-1.08)	0.99 (0.86-1.14)	0.81 (0.66-0.98)*

Policy Variables	**Late Entry into PNC** aOR (95% CI)		
	Mexican	**Puerto Rican**	**Cuban**
OIL, post-policy trend	1.00 (0.99-1.01)	0.99 (0.98-0.99)***	1.00 (0.98-1.02)
STATE REMOVED: SOUTH CAROLINA			
Time, pre-policy trend	0.98 (0.97-0.99)***	0.99 (0.98-0.99)**	0.99 (0.97-1.01)
OIL passed	0.86 (0.71-1.04)	1.00 (0.85-1.19)	0.82 (0.65-1.04)
OIL, post-policy trend	1.00 (0.99-1.01)	0.99 (0.98-1.00)*	1.00 (0.99-1.02)
STATE REMOVED: UTAH			
Time, pre-policy trend	0.98 (0.97-0.99)***	0.99 (0.98-1.00)*	0.99 (0.97-1.01)
OIL passed	0.96 (0.91-1.02)	1.08 (1.02-1.14)**	0.83 (0.69-0.99)*
OIL, post-policy trend	1.00 (0.99-1.01)	0.98 (0.98-0.99)***	1.00 (0.99-1.02)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, age, and marital status, father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.

PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.

*p<0.05; **p<0.01; ***p<0.001

Table O2. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Inadequate Prenatal Care Utilization among Latina Women of Mexican, Puerto Rican, and Cuban Origin or Descent, 2005-2014

Policy Variables	**Inadequate Utilization of PNC** aOR (95% CI)		
	Mexican	**Puerto Rican**	**Cuban**
STATE REMOVED: COLORADO			
Time, pre-policy trend	0.99 (0.97-1.01)	0.99 (0.97-1.01)	0.99 (0.95-1.04)
OIL passed	1.05 (0.84-1.32)	1.14 (0.74-1.76)	0.90 (0.42-1.96)
OIL, post-policy trend	1.02 (1.00-1.04)	1.00 (0.98-1.03)	1.01 (0.95-1.07)
STATE REMOVED: GEORGIA			
Time, pre-policy trend	1.00 (0.99-1.01)	0.99 (0.98-1.00)	0.99 (0.98-1.01)
OIL passed	1.19 (0.95-1.50)	1.29 (0.83-1.99)	0.78 (0.54-1.12)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.00)	1.01 (1.00-1.03)
STATE REMOVED: INDIANA			
Time, pre-policy trend	1.00 (1.00-1.00)	0.99 (0.99-1.00)*	0.99 (0.98-1.01)
OIL passed	1.19 (0.91-1.57)	1.47 (1.03-2.09)*	0.94 (0.59-1.51)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.98-1.01)	1.01 (0.99-1.03)
STATE REMOVED: MISSOURI			
Time, pre-policy trend	1.00 (0.99-1.01)	0.99 (0.98-1.01)	0.99 (0.98-1.00)
OIL passed	1.16 (0.96-1.41)	1.30 (0.93-1.81)	0.88 (0.68-1.14)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)	1.01 (0.99-1.03)
STATE REMOVED: NEBRASKA			
Time, pre-policy trend	1.00 (0.98-1.01)	0.99 (0.98-1.00)	0.99 (0.99-1.00)*
OIL passed	1.17 (0.96-1.41)	1.33 (0.95-1.86)	0.94 (0.65-1.36)
OIL, post-policy trend	1.00 (0.99-1.02)	1.00 (0.99-1.01)	1.01 (1.00-1.02)*
STATE REMOVED: OKLAHOMA			
Time, pre-policy trend	1.00 (0.98-1.01)	0.99 (0.98-1.00)	1.00 (0.99-1.00)
OIL passed	1.19 (1.00-1.40)*	1.31 (0.94-1.83)	0.94 (0.65-1.37)
OIL, post-policy trend	1.00 (0.99-1.02)	1.00 (0.99-1.01)	1.01 (1.01-1.02)*

Policy Variables	**Inadequate Utilization of PNC** aOR (95% CI)		
	Mexican	**Puerto Rican**	**Cuban**
STATE REMOVED: SOUTH CAROLINA			
Time, pre-policy trend	0.99 (0.98-1.00)	0.99 (0.98-0.99)***	0.99 (0.98-1.00)*
OIL passed	1.20 (1.03-1.39)*	1.46 (1.12-1.92)**	1.05 (0.75-1.47)
OIL, post-policy trend	1.01 (0.99-1.02)	1.00 (0.99-1.01)	1.01 (1.00-1.02)*
STATE REMOVED: UTAH			
Time, pre-policy trend	0.99 (0.98-1.01)	0.99 (0.98-1.00)	0.99 (0.99-1.00)
OIL passed	1.20 (1.02-1.40)*	1.35 (0.98-1.87)	0.91 (0.65-1.29)
OIL, post-policy trend	1.00 (0.99-1.02)	1.00 (0.99-1.00)	1.01 (1.00-1.03)*

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, age, and marital status, father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.

PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.

*p<0.05; **p<0.01; ***p<0.001

Appendix P. Results of Sensitivity Analyses for Aim 3, Question 2

Table P1. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Preterm Birth among Infants Born to Latina Women of Mexican, Puerto Rican, and Cuban Origin or Descent, 2005-2014

Policy Variables	**Preterm Birth** aOR (95% CI)		
	Mexican	**Puerto Rican**	**Cuban**
STATE REMOVED: ALABAMA			
Time, pre-policy trend	1.00 (1.00-1.00)	1.00 (0.99-1.01)	1.00 (0.98-1.01)
OIL passed	1.07 (1.02-1.13)**	1.05 (0.86-1.28)	1.17 (1.00-1.37)
OIL, post-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.01)	1.00 (0.99-1.02)
STATE REMOVED: ARIZONA			
Time, pre-policy trend	1.00 (0.99-1.00)	0.99 (0.98-1.00)	1.00 (0.98-1.01)
OIL passed	1.06 (1.02-1.11)**	1.05 (0.88-1.26)	1.05 (0.84-1.30)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)	1.00 (0.99-1.02)
STATE REMOVED: COLORADO			
Time, pre-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)	1.02 (0.98-1.05)
OIL passed	1.03 (1.00-1.07)	0.96 (0.79-1.17)	0.90 (0.66-1.24)
OIL, post-policy trend	1.00 (0.99-1.01)	0.99 (0.98-1.00)	0.99 (0.95-1.03)
STATE REMOVED: GEORGIA			
Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.01)	1.00 (0.98-1.01)
OIL passed	1.06 (1.02-1.11)**	1.02 (0.82-1.26)	1.09 (0.82-1.44)
OIL, post-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.01)	1.00 (0.98-1.01)
STATE REMOVED: INDIANA			
Time, pre-policy trend	1.00 (0.99-1.00)	0.99 (0.98-1.00)	1.00 (0.98-1.02)
OIL passed	1.07 (1.02-1.11)**	1.12 (1.04-1.21)**	1.04 (0.80-1.35)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)	1.00 (0.98-1.01)
STATE REMOVED: MISSOURI			
Time, pre-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.01)	1.00 (0.98-1.01)
OIL passed	1.06 (1.02-1.10)**	1.05 (0.88-1.24)	1.08 (0.84-1.39)

Policy Variables	**Preterm Birth** aOR (95% CI)		
	Mexican	**Puerto Rican**	**Cuban**
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)	1.00 (0.99-1.01)
STATE REMOVED: NEBRASKA			
Time, pre-policy trend	1.00 (0.99-1.00)	0.99 (0.99-1.00)	1.00 (0.98-1.01)
OIL passed	1.07 (1.03-1.11)**	1.04 (0.88-1.24)	0.99 (0.80-1.22)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)	1.00 (0.99-1.01)
STATE REMOVED: OKLAHOMA			
Time, pre-policy trend	1.00 (0.99-1.00)	0.99 (0.99-1.00)	1.00 (0.99-1.01)
OIL passed	1.06 (1.02-1.10)**	1.04 (0.86-1.25)	1.04 (0.81-1.24)
OIL, post-policy trend	1.00 (0.99-1.00)	1.00 (0.99-1.01)	1.00 (0.99-1.01)
STATE REMOVED: SOUTH CAROLINA			
Time, pre-policy trend	1.00 (0.99-1.00)	0.99 (0.99-1.00)	1.00 (0.98-1.01)
OIL passed	1.07 (1.03-1.11)**	1.04 (0.87-1.24)	1.03 (0.81-1.31)
OIL, post-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)	1.00 (0.99-1.01)
STATE REMOVED: UTAH			
Time, pre-policy trend	1.00 (0.99-1.00)	0.99 (0.98-1.00)	1.00 (0.98-1.01)
OIL passed	1.06 (1.02-1.11)**	1.02 (0.86-1.22)	1.02 (0.81-1.28)
OIL, post-policy trend	1.00 (0/99-1.01)	1.00 (0.99-1.01)	1.00 (0.99-1.01)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table P2. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Low Birth Weight among Infants Born to Latina Women of Mexican, Puerto Rican, and Cuban Origin or Descent, 2005-2014

Policy Variables	**Low Birth Weight** aOR (95% CI)		
	Mexican	**Puerto Rican**	**Cuban**
STATE REMOVED: ALABAMA			
Time, pre-policy trend	1.01 (1.00-1.01)***	1.00 (0.99-1.01)	1.01 (1.00-1.03)*
OIL passed	1.05 (0.99-1.11)	1.01 (0.74-1.37)	0.98 (0.75-1.29)
OIL, post-policy trend	1.00 (0.99-1.01)	1.02 (1.01-1.02)***	0.98 (0.97-0.99)**
STATE REMOVED: ARIZONA			
Time, pre-policy trend	1.00 (0.99-1.00)	0.99 (0.98-1.01)	1.01 (1.00-1.02)
OIL passed	1.03 (0.99-1.07)	0.99 (0.75-1.30)	0.86 (0.66-1.12)
OIL, post-policy trend	1.00 (1.00-1.00)	1.01 (1.00-1.02)	0.98 (0.97-0.99)***
STATE REMOVED: COLORADO			
Time, pre-policy trend	1.00 (0.99-1.01)	1.01 (0.99-1.02)	1.01 (0.99-1.03)
OIL passed	1.07 (1.02-1.11)**	0.84 (0.72-0.97)*	0.94 (0.65-1.35)
OIL, post-policy trend	1.00 (0.99-1.00)	1.00 (0.98-1.02)	0.98 (0.96-1.00)
STATE REMOVED: GEORGIA			
Time, pre-policy trend	1.01 (1.00-1.01)**	1.00 (0.99-1.01)	1.01 (1.00-1.02)**
OIL passed	1.06 (1.00-1.11)*	1.11 (0.84-1.45)	0.88 (0.65-1.19)
OIL, post-policy trend	1.00 (1.00-1.01)	1.01 (1.00-1.02)*	0.98 (0.97-0.99)***
STATE REMOVED: INDIANA			
Time, pre-policy trend	1.01 (1.00-1.01)*	1.00 (0.98-1.01)	1.02 (1.00-1.03)*
OIL passed	1.06 (1.01-1.11)*	1.03 (0.73-1.43)	0.92 (0.69-1.23)
OIL, post-policy trend	1.00 (0.99-1.01)	1.01 (1.00-1.03)	0.98 (0.96-0.99)**
STATE REMOVED: MISSOURI			
Time, pre-policy trend	1.01 (1.00-1.01)	1.00 (0.99-1.01)	1.02 (1.01-1.03)**
OIL passed	1.04 (0.99-1.09)	0.99 (0.72-1.35)	0.90 (0.67-1.22)
OIL, post-policy trend	1.00 (1.00-1.01)	1.01 (1.00-1.03)	0.98 (0.96-0.99)**

Policy Variables	**Low Birth Weight** aOR (95% CI)		
	Mexican	**Puerto Rican**	**Cuban**
STATE REMOVED: NEBRASKA			
Time, pre-policy trend	1.01 (1.00-1.01)*	1.00 (0.99-1.01)	1.01 (1.00-1.02)**
OIL passed	1.06 (1.01-1.11)*	1.00 (0.73-1.36)	0.85 (0.64-1.13)
OIL, post-policy trend	1.00 (1.00-1.01)	1.01 (1.00-1.02)*	0.98 (0.97-0.99)***
STATE REMOVED: OKLAHOMA			
Time, pre-policy trend	1.01 (1.00-1.01)	1.00 (0.99-1.01)	1.01 (1.01-1.02)**
OIL passed	1.05 (0.99-1.11)	1.00 (0.73-1.36)	0.88 (0.68-1.15)
OIL, post-policy trend	1.00 (1.00-1.01)	1.01 (1.00-1.02)**	0.98 (0.97-0.99)***
STATE REMOVED: SOUTH CAROLINA			
Time, pre-policy trend	1.01 (1.00-1.01)**	1.00 (0.99-1.01)	1.02 (1.01-1.03)**
OIL passed	1.04 (0.99-1.09)	1.01 (0.73-1.39)	0.85 (0.67-1.09)
OIL, post-policy trend	1.00 (1.00-1.01)	1.01 (1.00-1.02)	0.98 (0.97-0.99)**
STATE REMOVED: UTAH			
Time, pre-policy trend	1.01 (1.00-1.01)	1.00 (0.99-1.01)	1.01 (1.01-1.02)**
OIL passed	1.03 (0.99-1.07)	0.99 (0.72-1.35)	0.83 (0.66-1.04)
OIL, post-policy trend	1.00 (1.00-1.01)*	1.02 (1.00-1.03)**	0.98 (0.97-0.99)***

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

Table P3. Examining the Sensitivity of Findings to the Removal of One State at a Time from Models Examining the Effects of Omnibus Immigrant Laws on the Adjusted Odds Ratio of Low Birth Weight among Full Term Infants Born to Latina Women of Mexican, Puerto Rican, and Cuban Origin or Descent, 2005-2014

Policy Variables	**Low Birth Weight** aOR (95% CI)		
	Mexican	**Puerto Rican**	**Cuban**
STATE REMOVED: ALABAMA			
Time, pre-policy trend	1.01 (1.00-1.01)	1.00 (0.99-1.01)	1.01 (0.99-1.03)
OIL passed	1.05 (0.99-1.11)	1.03 (0.79-1.35)	1.00 (0.75-1.35)
OIL, post-policy trend	1.00 (1.00-1.01)	1.02 (1.01-1.04)**	0.98 (0.96-1.00)*
STATE REMOVED: ARIZONA			
Time, pre-policy trend	0.99 (0.99-1.00)*	0.99 (0.98-1.01)	1.00 (0.98-1.01)
OIL passed	1.03 (0.92-1.14)	1.01 (0.79-1.29)	0.98 (0.67-1.44)
OIL, post-policy trend	1.00 (1.00-1.01)	1.02 (1.00-1.04)	0.98 (0.96-1.00)*
STATE REMOVED: COLORADO			
Time, pre-policy trend	0.99 (0.98-1.00)**	1.00 (0.98-1.03)	0.98 (0.95-1.01)
OIL passed	1.13 (1.04-1.23)**	0.87 (0.71-1.07)	1.44 (1.04-2.01)*
OIL, post-policy trend	1.01 (1.00-1.01)	1.01 (0.97-1.05)	1.01 (0.98-1.04)
STATE REMOVED: GEORGIA			
Time, pre-policy trend	1.00 (1.00-1.01)	1.00 (0.99-1.01)	1.01 (1.00-1.02)*
OIL passed	1.06 (1.01-1.12)*	1.10 (0.84-1.44)	0.99 (0.72-1.35)
OIL, post-policy trend	1.00 (1.00-1.01)	1.01 (1.00-1.02)	0.98 (0.97-1.00)
STATE REMOVED: INDIANA			
Time, pre-policy trend	1.00 (1.00-1.01)	1.00 (0.98-1.02)	1.01 (0.99-1.03)
OIL passed	1.04 (0.98-1.10)	0.99 (0.71-1.39)	0.99 (0.73-1.33)
OIL, post-policy trend	1.00 (1.00-1.01)	1.02 (1.00-1.04)	0.98 (0.96-1.00)
STATE REMOVED: MISSOURI			
Time, pre-policy trend	1.00 (1.00-1.01)	1.00 (0.99-1.01)	1.01 (1.01-.102)***
OIL passed	1.03 (0.97-1.09)	1.00 (0.76-1.33)	1.04 (0.78-1.37)
OIL, post-policy trend	1.00 (1.00-1.01)	1.02 (1.00-1.04)*	0.98 (0.96-1.00)*

Policy Variables	**Low Birth Weight** aOR (95% CI)		
	Mexican	**Puerto Rican**	**Cuban**
STATE REMOVED: NEBRASKA			
Time, pre-policy trend	1.00 (0.99-1.01)	1.00 (0.99-1.01)	1.01 (0.99-1.03)
OIL passed	1.05 (0.99-1.12)	1.01 (0.75-1.35)	1.06 (0.79-1.41)
OIL, post-policy trend	1.01 (1.00-1.01)	1.02 (1.00-1.04)*	0.98 (0.97-1.00)*
STATE REMOVED: OKLAHOMA			
Time, pre-policy trend	1.00 (1.00-1.01)	1.00 (0.99-1.01)	1.01 (0.99-1.03)
OIL passed	1.03 (0.98-1.09)	1.01 (0.77-1.34)	1.05 (0.77-1.41)
OIL, post-policy trend	1.01 (1.00-1.01)	1.02 (1.00-1.04)*	0.98 (0.96-0.99)**
STATE REMOVED: SOUTH CAROLINA			
Time, pre-policy trend	1.00 (1.00-1.01)	1.00 (0.99-1.01)	1.01 (1.00-1.02)*
OIL passed	1.04 (0.98-1.10)	1.06 (0.82-1.36)	0.99 (0.76-1.29)
OIL, post-policy trend	1.00 (1.00-1.01)	1.02 (1.00-1.04)	0.98 (0.96-1.00)*
STATE REMOVED: UTAH			
Time, pre-policy trend	1.00 (1.00-1.01)	1.00 (0.99-1.01)	1.01 (1.00-1.02)
OIL passed	1.02 (0.97-1.09)	1.02 (0.77-1.35)	0.96 (0.75-1.22)
OIL, post-policy trend	1.01 (1.00-1.01)*	1.02 (1.00-1.04)	0.99 (0.97-1.00)

Notes: Adjusted odds ratio (95% confidence interval) shown. Models utilized logistic regression with robust standard errors (clustered by state) and controlled for individual- and state-level covariates. Individual-level covariates included mother's nativity status, age, marital status, and delivery method (vaginal vs. cesarean), father's age and race/ethnicity, and infant's sex, birth order, and birth season. State-level covariates included presence of a second omnibus immigrant law, percent Latino population, percent of the population living below the federal poverty level, unemployment rate, and average citizen voter ideology. The time series is based on quarter-year of conception relative to passage of a first omnibus immigrant law.
PNC = Prenatal care; OIL = Omnibus immigrant law; CI = Confidence interval.
*p<0.05; **p<0.01; ***p<0.001

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