

# Immigration Enforcement, the Home Care Workforce, and Access to Long-Term Care: Evidence from Secure Communities\*

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*Job Market Paper*

January 17, 2024

## Abstract

Most Americans will need long-term care at some point in their lifetimes, with many relying on home care workers, like home health and personal care aides, to provide this care. Since nearly one-third of home care workers are foreign-born, it is critical to understand how escalating US immigration enforcement impacts the supply of home care. We first propose a conceptual model of the impact of immigration enforcement on the home care market. Then, we use data from the American Community Survey to test the model's predictions. We exploit temporal and geographic variation in the rollout of a federal enforcement policy, Secure Communities, between 2008-2013, estimating difference-in-differences and event study models with time and location fixed effects to isolate the effect of the policy. We find that Secure Communities reduces the overall size of the home care workforce by 7.5%, with 70% of this effect driven by foreign-born workers. We then use data from the Health & Retirement Study to examine the impact of this workforce reduction on older adults with care needs, and we find large negative externalities. Overall, older adults needing assistance are 2.4 percentage points less likely to receive any help at home, a 4.1% relative reduction. Consistent with our model's predictions, these effects are concentrated among older adults on Medicaid, who are 20% less likely to receive formal home care following the implementation of Secure Communities.

\*We are grateful to Yulya Truskinovsky, Tim Layton, David Rosenkranz, Sebastian Fleitas, and participants at the 2023 ASHEcon conference, the 2024 ASSA conference, and the Wharton Health Care Management Seminar for helpful suggestions, advice, and feedback. We are grateful as well to Julie Szymaskzek for administrative support and to Marcella Alsan, Dan Ma, and Crystal Yang for sharing their data on the rollout of Secure Communities. We gratefully acknowledge funding support from the National Institute on Aging (R01-AG066114). This study uses restricted data from the Health and Retirement Study (HRS). The HRS is sponsored by the National Institute on Aging (grant number U01AG009740) and is conducted by the University of Michigan. The content is solely the responsibility of the authors and does not represent the official policy or position of the National Institutes of Health or any other entity.

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## 1 Introduction

The vast majority of Americans who turn 65 will develop substantial long-term care needs before they die, requiring assistance with essential tasks like dressing, eating, and bathing (R. W. Johnson 2019). While this assistance was historically provided in nursing homes, aging Americans are increasingly receiving care in home and community settings (i.e., home-based care or “home care”). States and the federal government play a critical role in ensuring access to home care; more than half of all long-term care in the United States is financed by Medicaid, with more than 75% of this spending supporting home care (Chidambaram and Burns 2022). Maintaining a well-functioning home care market requires an adequate supply of workers; however, despite the fact that state Medicaid programs have dedicated considerable effort and resources to bolstering this workforce, recent worker shortages have raised questions about its sustainability (O’Malley Watts, Musumeci, and Ammula 2021).

Immigrants are critical to the functioning of the home care industry (Zallman et al. 2019); nearly one-third of home care workers in the United States are immigrants, compared with 17% of all workers. Yet, even while the nation contends with home care workforce shortages, it has dramatically expanded interior immigration enforcement efforts in recent years. The US today spends nearly \$25 billion on such enforcement, which is roughly equal to \$96 per adult resident per year and reflects record-high investment in immigration enforcement globally (Akkerman 2023).<sup>1</sup> By curtailing immigration, state and federal policymakers may undermine a competing policy goal of ensuring an adequate supply of home-based long-term services and supports (LTSS). Indeed, both nursing homes and home care agencies have reported difficulty recruiting among immigrant communities in the context of increased immigration enforcement (Spetz et al. 2019).

Policymakers commonly justify immigration enforcement based on two goals: first, to prevent crime and protect national security, and second, to safeguard job opportunities and wages for native-born workers. Yet, there is little evidence that immigration causally increases crime rates (Bianchi, Buonanno, and Pinotti 2012; Bell, Fasani, and Machin 2013; Miles and Cox 2014; Chalfin and Deza 2017; Ajzenman, Dominguez, and Undurraga 2023). In addition, while there is

1. This figure comes from the federal budget and does not include state and local immigration enforcement expenditures, which can be substantial. For example, Texas alone spent nearly \$3 billion on border security in FY 2022-2023 (Kriel, Trevizo, and Rodriguez Calderón 2022).

a large literature devoted to understanding the impact of immigration on labor market outcomes for native-born workers, the theoretical predictions and empirical findings of this literature are mixed, depending on the model assumptions and empirical specification, and commonly suggest a small-to-null impact of immigration on native-born workers' wages and employment.<sup>2</sup> By contrast, immigration may increase the supply of nontradeable goods and services (Cortes 2008), a consequence that is commonly overlooked. Through its impact on labor supply, immigration enforcement could reduce the supply and increase the prices of services like home care, thereby improving consumer welfare. Given the increasing prevalence of enforcement policies at both local and federal levels, and critical shortages of workers in the home care industry, it is important to understand the effect of immigration enforcement on the supply of home care.

In this paper, we study how immigration enforcement impacts the supply of home care. We first rely on economic theory and develop a model for understanding this impact. In this model, consumers receive home care services from agencies,<sup>3</sup> which serve two distinct markets, a Medicaid market with a fixed price (determined by state governments) and a private-pay market with a downward-sloping demand curve.<sup>4</sup> We hypothesize that immigration enforcement reduces the supply of foreign-born home care workers, which could occur either directly, through deportations, or indirectly via "chilling effects" (Watson 2014), whereby undocumented immigrants and their families limit work outside the home due to fear of interacting with law enforcement. Given that immigrants have lower reservation wages than similarly-skilled native-born workers (Rivera-Batiz 1999; Kossoudji and Cobb-Clark 2002; Pan 2012; Albert 2021), this reduction in supply of foreign-born workers raises home care agencies' labor costs. Our model predicts that agencies respond to this increase in costs by reducing the quantity of home care they supply. Medicaid enrollees, who generate lower marginal revenue than private-pay patients, experience the brunt of this reduction.

To test the model's predictions and empirically investigate the impact of immigration enforce-

2. See: G. E. Johnson (1980), Altonji and Card (1991), Borjas, Freeman, and Katz (1991), Borjas et al. (1997), Borjas (1999), Card (2001), Borjas (2003, 2006), Peri and Sparber (2007), Glitz (2012), Ottaviano and Peri (2012), Dustmann, Frattini, and Preston (2013), Chassamboulli and Peri (2015), Peri (2016), and Albert (2021).

3. In practice, while more than 80% of home care workers work for agencies (see Table 2), consumers may also hire home care workers directly.

4. This is a close approximation of the market for home care services, as most private health insurance does not cover long-term care, nor does Medicare. In addition, only about 13% of older adults carry private long-term care insurance (Friedberg et al. 2014).

ment, we leverage a natural experiment: the rollout of a federal enforcement policy, Secure Communities, between 2008-2013. Using data from the American Community Survey, we first examine the effect of the policy on home care workers' labor supply. We find that the policy leads to a 7.5% reduction in the number of home care workers per capita, on average, with about 70% of this effect driven by reductions in the supply of foreign-born workers. Next, we use data from the Health & Retirement Study to examine how this reduction in labor supply impacts the supply of home-based LTSS to older adults. We find that older adults needing assistance at home are 2.4 percentage points less likely to receive any help following the policy's implementation, a 4.1% relative reduction. Consistent with our model's predictions, these effects are concentrated among older adults on Medicaid, who are 20% less likely to receive formal home care post-Secure Communities. In addition, we find evidence that older adults on Medicaid are more likely to co-reside with their adult children following the policy's implementation, suggesting possible substitution to informal (or unpaid) caregiving from family members when older adults lose access to paid care.

Our paper complements recent research that uses shift-share instruments to examine the causal impact of immigration *inflows* on older adults needing LTSS. Furtado and Ortega (2023) and Grabowski, Gruber, and McGarry (2023) demonstrate that increased immigration improves nursing home staffing, which substantially improves health outcomes and quality of care for nursing home residents. Additionally, Butcher, Moran, and Watson (2022) and Mockus (2021) find that immigration reduces the likelihood that older adults move to nursing homes in the first place. Ours is the first paper we are aware of to examine the causal impact of immigration (or immigration enforcement) on the supply of home care, and the first to examine the impact of immigration *enforcement* on older adults' long-term care outcomes. In this way, we contribute to a growing evidence base suggesting that policies to curtail immigration may produce negative spillovers to older adults and other people needing long-term services and supports.

Third, our paper relates closely to research examining the impact of US immigration enforcement on labor market outcomes. While a lengthy literature examines the impact of immigration on US labor markets, a smaller body of work addresses the impact of enforcement. Amuedo-Dorantes and Bansak (2012) examine the effect of E-Verify (mandatory employment verification) legislation on labor market outcomes, finding that this legislation reduces employment among

likely authorized workers, but redistributes likely unauthorized workers across industries. East et al. (2022) examine the impact of Secure Communities on employment and wages, finding reductions in employment among both individuals who are likely undocumented immigrants and those who are native-born. East and Velásquez (2022) examine spillovers of Secure Communities to highly educated mothers with young children, finding that these mothers reduce their labor supply as a result of immigration enforcement. They show compelling evidence that this reduction is caused by an increased cost of outsourcing childcare due to a reduction in the labor supply of undocumented immigrants. Similarly, Cortés and Tessada (2011) and Farré, González, and Ortega (2011) find that immigration (by people who are low-skilled or female, respectively) increases the labor supply of highly skilled women.

Finally, our paper complements a larger body of work finding adverse effects of immigration enforcement on a variety of outcomes, including safety net participation (Watson 2014; Amuedo-Dorantes, Arenas-Arroyo, and Sevilla 2018; Alsan and Yang 2022a), infant health and birth outcomes (Amuedo-Dorantes, Churchill, and Song 2022; Vu 2022), and poverty (Amuedo-Dorantes, Arenas-Arroyo, and Sevilla 2018).

While prior work has examined the impact of immigration and immigration enforcement on labor markets, focusing on the market for home care services is novel and highly policy-relevant, since having a well-functioning home-based LTSS market is essential to policymakers interested in providing care to the nation's growing population of older adults and people with disabilities. Home care, in particular, is of interest to policymakers, because it can be provided at a lower cost and is often more aligned with individual preferences than institutional LTSS. Additionally, a home care shortage may impose externalities on other workers. Informal caregivers, predominantly daughters, fill in when formal care is unavailable, with negative implications for their productivity and health.

Finally, the impact of immigration enforcement on home care markets may be especially pronounced for several reasons. First, nearly one-third of home care workers are foreign-born. Second, home care workers commonly drive between multiple clients' homes, which increases their risk of interacting with law enforcement and could compound immigration enforcement's "chilling effects." Finally, home care is primarily financed by Medicaid. Given that Medicaid sets a fixed, administered price for long-term care and other health care services, which tends to be lower

than price paid by private health insurance, agencies may be constrained in their ability to adjust prices in response to any enforcement-induced increases to labor costs. Effectively, Medicaid's price may act as a price ceiling for home care services, limiting agencies' ability to raise prices in response to shortages. Our findings raise important questions about the impact of immigration enforcement in settings where prices are constrained.

## 2 Background

### 2.1 Long-Term Care and the Home Care Workforce

More than nine million adults in the United States require assistance with activities of daily living, like dressing, eating, and bathing (Kreider and Werner 2023). While people with long-term care needs historically relied on institutional care in nursing homes, today the majority receive services in home and community-based settings (Chidambaram and Burns 2022). This shift in location of care has been driven by people's wishes to age in place along with states' obligations following the Supreme Court's *Olmstead* decision, requiring that care be provided in the least restrictive setting possible. As a result, the provision of LTSS has shifted from institutional settings, like nursing homes and skilled nursing facilities, to the home (Musumeci and Claypool 2014; Scales 2020). Demand for long-term care is expected to grow over time as the population ages; however, there is concern about shortages of workers to provide this care (Galewitz 2021; Laughlin 2022; Gifford et al. 2018; Espinoza 2019; Deppen and Rihl 2021), and the pandemic has amplified these concerns (Laughlin 2022; Deppen and Rihl 2021).

Home-based LTSS is provided by home care workers, including home health aides and personal care aides. Home care workers are disproportionately women of color who do not have education beyond high school, and immigrants make up a sizable and important part of this workforce. While about 17% of the US labor force are immigrants, immigrants account for about 31% of the home care workforce nationally (PHI 2020), and over half of the workforce in some states, like New York, New Jersey, and Florida (Batalova 2020). Prior research has found that approximately one-fifth of these workers enter the US as undocumented immigrants (Chen et al. 2013).

Importantly, long-term care in the United States, including home-based care, is primarily financed by Medicaid, a fact we return to in Section 3. Medicare and private insurance generally do

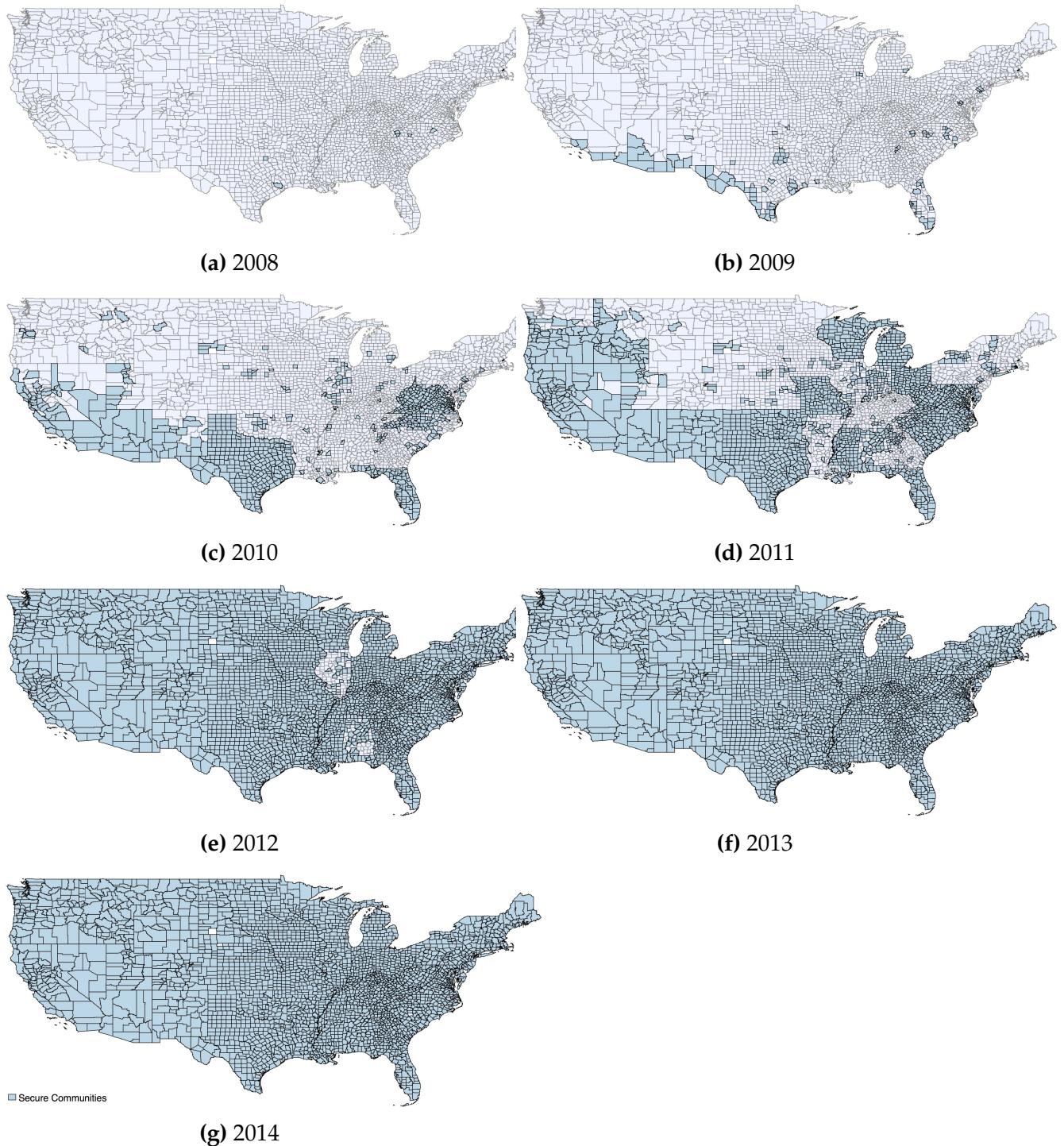
not cover long-term services, and most Americans do not hold private long-term care insurance. Therefore, if a person on the United States requires long-term care, she must either pay for it out of pocket or obtain it through her state's Medicaid program, which generally requires meeting stringent income and asset criteria.

## 2.2 Immigration Enforcement

To examine the impact of immigration enforcement on the home care workforce, we focus on a specific law enforcement-based immigration enforcement policy called Secure Communities, which was administered by U.S. Immigration and Customs Enforcement (ICE). It was first piloted in 2008, then rolled out at the county level across all U.S. counties between 2008-2013. The timing of the rollout was determined federally, and counties did not have the ability to opt out. Eventually, all counties in the United States participated in the program. Secure Communities was subsequently expanded in 2011, then discontinued in 2014 "amid protests that it might be unconstitutional and that it discouraged migrants from cooperating with local law enforcement" (C.K. 2018). The program was reactivated in 2017 under Trump, (C.K. 2018) then finally revoked again in 2021 when President Biden took office.

Secure Communities dramatically expanded the reach of immigration enforcement in the United States by allowing ICE to check the immigration status of anyone arrested by state or local law enforcement across the country, regardless of the nature or seriousness of their arrest. Typically, when a person is arrested, their fingerprints are sent to the FBI for a federal background check; however, under Secure Communities, ICE had access to all fingerprints sent to the FBI and could place a detainer on anyone found to be in the country illegally. This meant that local law enforcement was required to hold the person until they could be picked up by ICE and processed for deportation. As a result of Secure Communities, more than 454,000 people were deported from the United States between 2008-2014 alone (East et al. 2022). Secure Communities had profound effects on immigrant communities in the United States, with effects spilling over to documented immigrants residing legally in the United States (Alsan and Yang 2022a).

Our identification strategy relies on the quasi-random rollout of Secure Communities across counties. Figure 3 depicts the rollout of the policy. While Secure Communities was initially rolled



**Figure 1:** Rollout of Secure Communities by County

**Note:** Shaded areas indicate the counties that had activated Secure Communities by December of the given year.  
**Source:** (East et al. 2022)

out to counties with close proximity to the U.S.-Mexico border, as well as counties with large Hispanic populations, prior work has established that Secure Communities activation was unrelated to time-varying county-level demographic and economic characteristics, including labor market outcomes. (Cox and Miles 2013; East et al. 2022).

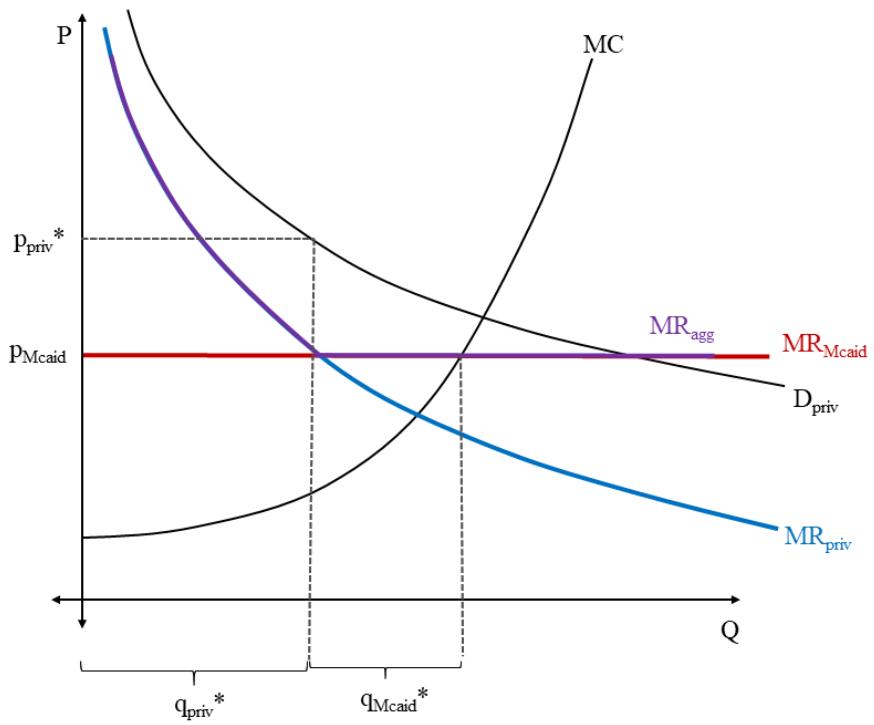
### 3 Conceptual Framework

In this section, we rely on economic theory and develop a conceptual framework to form predictions regarding the impact of immigration enforcement policy on the market for home-based long-term care (“home care”). Specifically, we examine enforcement’s impact on: (1) the employment of foreign-born home care workers, (2) the employment of native-born home care workers, and (3) the overall supply of home care. As a starting point, we adopt and extend the two-market, or “mixed-economy” model, which was originally developed by Sloan, Mitchell, and Cromwell (1978) to model physicians’ decisions to participate in state Medicaid programs.<sup>5</sup>

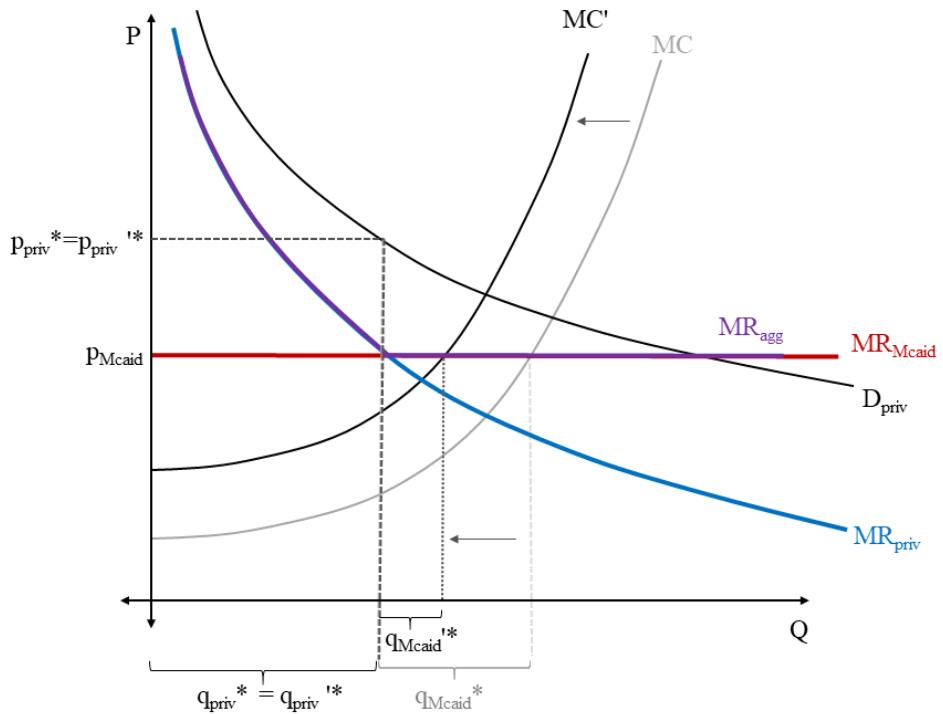
Figure 2 presents a graphical depiction of this model extended to the home care setting. In this model, home care is provided by home care agencies that serve patients in two markets: a private-pay market, with downward-sloping demand  $D_{priv}$ , and a Medicaid market with prices  $p_{Med}$  that are set administratively by state governments. In this framework, agencies serve private-pay patients until the marginal revenue from private-pay patients is equivalent to the Medicaid reimbursement rate. Then, they serve Medicaid patients until their marginal cost equals the Medicaid reimbursement rate.

We assume that immigrant and native-born workers are perfect substitutes in production, but that undocumented immigrants have the lowest reservation wage, followed by documented immigrants, with native-born workers having the highest reservation wage (Rivera-Batiz 1999; Kosoudji and Cobb-Clark 2002; Pan 2012; Albert 2021). Intuitively, under these assumptions, agencies will first hire undocumented workers, then, to expand quantity supplied, they will hire documented immigrants, and finally native-born workers. The upward-sloping marginal cost curve (MC) reflects the fact that agencies must employ workers with higher reservation wages to ex-

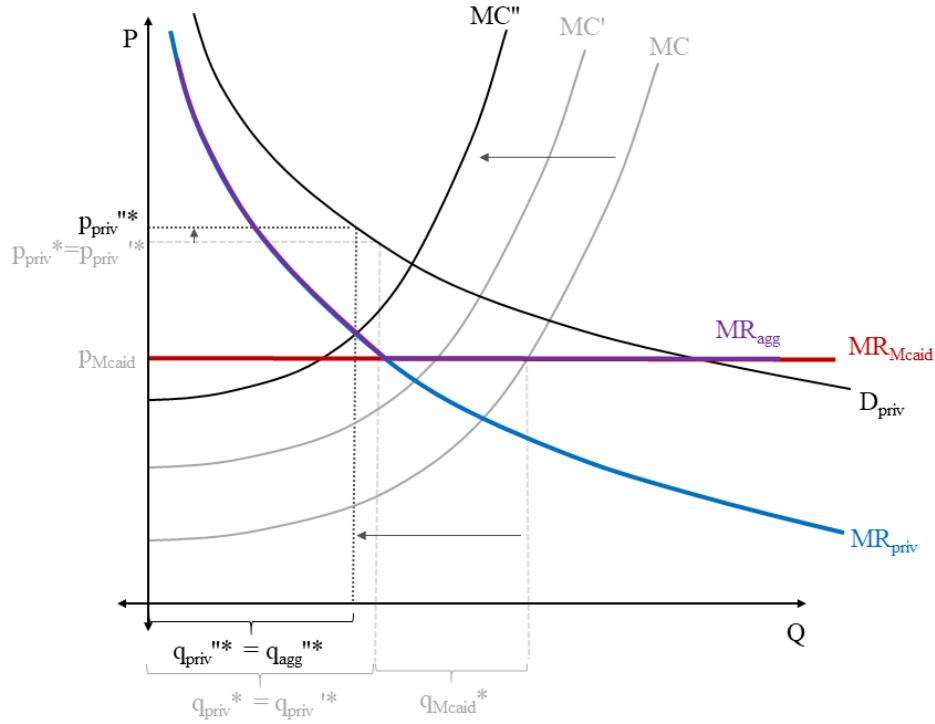
5. This model has since been extended by other work in health economics to model the impact of health insurance expansions on the already-insured (Garthwaite 2012; Carey, Miller, and Wherry 2020).



(a) Pre-Secure Communities



(b) Post-Secure Communities



(c) Post-Secure Communities (Extreme Case)

**Figure 2:** Conceptual Framework

**Note:** Figure 2 represents the market for home care services. Home care agencies serve patients in two markets: a private-pay market, with downward-sloping demand  $D_{priv}$ , and a Medicaid market with fixed/administered prices  $p_{Mcaid}$ . Agencies' marginal costs (i.e., wages) are represented as  $MC$ .  $MR_{priv}$  represents marginal revenues from serving private-pay patients, and  $MR_{Mcaid}$  represents marginal revenues from serving Medicaid patients (i.e., the reimbursement rate for Medicaid-covered personal care services). Agencies choose  $q^*$  such that  $MR_{total} = MC$ . They will serve private-pay patients as long as  $MR_{priv} \geq MR_{Mcaid}$ . Then, they will serve Medicaid patients as long as  $MR_{Mcaid} \geq MC$ .

pand quantity supplied. For simplicity, we assume that agencies' only costs of production are labor costs (wages).<sup>6</sup>

First, and perhaps most intuitively, we hypothesize that immigration enforcement reduces the supply of foreign-born home health aides and personal care aides. This reduction could occur either directly, due to deportations, or indirectly, due to chilling effects (or both). We expect these effects to be strongest for undocumented immigrants and their families, who are especially vulnerable to law enforcement-based immigration policy.

Even if immigration enforcement inhibits labor force participation among foreign-born workers, less clear is its impact on the overall supply of home care, which depends in part on the relative substitutability between native- and foreign-born home care workers. On the one hand, if home care agencies respond to a reduction in foreign-born workers by hiring more native-born workers, then enforcement's impact on the supply of home care will be less severe. However, if enforcement reduces employment for both foreign-born and native-born workers, it could result in a significant shortage of paid caregivers. This would have serious implications for older adults and people with disabilities who rely on formal caregiving.

We hypothesize that immigration enforcement leads some immigrant workers to exit the labor force. Since immigrant workers have lower reservation wages than other workers, this reduction in labor supply shifts agencies' marginal cost curve to the left ( $MC \rightarrow MC'$ ). Agencies respond to this increase in labor costs by reducing quantity supplied. First, they reduce quantity supplied to Medicaid patients ( $q_{Mcaid}*$ ), as long as  $MR_{Mcaid} \geq MC'$ . Once  $MC' > MR_{Mcaid}$ , the agency stops serving Medicaid patients altogether; at this point, as  $MC'$  shifts to the left, the agency serves fewer private-pay patients, and prices increase on the private-pay market. These predictions are consistent with evidence from Ruffini (2022) in the nursing home setting, which found that nursing homes responded to an increase in labor costs by serving fewer Medicaid patients and charging private-pay patients higher prices.

6. Home care is a highly labor-intensive service, with low fixed costs due to service provision taking place in the home (Jung and Polksky 2014).

### 3.1 Model Predictions

#### 3.1.1 Predictions: Supply of Paid Home Care

1. Immigration enforcement reduces the supply of paid home care. If paid and unpaid/informal care are substitutes, then immigration enforcement may also increase the provision of informal caregiving (e.g., by family members).
2. **Enforcement has a larger impact on the supply of paid home care services for Medicaid patients than for private-pay patients, since Medicaid patients generate lower revenues for agencies on the margin.**
3. If it results in a sufficiently small increase in  $MC$ , immigration enforcement will not affect the supply of paid home care services to private-pay patients.
4. If SC does reduce the supply of paid care to private-pay patients, then average prices increase in the private-pay market.

#### 3.1.2 Predictions: Employment of Home Care Workers

1. Immigration enforcement negatively impacts the overall employment of home health and personal care aides, which is driven by foreign-born workers exiting the labor force (though employment may decline for native-born workers as well).
2. As previously pointed out by Chassamboulli and Peri (2015), Albert (2021), and East et al. (2022), immigration enforcement has a theoretically ambiguous impact on employment for native-born home health aides and personal care aides
  - Depends on model parameters
  - On the one hand, it increases agencies' average costs of labor, which may result in lower hiring/job creation
  - On the other hand, it reduces job competition with foreign-born workers
3. Immigration enforcement increases wages in the home care industry, but this is at least in part a compositional change (i.e., lower-paid, more vulnerable foreign-born workers exit the market).

- If undocumented workers (who have lower reservation wages) are more likely to exit the market as a result of SC, then immigration enforcement *increases* wages for immigrant workers who remain in the market (due to compositional changes)
  - In addition, immigration enforcement could raise the reservation wages of undocumented workers and their families. This is because these workers may require a compensating differential for the increased risk of leaving home as in Albert (2021)
  - Effect on native-born workers ambiguous
4. Immigration enforcement has an unambiguously negative impact on wages/employment for home care workers who are complements in production (e.g., registered nurses, physical therapists, occupational therapists)

## 4 Data

To analyze the impact of immigration enforcement on the home care workforce, we merge data on the rollout of Secure Communities with data from the American Community Survey (ACS). Then, to examine the policy's effects on receipt of formal caregiving, as well as indirect impacts on informal caregiving provision, we use data from the Health and Retirement Study (HRS) and the American Time Use Survey (ATUS). Each of these data sources is described in more detail below.

### 4.1 Secure Communities

We obtain data on the timing of the rollout of Secure Communities from Alsan and Yang (2022a, 2022b), which we supplement using publicly available reports from U.S. Immigration and Customs Enforcement (ICE) (U.S. Immigration and Customs Enforcement 2013, 2014). These data include the exact date of Secure Communities implementation by county for all counties in the United States. In some cases, county names and boundaries changed over time; where necessary, we referenced Dorn (2021) to map these changes to counties and their relevant Federal Information Processing Standards (FIPS) codes. In addition to Secure Communities, we control for the presence of other state-, county-, and city-level immigration enforcement policies, including 287(g)

agreements, Omnibus immigration bills, and E-Verify legislation. Information on the implementation dates and data collection procedures for these policies is included in Appendix A.

## 4.2 American Community Surveys

To measure the size and characteristics of the home care workforce across local geographic areas, we use data from the ACS Integrated Public Use Microdata Series (IPUMS) from 2005-2014 (Ruggles et al. 2022). The ACS is a nationally representative sample of 3.5 million households conducted annually by the Census Bureau and is designed to capture demographic, socioeconomic, and housing characteristics of the US population (United States Census Bureau 2017). The IPUMS data include geographic information on respondents' residency at the level of the public-use microdata area (PUMA).<sup>7</sup> Since PUMAs are redefined every ten years (Missouri Census Data Center 2022), and the PUMA boundaries changed during our sample period, we conduct our analyses at the level of the "consistent PUMA (CPUMA)."<sup>8</sup>

We use the ACS data to measure several characteristics of the home care workforce in each CPUMA, including the overall size of the workforce, the number of hours worked, and wages. To identify home care workers in the ACS, we use respondents' reported industry and occupation. Following previous research, we define home care workers as nursing, psychiatric, and home health aides (occupation code 3600) and personal and home care aides (occupation code 4610) who reported working in the following industries: home health care services (industry code 8170), individual and family services (industry code 8370), and private households (industry code 9290). We restricted to respondents who reported being employed at the time of the survey. We also use the ACS to categorize workers as agency/government workers or household employees/independent contractors, following the classification methodology used by (Kim 2022). More information on this classification is included in Appendix B

We also use the ACS data to measure demographic and socioeconomic characteristics of CPUMAs

7. PUMAs are non-overlapping geographic areas that subdivide states into regions, cover the entirety of the United States, and contain populations of at least 100,000 people each (Missouri Census Data Center 2022; United States Census Bureau, n.d.). While large, urban counties may be split into separate PUMAs, PUMAs typically represent combinations of multiple counties. (Missouri Census Data Center 2022).

8. IPUMS constructs CPUMAs to "support spatio-temporal analysis of PUMS data." Each CPUMA used in our analysis is an "aggregation of one or more 2010 PUMAs (Public Use Microdata Areas) that, in combination, align closely (within a 1% population error tolerance) with a corresponding set of 2000 PUMAs" (Minnesota Population Center, University of Minnesota 2023).

that might be correlated with the size of the home care workforce. These characteristics include mean age of the CPUMA's residents, percentage of the population over the age of 65, percent female, percent Hispanic, racial composition, educational composition, percent receiving SSI payments, and Bartik-style measures of local labor demand. We construct the Bartik measures, which capture differential impacts of national economic trends (such as the Great Recession) on CPUMAs according to the industrial composition of CPUMAs, following methods from East and Velásquez (2022). A description of how we calculate the Bartik measures is included in Appendix C.

Finally, we use the ACS to construct a measure of the percentage of a CPUMA's population who are "likely undocumented," that is, immigrants living in the United States without legal status. Following prior literature, we define "likely undocumented" people as foreign-born Hispanic respondents with less than a high school education.

### 4.3 Health and Retirement Study

To examine Secure Communities' effect on the supply of paid caregiving to older adults, we use data from the 2000-2014 waves of the Health and Retirement Study (HRS), a longitudinal cohort study designed to be nationally representative of the US population over age 50 (Health and Retirement Study, n.d.). The HRS introduces new birth cohorts every 6 years, and participants and their spouses are surveyed every two years from study entry until death or loss to follow-up. In addition to respondents' socioeconomic characteristics, the survey includes rich detail on respondents' care needs (i.e., their difficulty with activities of daily living (ADLs) and instrumental activities of daily living (IADLs)), caregivers, and receipt of caregiving. Specifically, participants are asked about each person who provided caregiving in the last month, the number of hours, and the amount they were paid (if applicable). We begin our sample in 2002, because the questions about caregiving changed in that year, and we end our sample in 2014 since Secure Communities was replaced by the Priority Enforcement Program (PEP) that year (East et al. 2022). For all analyses, we restrict to adults over the age of 65 who report difficulty with at least one ADL or IADL.<sup>9</sup>

9. ADLs include: eating, bathing, dressing, using the toilet, getting in and out of bed, and walking across the room. One limitation of this analysis is that we will not be able to examine the impact of Secure Communities on caregiving utilization for younger people with disabilities. While older adults are more likely to receive paid caregiving than any other group, about half of all people with long-term care needs are under age 65 (Kaye, Harrington, and LaPlante 2010).

#### 4.4 American Time Use Survey

To supplement the HRS data,<sup>10</sup> we use data from the American Time Use Survey (ATUS) from 2006-2014. The ATUS is conducted annually and provides nationally representative estimates of “how, where, and with whom Americans spend their time” (cite). Respondents are asked about each activity they performed in the prior day and for how many minutes, and the survey data include the day of the week the survey was administered and whether the prior day was a holiday. From the ATUS, we collect data on respondents’ informal caregiving provision on the day prior to the survey (whether the respondent provided care to a household adult or a non-household adult, and for how many minutes). The ATUS also includes details on respondents’ demographics (age, sex, race, marital status, education, and number of children) and county of residence. We use the ATUS to examine the impact of Secure Communities on informal caregiving provision. Because SC likely directly impacted the ways foreign-born adults spent their time, and to focus on spillovers, we restrict our sample to native-born, non-Hispanic women.<sup>11</sup>

### 5 Empirical Strategy

Our empirical strategy leverages geographic and temporal variation in the activation of Secure Communities (SC) to estimate the causal impact of immigration enforcement on our outcomes of interest, which include the size of the home care workforce and older adults’ receipt of paid caregiving. To quantify SC’s impact on the total size of the home care workforce in a local area, we first estimate the following regression:

$$Y_{cst} = \beta_0 + \beta_1 SC_{cst} + X'_{cst}\gamma + \eta + \tau + \epsilon_{cst} \quad (1)$$

In our primary analysis examining SC’s effect on the overall size of the workforce, the dependent variable  $Y_{cst}$  is the number of home care workers per capita in CPUMA  $c$  in state  $s$  and year  $t$ .  $SC_{cst}$  takes a value between 0 and 1, representing the percentage of the population of CPUMA  $c$  that was covered by SC before January 1 of year  $t$ .<sup>12</sup>  $\beta_1$  is the coefficient of interest, representing

10. We started by using the ATUS data while we waited for access to the restricted HRS data.

11. Informal caregivers are disproportionately women (cite).

12. While SC was implemented at the county level, the most granular level of geographic data in the ACS is the

the causal impact of SC on the size of the home care workforce.  $X'_{cst}$  is a vector of time-variant characteristics of CPUMAs that might affect the size of the home care workforce.  $\eta$  are CPUMA fixed effects, allowing us to control for unobserved, time-invariant PUMA characteristics, and  $\tau$  are year fixed effects.

In  $X'_{cst}$  we include demographic characteristics of the CPUMA, including mean age, the share of community residents over age 65, the share female, and racial and educational composition. We also control for the share of the CPUMA receiving supplemental security income (SSI) and for state Medicaid expansion. Finally, since the Great Recession occurred during the sample period, we control for time-varying economic conditions occurring at the level of the CPUMA, including a housing price index and Bartik-style measures of labor demand (Bartik 1992).<sup>13</sup> We include these labor demand measures for four groups of workers: all workers, foreign-born workers, low-educated workers, and female workers. We describe these measures in more detail in Appendix C. Standard errors are clustered at the level of the CPUMA.

## 5.1 Effects on the Receipt of Paid Caregiving

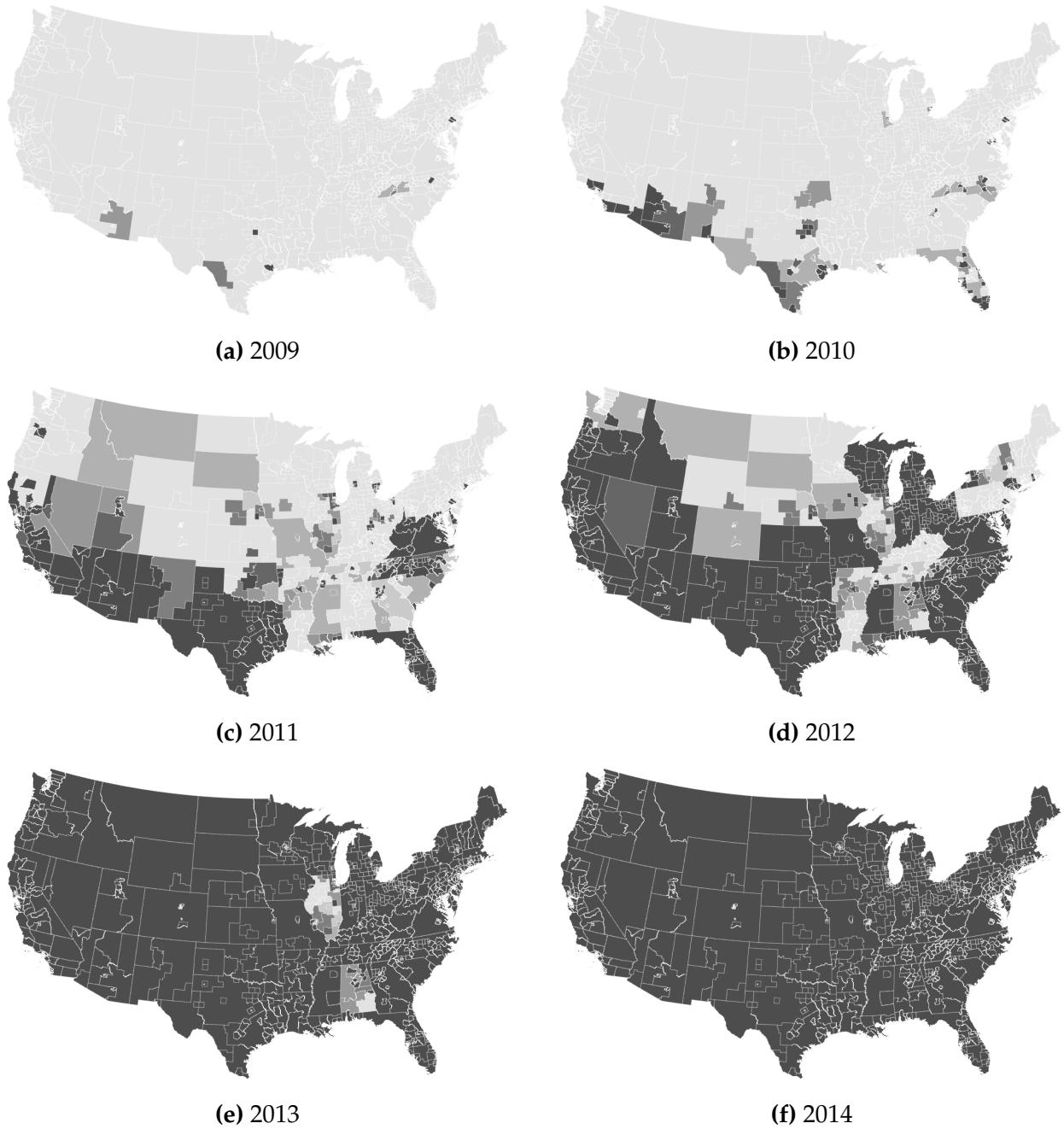
$$Y_{ict} = \beta_0 + \beta_1 SC_{ct} + X'_{ict}\gamma + Z'_{ct}\delta + \eta + \tau + \epsilon_{ict} \quad (2)$$

To analyze the effect of Secure Communities on older adults' receipt of paid caregiving, we employ a similar methodology to the one described above, this time using data from the Health and Retirement Study (HRS). The primary difference from the previously-described analysis is that the HRS analysis is conducted at the county-level. Additionally, we have information on the exact date of the HRS survey, which allows for a more granular assessment of which survey respondents had been impacted by SC at the time of the survey. To estimate the effect of SC on the receipt of paid caregiving, we estimate a similar regression to the version in equation 1 at the individual level. In this specification the dependent variable  $Y_{ict}$  is a binary variable representing whether individual  $i$  in county  $c$  received caregiving in the month prior to the survey at time  $t$ .  $SC_{cst}$  is an indicator for whether Secure Communities was implemented in county  $c$  at least one month prior to the survey date.  $\beta_1$  is the coefficient of interest, representing the causal impact of

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CPUMA.

13. We follow the methodology employed by East and Velásquez (2022).



**Figure 3:** Rollout of Secure Communities by Consistent Public-Use Microdata Area (CPUMA)

**Note:** This figure demonstrates the variation in the rollout of Secure Communities upon which we rely to identify its impact on the size of the home care workforce in Equation 1. The shading represents the percentage of the population of each Consistent Public Use Microdata Area (CPUMA) that was covered by Secure Communities before January 1st of the year.

SC on receipt of caregiving.  $X'_{ict}$  is a vector of individual level characteristics, including age, sex, race, marital status, income, education, family structure (i.e., number and presence of children and siblings), counts of ADL and IADL limitations, the presence of prior health conditions including stroke, and whether the individual was ever enrolled in Medicaid or SSI during the HRS panel.  $Z'_{ct}$  is a vector of time-variant characteristics of counties.  $\eta$  represents county fixed effects, and  $\tau$  represents interview-month fixed effects.

## 6 Results

### 6.1 Summary Statistics

Table 1 presents characteristics of CPUMAs in the pre-period (2005), disaggregated by timing of Secure Communities (SC) activation. CPUMAs are defined as early, mid-period, or late adopters according to the year when the *first county within the CPUMA* implemented SC. If the first county implemented SC between 2008-2009, the CPUMA is considered an early adopter. If the first county implemented SC between 2010-2011, the CPUMA is considered a mid-period adopter. If the first county implemented SC between 2012-2013, the CPUMA is considered to be a late adopter. For the most part, demographic and socioeconomic characteristics are similar between early, mid, and late adopters. The main exception is that the percentage of the population who are Hispanic or foreign-born is higher in the early adopter CPUMAs (26.3% and 21.2%, respectively) than in the mid-period (9.9% and 10.2%) and late adopters (11.3% and 15.8%). Additionally, early adopter CPUMAs had larger population sizes (428,000, on average) than mid-period and late adopters (261,000, 202,000).

Table 2 presents demographic and socioeconomic characteristics of US workers between 2005-2014. We present these characteristics separately for home care workers, disaggregated into categories of agency workers and independent workers. For comparison purposes, we also present characteristics of restaurant waiters, another low-paying occupation requiring a similar level of skill.<sup>14</sup> Approximately 0.78% of US workers, or 1.07 million people, are home care workers. The

14. Both occupations have a Specific Vocational Preparation (SVP) range of 4.0 to < 6.0. SVPs are defined by the U.S. Department of Labor and take into account “the amount of lapsed time required by a typical worker to learn the techniques, acquire the information, and develop the facility needed for average performance in a specific job-worker

**Table 1:** Summary Statistics by CPUMA, 2005

	All CPUMAs	Early Adopters	Mid-Period Adopters	Late Adopters
	(1)	(2)	(3)	(4)
N	1,078	162	580	336
Percent	100.00	15.03	53.80	31.17
Population (mean)	267,512	427,808	260,981	201,500
<i>Workers per capita (mean)</i>				
Home Care Workers	271	265	234	337
Personal Care Aides	126	130	123	128
Home Health Aides	145	135	112	208
Age (mean)	36.8	35.7	36.9	37.2
Percent over 65 (mean)	12.5	11.7	12.7	12.6
Percent female (mean)	51.1	50.9	51.0	51.4
<i>Race/ethnicity (%)</i>				
White	68.5	50.0	72.8	70.1
Black	11.6	15.9	10.5	11.7
Hispanic	12.8	26.3	9.9	11.3
Asian/PI	4.7	5.6	4.3	5.0
AIAN	0.7	0.6	0.8	0.5
Multiracial	1.4	1.3	1.6	1.2
Other Race	0.3	0.4	0.2	0.4
Percent foreign-born (mean)	13.6	21.2	10.2	15.8
<i>Education (mean %)</i>				
Less than HS	34.7	37.8	34.4	33.6
High School	30.1	27.5	30.7	30.2
Some College	16.2	15.8	16.8	15.4
Bachelor's Degree	12.2	12.2	11.7	13.0
5+ Years College	6.9	6.7	6.5	7.8
Percent SSI (mean)	1.8	1.8	1.7	2.1

**Note:** CPUMAs are defined as early, mid-period, or late adopters using the year the first county within the CPUMA implemented Secure Communities. If the first county implemented SC between 2008-2009, the CPUMA is considered an early adopter. If the first county in a CPUMA implemented SC between 2010-2011, the CPUMA is considered a mid-period adopter. If the first county in a CPUMA implemented SC between 2012-2013, the CPUMA is considered to be a late adopter. Source: Authors' analysis of data from the American Community Surveys.

majority of home care workers (0.86 million people) work for agencies; the rest (0.21 million) work independently or as household employees. Notably, home care workers earn very low incomes,  $\approx \$18,900$  per year or  $\$12.80$  per hour, as compared with  $\approx \$14,200$  per year or  $\$10.89$  per hour among waiters. Agency workers earn less than independent home care workers ( $\$12.66$  per hour vs.  $\$13.38$  per hour), with agency workers earning wages that are only about 16% higher than waiters' wages.<sup>15</sup> Relative to all US workers, home care workers are disproportionately female (89.3% vs. 47.7%), non-white (55.6% vs. 32.9%), and foreign-born (29.9% vs. 17.6%). Their education status is also lower, with 9.3% having at least a Bachelor's degree, relative to 30.8% among all US workers.

## 6.2 Results: Workforce Size

Table 3 displays the results of the primary analysis specified in Equation 1. Column 1 presents the results of the analysis without controls, and Column 2 presents the results with controls. Focusing on the results of the fully-specified model (Column 2), we find that SC reduces the size of the home care workforce by 29.7 workers per 100,000 residents, relative to a baseline of 396.8 workers per 100,000 residents, representing a 7.5% reduction in the overall size of the workforce.

Columns 3 and 4 present results of the analysis, stratifying by the percentage of the CPUMA population that is likely to be undocumented. Column 3 displays results for areas with below-median undocumented populations, and Column 4 presents results for areas with above-median undocumented populations. From these results, it is clear that the effect of SC is being driven by its effect on geographic areas with a large percentage of likely-undocumented (i.e., low-educated, foreign-born Hispanic) residents. In these areas, SC reduces the size of the home care workforce by 42.6 per 100,000 residents, an 8.7% reduction. While the number of home care workers also declines in below-median-undocumented CPUMAs (Col. 3), this result is not statistically significant.

Next, we examine the impact of SC, stratifying its effect by foreign-born vs. native-born workers. Table 4 present results for foreign-born home care workers, and Table 5 presents results for native-born home care workers. It is clear that the results in Table 3 are being driven primar-

15. This gap may in practice be narrower, depending on whether restaurant workers report under-the-table pay, such as cash tips, to the ACS.

**Table 2:** Summary Statistics, American Community Survey Respondents, 2005-2014 (Weighted)

	Home Care Workers	Home Care Workers (Agency)	Home Care Workers (Independent)	Restaurant Waiters	All US Workers
	(1)	(2)	(3)	(4)	(5)
N (mean per year)	1,065,849	856,802	209,046	1,853,875	136,620,602
Percentage of US workers	0.78	0.63	0.15	1.36	100.00
Income (\$)	18,870	18,460	20,580	14,180	45,420
Hourly Wage (\$)	12.80	12.66	13.38	10.89	22.70
Works Full Time (%)	52.9	52.9	53.0	38.6	79.1
Age (mean)	45.1	44.2	48.4	28.8	41.2
Female (%)	89.3	89.6	88.1	72.5	47.7
Has Children (%)	50.4	52.6	41.4	27.1	43.9
Num. Children	0.9	1.0	0.7	0.5	0.8
<i>Race/ethnicity (%)</i>					
White	44.4	41.7	55.2	68.8	67.1
Black	26.5	28.4	18.8	6.2	10.9
Hispanic	19.8	20.9	15.4	16.7	14.9
Asian/PI	6.2	5.9	7.8	5.6	5.0
AIAN	1.1	1.2	0.7	0.5	0.5
Multiracial	1.6	1.6	1.8	2.0	1.3
Other Race	0.3	0.3	0.4	0.2	0.2
Foreign-born (%)	29.9	30.3	28.2	16.8	17.6
<i>Education (%)</i>					
Less than HS	18.0	18.7	15.5	15.0	9.3
High School	47.2	47.5	46.2	39.7	34.5
Some College	25.4	25.5	25.1	34.4	25.4
Bachelor's Degree	7.4	6.8	10.2	9.8	19.8
5+ Years College	1.9	1.6	3.1	1.1	11.0

**Note:** The sample of US workers includes ACS respondents between 2005-2014 who were employed and reported any earned income in the prior year. Excluded from the sample are incorporated business owners and unpaid family workers, as well as institutional residents and residents of group quarters. Estimates are weighted to be representative of the US population. See section 4.2 for a definition of home care workers.

ily by foreign-born home care workers; while SC reduced the number of foreign-born home care workers by 20.7 workers per 100,000 residents (a 14.5% reduction from baseline), it did not have a statistically significant effect on the number of native-born home care workers per capita. Directionally, SC reduced the number of native-born home care workers by about 3.5%; however, this result is not significant. The only exception is in geographic areas with large documented popula-

**Table 3:** Effect of Secure Communities on the Number of Home Care Workers per 100,000 Residents

	HCW per Capita	HCW per Capita	HCW per Capita: Low-Undoc.	HCW per Capita: High-Undoc.
	(1)	(2)	(3)	(4)
Secure Communities	-27.956** (10.771)	-29.727** (10.644)	-16.968 (14.615)	-42.557** (16.356)
Controls	No	Yes	Yes	Yes
CPUMA FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	10,780	10,780	5,390	5,390
Adj. $R^2$	0.719	0.723	0.456	0.776
Margins Pre-SC	396.2	396.8	307.9	486.4
Margins Post-SC	368.3	367.1	290.9	443.9

Standard errors in parentheses

+  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

tions (Table 5, Column 4). In these areas, the number of native-born home care workers declined by 17.8 workers per 100,000 residents (7.2%) following the introduction of SC, and this result is marginally significant at the 10% level.

**Table 4:** Effect of Secure Communities on the Number of Foreign-Born Home Care Workers per Capita (per 100,000 Residents)

	FB HCW per Capita	FB HCW per Capita	FB HCW per Capita: Low-Undoc.	FB HCW per Capita: High-Undoc.
	(1)	(2)	(3)	(4)
Secure Communities	-19.363** (7.294)	-20.687** (6.992)	-14.781* (5.845)	-24.743+ (12.937)
Controls	No	Yes	Yes	Yes
PUMA FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	10,780	10,780	5,390	5,390
r <sup>2</sup> _a	0.832	0.836	0.692	0.838
Pre	141.7	142.1	44.0	239.9
Post	122.3	121.4	29.2	215.1

Standard errors in parentheses

+  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

**Table 5:** Effect of Secure Communities on the Number of Native-Born Home Care Workers per Capita (per 100,000 Residents)

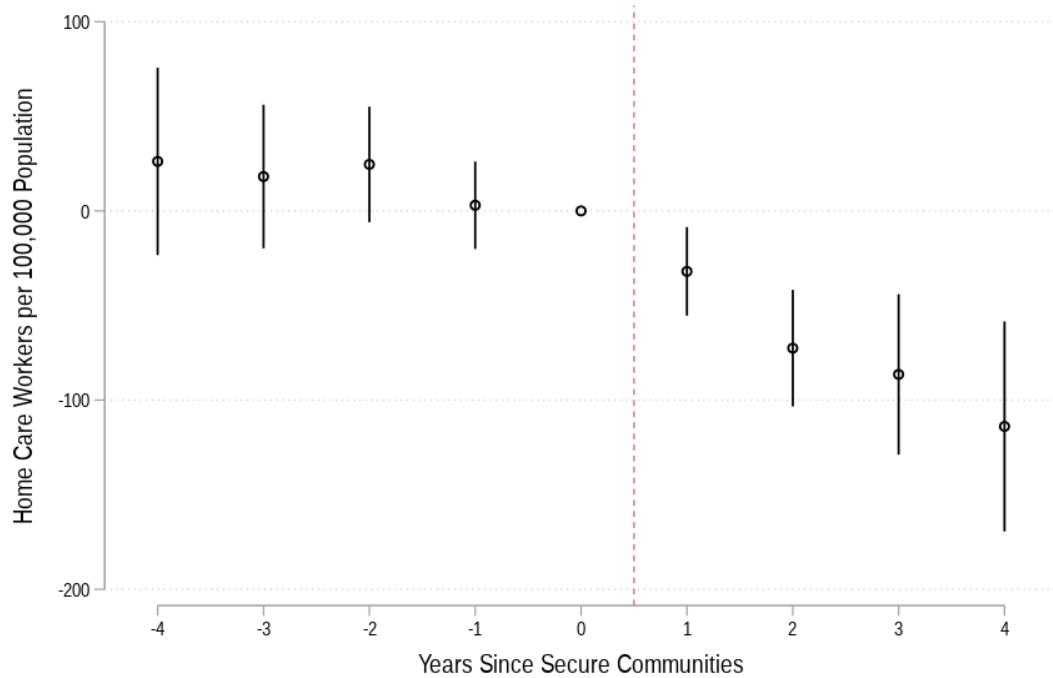
	Native HCW per Capita	Native HCW per Capita	Native HCW per Capita: Low-Undoc.	Native HCW per Capita: High-Undoc.
	(1)	(2)	(3)	(4)
Secure Communities	-8.594 (7.660)	-9.039 (7.835)	-2.187 (13.061)	-17.813+ (9.822)
Controls	No	Yes	Yes	Yes
PUMA FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	10,780	10,780	5,390	5,390
r <sup>2</sup> _a	0.454	0.458	0.413	0.500
Pre	254.5	254.7	263.9	246.6
Post	245.9	245.6	261.7	228.7

Standard errors in parentheses

+  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

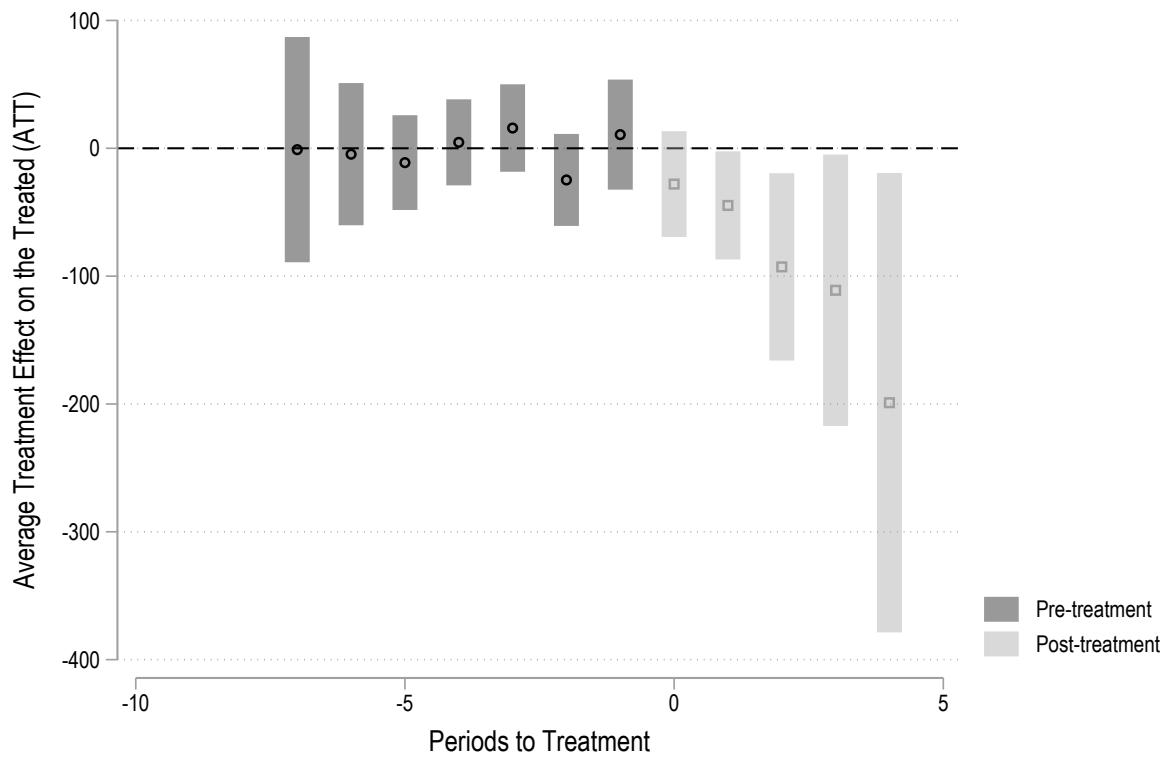
### 6.2.1 Event Study Analysis

Figure 4 presents results of an event study version of Equation 1. In this event study specification,  $SC_{cst}$  represents the number of years relative to the year the *first county in each CPUMA* implemented SC.



**Figure 4:** Event Study: Effect of Secure Communities on the Number of Home Care Workers per 100,000 Residents

There is not a statistically significant pre-trend in the size of the home care workforce prior to SC implementation; however, once SC is activated, the CPUMA's home care workforce begins to decline in size, and this decline continues for several years following SC implementation. This gradual reduction in the size of the workforce is consistent with the fact that generally only a fraction of a CPUMA's population (i.e., a subset of counties within the CPUMA) is affected by SC in the first year of implementation. This percentage grows over time as more counties in the CPUMA are exposed to the policy. The event study results are robust to an alternate specification using the Callaway Sant'Anna difference-in-differences estimator (Figure 5), which accounts for potential bias due to heterogeneous treatment effects across geographic areas.



**Figure 5:** Event Study: Effect of Secure Communities on the Number of Home Care Workers per 100,000 Residents (Callaway Sant'Anna Estimator)

### 6.3 Results: Home Care Supply (HRS Results)

**Table 6:** HRS Results: Full Sample

	(1) Any Help	(2) Family Help	(3) Formal Help	(4) Prim. Form.	(5) Cores.
SC	-0.024 <sup>+</sup> (0.067)	-0.009 (0.556)	-0.007 (0.524)	-0.011 (0.496)	0.007 (0.650)
Wave Year FE	Yes	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes	Yes
Demographics	Yes	Yes	Yes	Yes	Yes
Health	Yes	Yes	Yes	Yes	Yes
Medicaid	Yes	Yes	Yes	Yes	Yes
N	19,632	19,632	19,632	11,161	17,886
r <sup>2</sup> _a	0.419	0.363	0.233	0.184	0.196
Pre	0.581	0.514	0.126	0.159	0.260
Post	0.557	0.505	0.119	0.148	0.267

p-values in parentheses

+ p < 0.10, \* p < 0.05, \*\* p < 0.01

**Table 7:** HRS Results: Native-Born Medicaid Sample

	(1) Any Help	(2) Family Help	(3) Formal Help	(4) Prim. Form.	(5) Cores.
SC	-0.087** (0.003)	-0.020 (0.535)	-0.050* (0.041)	-0.058 <sup>+</sup> (0.096)	0.055 <sup>+</sup> (0.051)
Wave Year FE	Yes	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes	Yes
Demographics	Yes	Yes	Yes	Yes	Yes
Health	Yes	Yes	Yes	Yes	Yes
N	4,194	4,194	4,194	2,603	3,738
r <sup>2</sup> _a	0.458	0.411	0.260	0.217	0.260
Pre	0.657	0.554	0.188	0.222	0.309
Post	0.570	0.534	0.138	0.164	0.364

p-values in parentheses

+ p < 0.10, \* p < 0.05, \*\* p < 0.01

**Table 8:** HRS Results: Native-Born Non-Medicaid Sample

	(1) Any Help	(2) Family Help	(3) Formal Help	(4) Prim. Form.	(5) Cores.
SC	-0.010 (0.598)	-0.018 (0.338)	0.011 (0.414)	0.028 (0.129)	-0.007 (0.716)
Wave Year FE	Yes	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes	Yes
Demographics	Yes	Yes	Yes	Yes	Yes
Health	Yes	Yes	Yes	Yes	Yes
N	12,241	12,241	12,241	6,570	11,199
r <sup>2</sup> _a	0.407	0.363	0.230	0.200	0.185
Pre	0.546	0.498	0.095	0.117	0.210
Post	0.537	0.480	0.105	0.145	0.203

p-values in parentheses

+  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

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## Appendices

### A Data on Additional Immigration Enforcement Policies

#### A.1 287(g) Agreements

A number of U.S. states, cities, and counties implemented voluntary 287(g) agreements with ICE during the sample period. We use several data sources to compile a list of 287(g) activation and termination dates. The primary data source is a set of fact sheets published by ICE, which were previously published online and archived on the Wayback Machine website (U.S. Department of Homeland Security 2007, 2008b, 2008a; U.S. Immigration and Customs Enforcement 2009a; U.S. Department of Homeland Security 2010, 2011, 2012, 2013, 2014). These fact sheets contain lists of jurisdictions that had active Memorandums of Agreement (MOAs) with ICE at historic points-in-time, along with the date the MOA was signed. We combined these fact sheets with supplemental data sources, including signed MOAs (U.S. Immigration and Customs Enforcement 2009b), published reports (Rodríguez et al. 2010; Congressional Research Service 2021), newspaper articles (Sacchetti 2009; Pacenti 2010; Stern 2011; tucker 2011; EFE News Service 2012; Ashby and LaRosa 2012; Duda 2012; Nelson 2014; Holtmeyer and Ryburn 17), and data from Alsan and Yang (2022b), to compile a full list of 287(g) agreements that were signed between 2002-2010, along with their termination dates (where applicable).

#### A.2 Omnibus Immigration Legislation

We gathered an initial list of Omnibus immigration legislation from the National Conference of State Legislatures (NCSL) (Morse 2010; Morse, Carter, and Lawrence 2011; Morse et al. 2011a, 2011b; Morse et al. 2012; Meyer et al. 2011). Many of these laws were enjoined by the courts and prevented or delayed from taking effect. To determine which laws were subsequently implemented and their implementation dates, we performed searches for relevant news articles in the Factiva and Access World News databases. Using the NCSL reports, coupled with (**cite news-paper articles**), we determined: (1) the calendar month and year of each law's passage and (2) the calendar month and year of the law's implementation (where applicable). Additionally, we collected data on whether the legislation included a "Show Me Your Papers" (SMYP) law, along with the passage date and implementation date for each SMYP law.

#### A.3 E-Verify Legislation

Finally, we gathered data on states' E-Verify laws from the National Conference of State Legislatures (2013), Orrenius and Zavodny (2014), Bernstein et al. (2022), and Churchill et al. (2022). Using these data sources, we compiled a list of states with legislation requiring the use of E-Verify, including the name of the bill, year enacted, implementation date, repeal date (if applicable), and coverage (public employers or government contractors vs. "universal" laws covering all employers).

### B Categorizing Home Care Workers

We also use the ACS to categorize workers as agency/government workers or household employees/independent contractors, following the classification methodology used by (Kim 2022). More information on this classification is included in an Appendix.

## C Bartik Measures of Labor Demand