

Preliminary & Incomplete

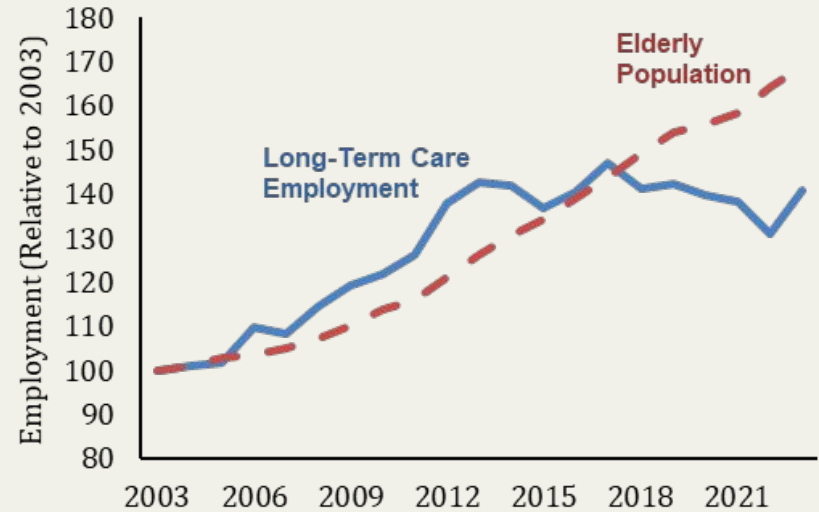
Effect of Labor Market Policies on Care and Outcomes for People with Cognitive Impairment and Their Caregivers

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How do labor market policies affect people with cognitive impairment and their caregivers?



■ Policy Variation

- Minimum wages
- Fair Labor Standards Act
- Immigration

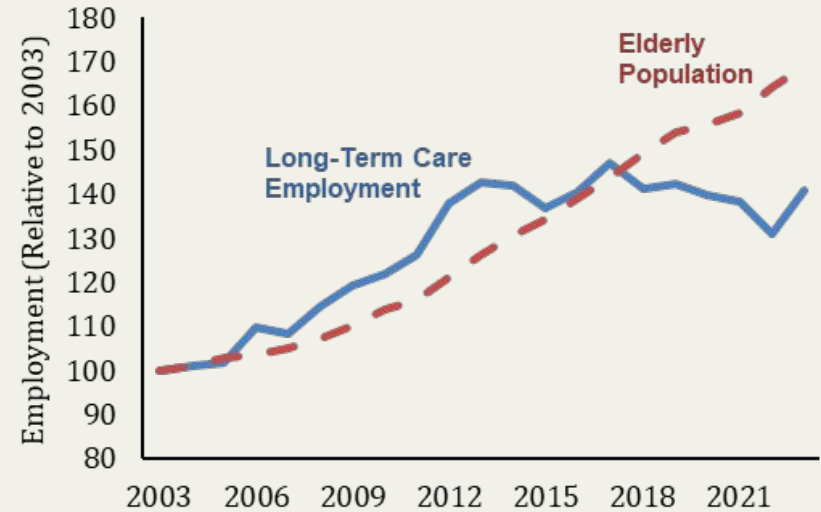
■ Data

- Health and Retirement Study
- Commuting Zone level
- 2004 - 2018

■ Outcomes

- Cost and quantity of care
- Length and quality of life
- Care setting

How does **immigration** impact the likelihood of receiving formal care or living in an nursing home?



■ Policy Variation

- Immigration policy
 - Shift-share instrument

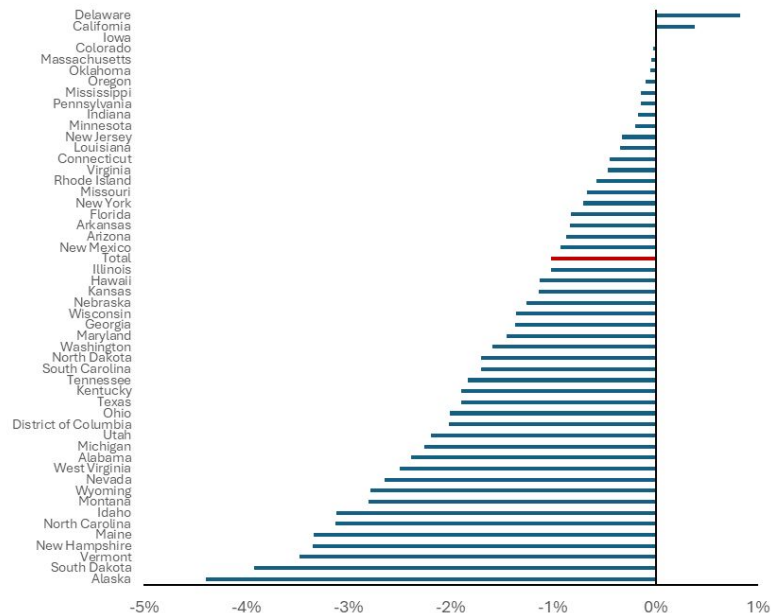
■ Data

- Current Population Survey
- Health and Retirement Study
- 2004 - 2018

■ Outcomes

- Living in a nursing home
- Receiving formal care in the home (home health care)

Trends in the Long-Term Care Labor Force per Elderly Person, 2003-2023



Source: Current Population Survey ASEC.

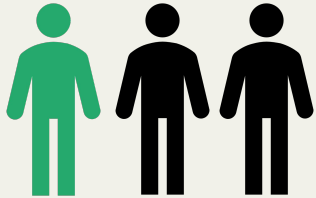
Large Variation in Relative Supply Across States

States with larger, growing populations have been *least* affected.

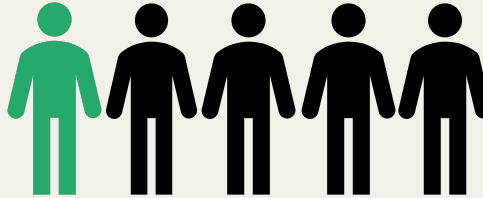
Smaller states with less immigration have seen the greatest decreases in LTC labor force per elderly population.

Immigrants make up a disproportionate share of the LTC workforce

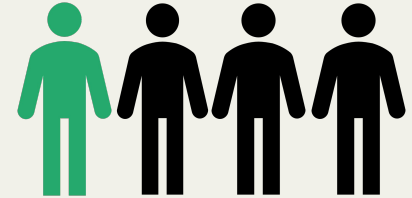
■ Home Health (32%)



■ Nursing Facilities (21%)



■ Residential Facilities (24%)



Policy Implications

■ Immigration

- Measure one potential impact of immigration
- Could motivate targeted visas or redirection of enforcement efforts
- States/regions may want to attract immigrants based on satisfaction with LTC

■ LTC Financing & Workforce Development

- Further motivation for investment in long-term care workforce
- Implications for Medicaid reimbursement rates, programs that finance home-based care

Literature

- **Butcher, Moran & Watson (2022)**

Design: Shift–share IV based on 1970 immigrant settlement patterns × national inflows (ACS & Census 1980–2000).
Finding: A 10 pp rise in less-educated immigrant share led to 1.5 pp decrease in institutionalization among ages 65+, 3.8 pp decrease in institutionalization among ages 80+

- **Grabowski, Gruber & McGarry (2023)**

Design: Shift–share IV using ACS immigration inflows by ethnicity weighted by prior employment in nursing homes.
Finding: A 10% increase in female immigration led to +0.7 % CNA hours per resident, +1.1 % RN hours per resident, 0.6% fewer hospitalizations

- **Kreider & Werner (2025)**

Design: Event-study / DiD using Secure Communities rollout (2008–2013) + ACS & HRS.
Finding: Immigration enforcement led to 7.5 % decrease in size of the home-care workforce; among Medicaid seniors, –10.5 % decrease in receiving any help, –23 % decrease in receiving formal home care

Shift-Share Instrument

- Immigration is endogenous
 - May be correlated with unobserved determinants of care outcomes
 - Ex: Generous social safety net may both attract more immigrants and improve elder care
- Solution: Shift-share instrument
- Utilize the fact that some immigrant groups are more likely to work in elder care than others; wide variety based on birthplace (e.g. Caribbean immigrants do more care work than Western European immigrants)
- Restrict to women in the following industries:
 - Nursing homes
 - Residential care facilities without nursing
 - Home health care



Instrument =

(Baseline population_{birthplace, metro, year}) x

(Probability of care work_{birthplace}) x (National shift in immigration_{birthplace, year})

Baseline immigrant population by birthplace-metro

For each birthplace group, record the number of immigrants living in each metro area during the first year that birthplace-metro combination appears in the data

Relative probability of elder care work by birthplace

For each birthplace group, calculate the fraction working in a health or personal care profession over the first 10 years of data (1995- 2005)

National shift in immigration by birthplace-year

- For each birthplace b and year y , calculate the relative change in national population size between 1995 and y
- For example: If there are 100,00 immigrants from birthplace b in 1995 and 200,000 immigrants from this group in 2010, calculate the “national shift” as $200,000/100,000 = 2$

Scaling the Instrument

Challenge:

- Large metro areas have large values of the instrument (due to large baseline population) and large numbers of immigrant women in care work

Solution:

- Scale both endogenous variable (immigrant women in elder care work) and instrument by “need for care”
- Need for care is estimated using population size in age groups 65-74, 75-84, and 85+
- Multiply population size in each age group by fraction of people in HRS (within that age group) who use elder care

Result:

- Mean: 0.039
- Standard deviation: 0.044

Example

Birthplace: Caribbean
Metro area: Hartford, CT
Year: 2015

- Dominican Republic, Haiti, Jamaica, Bahamas, Barbados, Dominica, Grenada, Trinidad & Tobago, Antigua & Barbuda, St Kitts – Nevis, St. Lucia, St. Vincent & the Grenadi
- Baseline population, Hartford = 51,139
- Eldercare weight = 0.097
- Population shift, national = 0.846
- Care need = 49,603

Results (Scaled by need for care)

Instrument = 0.0847

True # immigrants in eldercare = 0.0697

Birthplace: Eastern Europe
Metro area: Ann Arbor, MI
Year: 2015

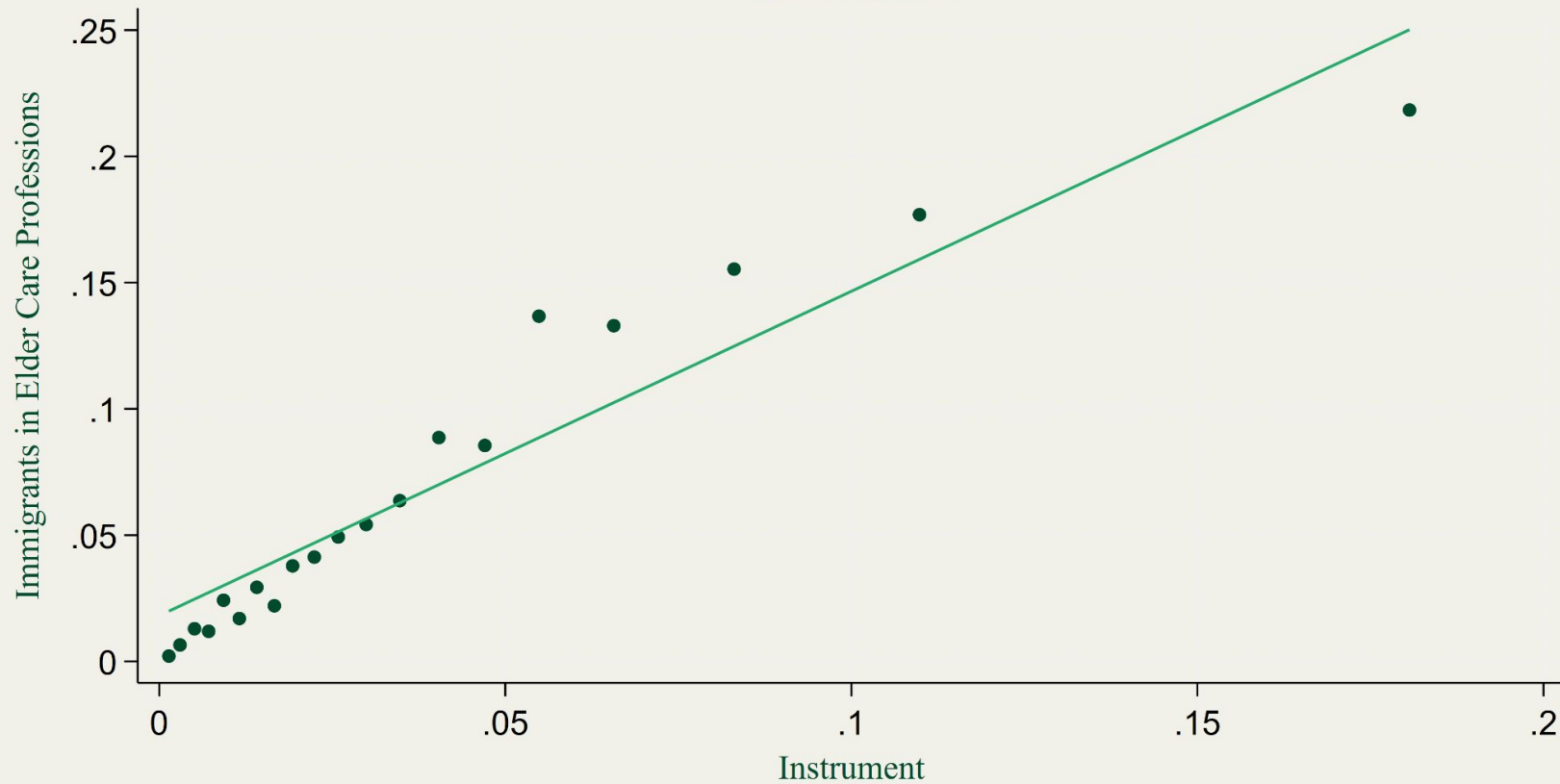
- Austria, Czechoslovakia, Germany, Hungary, Poland, Romania, Bulgaria, Albania, Bosnia & Herzegovina, Croatia, Macedonia, Serbia, Kosovo, Montenegro
- Baseline population, Ann Arbor = 1,589
- Eldercare weight = 0.017
- Population shift, national = 0.34
- Care need = 12,984

Results (Scaled by need for care)

Instrument = 0.0009

True # immigrants in eldercare = 0

Immigrants in Elder Care Professions vs Instrument



Both variables are scaled by need for care.

Preliminary Regressions

■ Outcomes

- Living in a nursing home
- Receiving formal care in the home

■ Subsamples

- Top 10% and top quartile most likely to use [nursing home, home health]
- Age 75+ with memory impairment

Notes on specification

All models control for age, sex, education, number of children, race, ethnicity, and health history (ever had stroke, cancer, or heart disease).

Additional controls:

- ADLs = difficulty with walking across a room, bathing, eating, getting out of bed, using the toilet
- IADLs = difficulty with preparing meals, grocery shopping, making phone calls, taking medication, managing money
- Movement = difficulty with walking several blocks, sitting for two hours, getting up from a chair, climbing several flights of stairs, stooping/kneeling/crouching, reaching arms, pushing/pulling large objects, carrying weights over 10lb, picking up a dime from a table
- Cognition = self-rated poor/fair memory, self-described declining memory, word recall task results, having a proxy

Coefficients on Immigration

Outcome	OLS	N
Living in a nursing home	-0.00138 (0.00149)	93,778
Using home health	0.0368*** (0.00949)	93,849

All models control for age, sex, education, number of children, race, ethnicity, and basic health history.
Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Coefficients on Immigration

Outcome	OLS	IV	N
Living in a nursing home	-0.00138 (0.00149)	-0.00361 (0.00292)	93,778
Using home health	0.0368*** (0.00949)	0.0406** (0.0173)	93,849

All models control for age, sex, education, number of children, race, ethnicity, and basic health history.
Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

With IV, coefficients get slightly larger; standard error increases.

Coefficients on Immigration

Outcome	OLS	IV	IV + ADLs & IADLs	N
Living in a nursing home	-0.00138 (0.00149)	-0.00361 (0.00292)	-0.00493* (0.00296)	93,778
Using home health	0.0368*** (0.00949)	0.0406** (0.0173)	0.0262 (0.0163)	93,849

All models control for age, sex, education, number of children, race, ethnicity, and basic health history.
Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Coefficients on Immigration

Outcome	OLS	IV	IV + ADLs & IADLs	IV + Movement & Cognition	N
Living in a nursing home	-0.00138 (0.00149)	-0.00361 (0.00292)	-0.00493* (0.00296)	-0.00574* (0.00311)	93,778
Using home health	0.0368*** (0.00949)	0.0406** (0.0173)	0.0262 (0.0163)	0.0289* (0.0162)	93,849

All models control for age, sex, education, number of children, race, ethnicity, and basic health history.
Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Coefficients on Immigration

Outcome	OLS	IV	IV + ADLs & IADLs	IV + Movement & Cognition	N
Living in a nursing home	-0.00138 (0.00149)	-0.00361 (0.00292)	-0.00493* (0.00296)	-0.00574* (0.00311)	93,778
Using home health	0.0368*** (0.00949)	0.0406** (0.0173)	0.0262 (0.0163)	0.0289* (0.0162)	93,849

All models control for age, sex, education, number of children, race, ethnicity, and basic health history.
Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Outcome: Living in Nursing Home

Subsample	Coefficient (SE)	N
Top 10% Propensity	-0.0707*** (0.0270)	8,356
Top Quartile Propensity	-0.0240** (0.0113)	23,277
Age 75+ with Poor/Fair Memory or Proxy	-0.0528*** (0.0192)	10,076

All models control for age, sex, education, number of children, race, ethnicity, and basic health history.
Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Interpretation: Standard deviation of instrument is 0.044, so effect size is about -0.3pp for top 10% propensity subsample.

Outcome: Living in Nursing Home

Subsample	Coefficient (SE)	N
Top 10% Propensity	-0.0707*** (0.0270)	8,356
+ ADLs & IADLs	-0.0851*** (0.0275)	8,356
Top Quartile Propensity	-0.0240** (0.0113)	23,277
+ ADLs & IADLs	-0.0294** (0.0116)	23,277
Age 75+ with Poor/Fair Memory or Proxy	-0.0528*** (0.0192)	10,076
+ ADLs & IADLs	-0.0677*** (0.0196)	10,076

All models control for age, sex, education, number of children, race, ethnicity, and basic health history.

Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Subsample (Outcome: Nursing Home)	Coefficient (SE)	N
Top 10% Propensity	-0.0707*** (0.0270)	8,356
+ ADLs & IADLs	-0.0851*** (0.0275)	8,356
+ Movement & Cognition	-0.0869*** (0.0284)	8,356
Top Quartile Propensity	-0.0240** (0.0113)	23,277
+ ADLs & IADLs	-0.0294** (0.0116)	23,277
+ Movement & Cognition	-0.0294** (0.0116)	23,277
Age 75+ with Poor/Fair Memory or Proxy	-0.0528*** (0.0192)	10,076
+ ADLs & IADLs	-0.0677*** (0.0196)	10,076
+ Movement & Cognition	-0.0702*** (0.0199)	10,076

All models control for age, sex, education, number of children, race, ethnicity, and basic health history.

Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Outcome: Receiving Home Health

Subsample	Coefficient (SE)	N
Top 10% Propensity	0.197** (0.0994)	8,766
Top Quartile Propensity	0.150*** (0.0559)	23,357
Age 75+ w/ Poor/Fair Memory or Proxy	0.241*** (0.0662)	10,076

All models control for age, sex, education, number of children, race, ethnicity, and basic health history.

Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Interpretation: Standard deviation of instrument is 0.044, so effect size is about +0.96pp for 75+ with memory problems.

Outcome: Receiving Home Health

Subsample	Coefficient (SE)	N
Top 10% Propensity	0.197** (0.0994)	8,766
+ ADLs & IADLs	0.123 (0.0957)	8,766
Top Quartile Propensity	0.150*** (0.0559)	23,357
+ ADLs & IADLs	0.0942* (0.0116)	23,357
Age 75+ w/ Poor/Fair Memory or Proxy	0.241*** (0.0662)	10,076
+ ADLs & IADLs	0.151** (0.0590)	10,076

All models control for age, sex, education, number of children, race, ethnicity, and basic health history.
Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Subsample (Outcome: Home Health)	Coefficient (SE)	N
Top 10% Propensity	0.197** (0.0994)	8,766
+ ADLs & IADLs	0.123 (0.0957)	8,766
+ Movement & Cognition	0.130 (0.0966)	8,766
Top Quartile Propensity	0.150*** (0.0559)	23,357
+ ADLs & IADLs	0.0942* (0.0116)	23,357
+ Movement & Cognition	0.0939* (0.0551)	23,357
Age 75+ w/ Poor/Fair Memory or Proxy	0.241*** (0.0662)	10,076
+ ADLs & IADLs	0.151** (0.0590)	10,076
+ Movement & Cognition	0.158*** (0.0589)	10,076

All models control for age, sex, education, number of children, race, ethnicity, and basic health history.
Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Next Steps

■ Additional living situations

- Living with an unmarried partner
- Living with an adult child

■ Caregiver outcomes

- Probability of working outside the home
- Physical and mental well-being

■ Patient outcomes

- Health status
- Quality of life
- Spending

■ Minimum wages & FLSA

- Additional policy variation
- Minimum increases at the state and local level
- Addition of home care rule to Fair Labor Standards Act

Works Cited

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