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The impact of changes in foreign labor supply of home-care services

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Abstract

The aging population fuels a growing demand for in-home elder care. In the United States (US), a significant part of the labor supply of home-care services are foreign-born workers. Using 2011-2019 data on employment of US and foreign-born home-care workers we find evidence of close substitution between foreign-born home-care workers and informal elderly care. We find evidence that outsourcing elderly care is associated with increased likelihood that elderly access preventive medical services and with improvements in the mental and physical health of elderly men.

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1. Introduction

The proportion of Americans aged 65 and over is growing and is expected to reach 20% of the population by 2030.¹ Approximately 70% of these individuals are expected to require significant long-term services and support, with 48% eventually depending on paid care (Johnson, 2019). Seniors overwhelmingly (88%) indicate that they want to remain in their homes for as long as possible, contributing to a massive escalation in the demand for in-home elder care (Robinson-Lane, 2022). As a result, home health care expenditures have surged from \$32 to \$133 billion between 2000 and 2022², and are expected to reach \$383 billion by 2028.³

The decrease in the ratio of prime working-age adults per individuals 65 and older puts increasing pressure on the home-care market, as the potential supply does not increase at the same pace as the demand. The sector is expected to create roughly 765,800 job openings annually for the next decade⁴, yet home-care agencies have long struggled to meet their staffing needs. However, an hourly mean wage of \$14.26, alongside stressful conditions and long hours make it difficult for home-care agencies to retain workers, as reflected by the median turnover rate of 77.1% in 2022 and a pre-pandemic rate of 81.6% (Donlan, 2023). In the past, that burden has been lightened by a consistent supply of immigrant labor, but the current debate around immigration raises concerns regarding the future of home health care availability and its likely impact on seniors and their families.

Even when available, the median annual cost of home health care services, \$75,500 in 2023⁵, made professional care services unaffordable for many families. Additionally, these prices can vary significantly. For instance, in Montana annual rates exceed \$113,000 (Vankar, 2024). Although funding for these services is primarily through Medicaid (49%) and Medicare (20%), out-of-pocket costs for families have grown significantly and now represent a major financial burden even for middle-income households (Shen et al., 2025). Consequently, many of the elderly have been forced to rely on unpaid family or friends. In fact, in 2021, approximately 38 million caregivers provided an average of 18 hours of unpaid care per week, totaling 36 billion hours of care valued at \$600 billion (Harris and Marshall, 2024).

¹ “Older People Projected to Outnumber Children for First Time in U.S. History.” Census.Gov, US Census Bureau, 8 Oct. 2021, www.census.gov/newsroom/press-releases/2018/cb18-41-population-projections.html.

² Statista. *Home health expenditures in the U.S. since 1960*. Statista. Retrieved September 12, 2025, from <https://www.statista.com/statistics/184783/home-health-expenditures-in-the-us-since-1960/>

³ Grand View Research. (2025). *U.S. home healthcare market size, share & trends analysis report by component, by indication, by region, and segment forecasts, 2025-2033* [Industry report]. Grand View Research. <https://www.grandviewresearch.com/industry-analysis/us-home-healthcare-market-report>

⁴ “Home Health and Personal Care Aides.” U.S. Bureau of Labor Statistics, U.S. Bureau of Labor Statistics, 25 Apr. 2023, <https://www.bls.gov/ooh/healthcare/home-health-aides-and-personal-care-aides.htm#tab-1> in

⁵ Genworth Financial, Inc. (2024, March 12). *Genworth releases cost of care survey results for 2023: Twenty years of tracking long-term care costs*. Business Wire. <https://www.businesswire.com/news/home/20240312022613/en/>

An alternative source of home-care services is foreign labor. In 2022, foreign-born workers represented 40% of home health aides and 28% of personal care aides, far exceeding the 18% share of foreign workers in total employment.⁶ Given the high dependence of the home-care sector on foreign labor, this paper aims to provide relevant information regarding the impact of foreign labor on the home-care market.

First, we complement the previous literature reporting evidence that immigration increases the labor supply of high-wage women (Cortes and Tessada, 2011) by providing direct evidence of the mechanism of such a result. We find evidence of close substitution between informal caregiving and foreign home-care workers⁷ especially in the case of women providing informal elderly care.

The second contribution of this paper refers to the impact on the elderly. Previous literature found evidence that immigrant labor is associated with fewer hospitalizations or emergency visits among elderly (Grabowski et al., 2023) and a lower likelihood of living in an institutionalized setting (Butcher et al., 2022). These changes may represent improvements but also bear the alternative interpretation of failure to intervene. This paper investigates the impact of changes in foreign home-care supply on more general measures of quality of life and finds evidence that an increase in foreign-born workers is associated with better mental health and physical health among men over 65 years old, a clear improvement in quality of life.

2. Data

Data on home-care workers for the period 2011-2019 by state and year come from the American Time Use Survey (ATUS). The beginning of the period marks the date ATUS started reporting data on individuals' engaging in elderly care. The end of the period investigated is determined by the change in coding of the variables of interest.

To identify home-care workers, we rely on the Bureau of Labor Statistics description⁸ "Home health and personal care aides work in a variety of settings, including clients' homes, group homes, and day services programs. Most aides work full time, although part-time work is common. Work schedules may vary."

Accordingly, home-care workers were identified using their occupation and industries of employment. We include all workers with occupations identified by codes 3600 (nursing, psychiatric and home health aides) and 4610 (personal care aides) and working in industries coded 8170 (home health care services), 8290 (residential care facilities, except skilled nursing

⁶ "Healthcare Occupations: Characteristics of the Employed." U.S. Bureau of Labor Statistics, U.S. Bureau of Labor Statistics, www.bls.gov/spotlight/2023/healthcare-occupations-in-2022/. Accessed Feb. 6, 2025.

⁷ Consistent with Kreider and Werner (2025) findings that legislation that reduce immigration also reduces the likelihood that elderly receive help at home.

⁸ U.S. Bureau of Labor Statistics. (2023, April 25). *Home health and personal care aides*. Occupational Outlook Handbook. U.S. Department of Labor. <https://www.bls.gov/ooh/healthcare/home-health-aides-and-personal-care-aides.htm>

facilities)⁹, 8370 (individual and family services), 9290 (private households). ATUS also identifies individuals' place of birth, thus allowing us to separate the domestic and foreign-born supply of home-care workers, our independent variable of interest.

This dataset provides a measure of informal home-care in the variable identifying whether a person provided elder-care in the three months prior to the interview. The availability and prices of home-care services determine the extent to which family members may give up their own employment to care for their relatives, potentially a source of inefficiency. We focus on individuals aged 45 to 64, the population most likely to act as caregivers for elderly.¹⁰ The dataset provides some demographic characteristics for this sample such as age, Hispanic, Black, male, education (at least high-school, college or more).

For the analysis of the effect on elderly outcomes, we use the Behavioral Risk Factors Surveillance System (BRFSS) data for the sample of individuals aged older than 65, who are the most likely beneficiaries of home-care services. Lack of support from family or hired help might prevent elderly from accessing services and delay their health care. This dataset includes information regarding the use of preventive care by individuals, specifically whether the individual did not have a routine checkup for more than 12 months. In addition, BRFSS provides data on quality of life: monthly days of poor mental health, and monthly days of poor physical health, and some socio-economic and demographic characteristics: age, race, ethnicity, education and income. It also provides the state of residence that allows us to identify the relevant labor supply information.

Summary statistics for the variables of interest are reported in Table I.

Table I. Summary Statistics

	Obs	Mean	Std dev
ATUS 2011-2019			
Women 45-64 providing elder care	17,796	0.294	0.455
Men 45-64 providing elder care	15,424	0.235	0.424
US born home-care workers	33,220	0.006	0.076
Foreign born home-care workers	33,220	0.002	0.048
BRFSS 2011-2019			
Females Age > 65			
No check-up > 12 months	768,672	0.105	0.307
Days poor mental health	760,478	2.672	6.974
Days poor physical health	749,254	5.563	9.890
Males Age > 65			
No check-up > 12 months	480,029	0.116	0.320
Days poor mental health	475,524	2.002	6.343
Days poor physical health	470,878	5.017	9.700

Summary statistics reported for the samples used in the regressions are reported in Tables II and III.

⁹ Home-care workers can work in assisted living facilities alongside working in private homes, or can move in and out of each type of employment.

¹⁰ Source: <https://www.bls.gov/news.release/pdf/elcare.pdf> accessed April 2, 2025

The analysis includes several controls measured at the state level. Population data by age, and race come from the National Center for Health Statistics. Income per capita comes from the Bureau of Economic Analysis and the unemployment rate comes from the U.S. Bureau of Labor Statistics.

3. Empirical Strategy

We use a two-way fixed effects model to estimate the relationship between the supply of home-care workers and the level of informal care of elderly.

$$Y_{ist} = \beta_1 \text{US-born home-care workers}_{st} + \beta_2 \text{US-born home-care workers}_{s,t-1} + \beta_3 \text{Foreign-born home-care workers}_{st} + \beta_4 \text{Foreign-born home-care workers}_{s,t-1} + \beta_5 X_{ist} + \beta_6 Z_{st} + \gamma_t + \mu_s + \varepsilon_{ist} \quad (1)$$

The dependent variable, Y_{ist} , could be defined as (i) an indicator variable equal to 1 if a person aged 45 to 64 living in state s , during year t provided elder care in the past three months, (ii) an indicator variable if an individual older than 65 years old in state s , year t did not receive preventive care in the previous 12 months, (iii) the number of days in the previous month during which an individual over 65 in state s year t reported poor physical health, or (iv) the number of days in the previous month during which the over 65 years old individual in state s year t reported poor mental health.

The variables of interest, *US-born home-care workers* and *Foreign-born home-care workers* were obtained by collapsing the data into state-year cells, using the survey weights provided by ATUS. Thus, these variables are the proportion of home-care workers in the state population. There is no clear theoretical basis for expecting an immediate effect or a lagged effect. For example, in the presence of an existing shortage of home care workers, an increase in labor supply could have an immediate effect on informal care. At the same time, there may be lags in the effect as individuals learn about the availability and quality of home care services, and as prices adjust to the information about labor supply in the home care sector. The timing of the effect is therefore ultimately an empirical question. Accordingly, the econometric model allows for both a contemporaneous and a lagged effect.

The model controls for the characteristics of the population investigated: age, Hispanic, Black, male, education (at least high-school, college or more) and state-level variables, Z_{st} , correlated with the demand for elder care: log income per capita, unemployment rate, population, percent Black, percent Hispanic, percent male, and the age structure of the state population (percent 12-17, 18-24, 25-44, 45-64, and over 65 years old).

State fixed effects, μ_s , account for any stable unmeasured heterogeneity across states (for instance general health level in population), while year fixed effects, γ_t , absorb time varying differences in informal care that are common to all states such as those driven by changes in Medicare or Medicaid policies.¹¹

¹¹ The models exhibit poor convergence properties in the presence of state specific trends; however, the results that were successfully estimated were virtually identical to those obtained without state specific trends (available on request).

The analysis of elderly outcomes using individual level data from BRFSS employs the same empirical strategy, where the individual level control variables that capture the characteristics of the population investigated, i.e. individuals more than 65 years old, are age, age squared, gender, race, ethnicity, education, health insurance, and income bracket, and the state level controls are identical to those specified above.

We estimate probit models for binary dependent variables such as whether an adult provides elderly care, or an elderly failed to access preventive care for more than 12 months, and negative binomial models for count outcomes such as counts of days of poor health.

4. Results

As reported in Table II, the estimated association between the supply of home-care workers and informal caregiving is consistent with strong substitutability between informal and market-based provision of home-care. The degree of substitutability, however, varies across types of informal caregivers and home-care workers. There is some evidence of immediate substitution between male-provided informal caregiving and US-born home-care workers, although it is not significant at standard statistical levels. The estimated effect on female-provided caregiving occurs with a lag and is larger, albeit also imprecisely estimated.

Table II. The Impact of Home Care Workers on Elderly Informal Care

	Women 45-64	Men 45-64
US born HCW t	0.030 (0.047)	-0.270* (0.161)
Foreign born HCW t	-0.138** (0.066)	-0.045 (0.219)
US born HCW t-1	-1.242* (0.754)	-0.870 (0.643)
Foreign born HCW t-1	-1.832* (1.090)	-0.104 (0.716)
Obs.	17,796	15,424

HCW stands for home-care workers. Each column represents a different regression as described in section 3. The number of observations varies across specifications due to data availability. All estimates are marginal effects. Robust standard errors clustered at the state level are reported in parentheses. ** significant at the 5% significance level; * significant at the 10% significance level

Foreign-born home-care workers appear to be strong substitutes for female-provided caregiving. The immediate effect indicates that one additional foreign-born worker per 1000 people lowers the likelihood that women provide caregiving by ~1.4%, possibly increasing up to ~1.8% one year later. Although the lag effect is less precisely estimated, it is economically significant. Such estimates are plausible where women are the default caregivers. US-born workers provide home-care when the opportunity cost of family-provided caregiving is high,

while foreign-born workers are likely the marginal workers employed only when the market price of home-care is low enough. These results are consistent with a world in which the availability of foreign-born labor supply of health aides frees the local population from elderly care and allows for gains from specialization.

The remaining question is whether outsourcing caregiving affects elder outcomes. The estimates reported in Table III indicate that an additional foreign-born worker per 1000 people is associated with a lower likelihood of delayed preventive care by ~4.7% among elderly men. It is also associated with one fewer day of poor mental health and ~1.4 fewer days of poor physical health per month among elderly males over 65. The effect on physical health is concentrated among the under 75-year-olds and is virtually inexistent among those older than 75, which explains why the overall effect is less precisely estimated in the over 65 sample (results available on request). On the other hand, the effect on mental health is concentrated among older individuals and is lower among those under 75.

Table III. Home-Care Workers and Elderly Outcomes

	Females Age > 65			Males Age > 65		
	No. check- up >12 months [1]	Days poor mental health [2]	Days poor physical health [3]	No check-up >12 months [4]	Days poor mental health [5]	Days poor physical health [6]
US born HCW, t	-0.074 (0.127)	3.448** (1.717)	1.251 (1.908)	0.124 (0.109)	-2.811 (1.892)	-2.496 (2.756)
Foreign born HCW, t	0.049 (0.110)	-4.013 (3.513)	-6.819 (6.514)	-0.099 (0.177)	-11.319*** (3.558)	-6.729 (5.734)
US born HCW, t-1	0.012 (0.149)	-0.512 (2.243)	2.400 (2.862)	-0.156 (0.161)	0.430 (1.706)	3.826 (2.811)
Foreign born HCW, t-1	-0.352 (0.246)	-6.127 (3.828)	0.184 (3.597)	-0.475** (0.241)	8.503 (6.169)	-13.701* (7.638)
Obs.	768,672	760,478	749,254	480,029	475,524	470,878

HCW stands for home-care workers. Each column represents a different regression as described in section 3. The number of observations varies across specifications due to data availability. All results are marginal effects. Because the dependent variable in columns [1] and [4] refers to the previous 12 months, it is measured the year following period t. Robust standard errors clustered at the state level are reported in parentheses. *** significant at 1% significance level; ** significant at 5% significance level; * significant at 10% significance level.

Foreign-born labor supply does not appear to have a significant effect on elderly women, but increases in US-born workers are associated with better mental health.

5. Discussion

In the United States, a large share of home-care workers are immigrants, making the supply of workers sensitive to changes in immigration trends. This paper uses year-to-year variation in the stock of foreign-born workers, which could be due to changes in immigration,

emigration, and alternative labor market opportunities, to provide evidence of the impact of immigration on the home-care market. Thus, our estimates are more general than those that obtained using variation in one immigration policy which could pick up selection effects.

These estimates cannot be interpreted as causal effects because worker density is unlikely to be exogenous. We cannot exclude the possibility that changes in state characteristics simultaneously affect the supply of home care workers, the use of informal care, and the health of elderly. To the extent that the geographical distribution of home care workers responds to local demand conditions and more frail individuals have a higher demand for home care, our results represent a lower bound of the true effect on elder health.

On the other hand, the demand for home care may be higher in areas with higher labor force participation and higher wages, where individuals are more likely to outsource caregiving. Because income is positively correlated with health, a positive association between home care workers and elderly's health may reflect the effect of income. Our models control for both income and unemployment levels, however we cannot reject the hypothesis that other (omitted) unobserved factors may contribute to the observed associations. To the extent to which these factors influence the density of domestic workers in the same manner as they affect the density of foreign-born workers, the larger estimated effects for foreign-born workers are likely to reflect genuine changes in outcomes rather than spurious correlations driven by omitted variables.

We find strong evidence that increases in the number of foreign-born home-care workers are associated with reductions in informal caregiving, especially among women, and that this shift is accompanied by improvements in health outcomes among elderly males. We find evidence of both immediate effects, consistent with households responding promptly to shifts in market conditions, and lagged effects, reflecting gradual adjustments as information spreads, contractual arrangements adjust, and health effects materialize.

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