The Association between High Medical Costs & Migration in the United States

Zuriel Sanders
University of San Francisco, zsanders@usfca.edu

Follow this and additional works at: https://repository.usfca.edu/thes

Part of the Health Policy Commons, Social Policy Commons, and the Social Welfare Commons

Recommended Citation
https://repository.usfca.edu/thes/1510

This Thesis is brought to you for free and open access by the All Theses, Dissertations, Capstones and Projects at USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. It has been accepted for inclusion in Master's Theses by an authorized administrator of USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. For more information, please contact repository@usfca.edu.
The Association between High Medical Costs & Migration in the United States

Zuriel Sanders
Andrew Hobbs
Department of Economics

Abstract: In the United States, the current medical system has been controversial due to its non-universal design. Typically those who’re employed and middle or upper class have the most access to health care due to this design. Even among those with access to health insurance the amount of out-of-pocket medical expenses that families are exposed to after insurance can cause a burden in itself for staying financially afloat that year, especially when paired with the increasing cost of living in the U.S. from 2009-Present. For the purpose of this paper, we’ll be examining the relationship between migration & high medical expenses in the United States from 2009-2019. Our findings find a relationship between medical expenses and migration, and also a relationship between State-level medicaid expansion with decreased migration/medical costs.

1. Introduction: Starting as far back as Arrow (1963) which went into length about the inefficiencies of the medical care system in the U.S., specifically how the health insurance market is one of the main causes of this inefficiency. There’s been a sort of common knowledge that the healthcare system in the United States is a broken one in need of a major overhaul. However, there hasn’t yet been a paper which explores the
household migration patterns (whether a family moves or doesn’t) based on their share of out-of-pocket medical expenses. In this paper we’ll be examining what kind of affect out-of-pocket medical expenses could have when a household is deciding whether to stay or move. And also if Medicaid Expansion, which began after 2013 as a part of President Obama’s Affordable Care Act. Has had some sort of effect on mitigating any influence medical expenses have on migration or on out-of-pocket medical expenses.

2. Literature Review:

There is limited literature on how out-of-pocket medical expenses affect household migration in the U.S. or how it affects future household outcomes. The closest piece of literature is Linde & Egede’s (2023) paper, “Association Between State-Level Medicaid Expansion and Eviction Rates” which found that in the U.S. from 2002 to 2018 the expansion of Medicaid was associated with county eviction judgments and a reduction in the rate of eviction judgments. Which suggests that health insurance is making households more resistant to health expenses and less likely to have to suddenly move due to high medical expenses. Housing insecurity is related to poor health outcomes for families so this suggests health insurance adds a level of housing security.

There’s been a lot of literature about how eviction/homelessness puts people at a disadvantage and can lead to them falling into a cycle of poverty. Collinson (2022) shows that even the lead up to an eviction case leads to more hospital visits, less earnings, a stronger detachment from seeking employment, and homelessness. The
effect was larger on female and black tenants. And in the long run this leads to worse financial health because of decreased credit scores and indebtedness. This in-turn burdens local governments who have to deal with the high cost of providing health care and services related to homelessness.

Balboni (2022) explored the concept behind a poverty trap and the question of why people continue to remain financially disadvantaged. The findings was a lack of opportunity and resources, not aptitude. When people are evicted they’re put at a massive disadvantage resource wise, as the amenities that come with a place to stay are essential to establishing stability in society. This is further compounded by the fact that families in disadvantaged neighborhoods are the population more likely to be evicted as evidenced by a Desomond (2017) study of Milwaukee renters.

Desomond (2012) examined eviction in urban areas and studied the long term implications of evictions in urban neighborhoods and who was most affected. The finding was that people who’ve been evicted have the issue that landlords won’t rent to them due to their past evictions, and certain affordable housing programs also won’t consider them. Affordable housing programs bias toward past evictions isn’t the only issue either, long waitlist times with other families needing a place to stay and inability to qualify for basic income requirements are further stressors on those who’re evicted/unhoused. Which is supported by Collinson’s(2018) findings on families in New York cities who’ve been affected by eviction.
Bryne et al. (2021) conducted an in-depth analysis of whether rising income inequality leads homelessness at the local level. And if inequality does have an effect on the homeless is the effect due to income, price, or both? The study was conducted in the United States, using census bureau data from 2017-2018. The findings was a casual relationship between local income inequality and homelessness. The findings suggested that local income inequality was responsible for more sheltered rather than unsheltered homelessness.

Shinn (2007) paper examine the causes homelessness in the United States as well as internationally and also possible efforts to reduce homelessness that can be taken. One finding was an overrepresentation of minorities who are homeless, suggesting social exclusion is a factor, and Shinn suggests social transfer policies could be instrumental in finding solutions to homelessness. Shinn also notes how there’s little literature on factors which can be a precursor to homelessness, which could be very useful for policy makers when identifying where to focus Social Welfare policy. Shinn has another paper as well which goes deeper in examining homelessness, specifically in the United States and United Kingdom who Shinn note have higher rates of lifetime homelessness, the United States being the highest. Both the United States and United Kingdom have less generous social policies than most European countries, and those who're racial minorities and experience mental illness are disproportionately affected. Shinn pointed out that discrimination in four forms of social exclusion was leading to this issue: income, wealth, housing and incarceration.
Quigley et al. (2001) examined what housing market and income distribution factors were contributing to homelessness in the United States, their finding was that small changes in housing market conditions could have a substantial impact on homelessness rates in the United States. And go on to suggest that modest housing supply policies along with housing assistance programs can address homelessness. Cleveland (2020) finds that to reduce inequality in the United States would require national tax reform and more antitrust enforcement. Cleveland also goes on to suggest that cities can reduce local inequality by making property tax assessments more uniform or only taxing land.

Fowle (2021) researched the effect of homelessness specifically on people of color in the United States, who make up less than a quarter of the population but are more than half of the homeless population. The finding being that racist institutions and social systems built into the United States since its founding are the main contributors to current racialized homelessness we see today.

Molnar et al. (1990) studied the implications of homelessness and what it means to those who’re effected, they found that Homeless children are normally underimmunized or non immunized, have high lead in their bloodstream and high psychological stress levels, have stunted growth, are likely to have infectious diseases, and are addicted to drugs while having very low access to health care. Children experiencing homelessness are also more likely to be withdrawn from school activities, be absent from school, and switch schools constantly which leads to generally worse education outcomes for
homeless children as opposed to housed children Fantuzzo (2012). People experiencing homelessness are more likely to develop health problems due to environmental stressors and these stressors even apply in a public shelter. Other factors affecting people experiencing homelessness are stigmatization or discrimination from society, lack of constant access to healthcare. (Christiani, Hudson, Nyamathi, Mutere, & Sweat, 2008; Hudson et al., 2009; Hwang et al., Roche, 2004).

Medical Expenses have been shown by researchers to cause financial difficulty. A national study of bankruptcy filers in 2007 found that medical expenses were a factor in 62.1% of all bankruptcies. Most of the bankruptcies were filed by middle-class homeowners with health insurance. And this percentage didn’t change much at all in a follow-up study done after Medicaid expansion. (Himmelstein, D. U., Thorne, D., Warren, E., & Woolhandler, S. (2009))

2. Revised Lit Review:

**Theme: Impact of Out-of-Pocket Medical Expenses on Household Migration and Future Outcomes**

There is limited literature on how out-of-pocket medical expenses affect household migration in the U.S. or how they impact future household outcomes. However, Linde & Egede's (2023) study on the association between state-level Medicaid expansion and eviction rates provides valuable insights. Their findings indicate that the expansion of Medicaid in the U.S. from 2002 to 2018 was associated with a reduction in eviction judgments, suggesting that health insurance increases households’ resilience against
high medical expenses and reduces the likelihood of sudden relocations. This, in turn, contributes to housing security and potentially better overall outcomes for households.

**Theme: Eviction and Homelessness as Disadvantages and Contributors to Poverty**

A significant body of literature exists on the detrimental effects of eviction and homelessness, which often lead to a cycle of poverty. Collinson (2022) demonstrates that even the process leading up to an eviction case results in increased hospital visits, reduced earnings, detachment from employment-seeking, and ultimately, homelessness. The impact of eviction is particularly pronounced among female and black tenants. Furthermore, long-term consequences include worsened financial health, decreased credit scores, and increased indebtedness. Consequently, local governments face the burden of providing healthcare and services to address homelessness-related issues (Collinson, 2022; Balboni, 2022).

Desmond's (2012) research focuses on the long-term implications of eviction in urban areas and identifies the population groups most affected. Evicted individuals often face difficulties in finding new housing due to landlords' reluctance and exclusion from certain affordable housing programs. Moreover, lengthy waitlist times and failure to meet basic income requirements exacerbate the challenges faced by those who have been evicted or are unhoused. These findings align with Collinson's (2018) study, which specifically examines the impact of eviction on families in New York cities (Desmond, 2012; Collinson, 2018).

**Theme: Income Inequality, Social Exclusion, and Homelessness**
The relationship between rising income inequality and homelessness is explored by Bryne et al. (2021) in a comprehensive analysis. Their study, conducted in the United States using census bureau data from 2017-2018, reveals a causal link between local income inequality and homelessness. Specifically, the findings suggest that income inequality is associated with higher rates of sheltered homelessness rather than unsheltered homelessness.

Shinn (2007) examines the causes of homelessness both in the United States and internationally and proposes potential solutions. One significant finding is the overrepresentation of minorities among the homeless population, indicating that social exclusion plays a role. Shinn highlights the importance of social transfer policies as potential instruments for addressing homelessness. Furthermore, Shinn's research emphasizes the scarcity of literature exploring precursors to homelessness, which could offer valuable insights for policymakers in the realm of social welfare (Shinn, 2007).

**Theme: Housing Market, Income Distribution, and Homelessness**

Quigley et al. (2001) investigate the factors related to housing market conditions and income distribution that contribute to homelessness in the United States. Their findings indicate that even minor changes in housing market conditions can have a significant impact on homelessness rates. The authors suggest that modest housing supply policies, combined with housing assistance programs, can effectively address the issue. In a similar vein, Cleveland (2020) argues that reducing inequality in the United States requires national tax reform and increased antitrust enforcement. At the local level, cities can tackle inequality by implementing more uniform property tax assessments or focusing on land taxation.
Theme: Racial Disparities in Homelessness

Fowle (2021) delves into the specific impact of homelessness on people of color in the United States. Despite constituting less than a quarter of the population, people of color account for more than half of the homeless population. The study attributes racialized homelessness to racist institutions and social systems that have persisted in the United States since its founding.

Theme: Health and Well-being Consequences of Homelessness

Molnar et al. (1990) examine the implications of homelessness on individuals, particularly focusing on homeless children. Their findings reveal that homeless children experience significant health challenges, including underimmunization, high lead levels, psychological stress, stunted growth, infectious diseases, and drug addiction. These children also face obstacles in accessing healthcare and suffer from disrupted education due to frequent school switches. Similarly, individuals experiencing homelessness are prone to developing health problems due to environmental stressors, even within public shelters. Stigmatization, discrimination, and limited access to healthcare further compound the difficulties faced by individuals experiencing homelessness (Molnar et al., 1990; Fantuzzo, 2012; Christiani et al., 2008; Hudson et al., 2009; Hwang et al., 2004).

Theme: Financial Impact of Medical Expenses

Researchers have consistently demonstrated the financial difficulties caused by medical expenses. A national study of bankruptcy filers in 2007 found that medical expenses
played a role in 62.1% of all bankruptcies, even among middle-class homeowners with health insurance. Subsequent studies following Medicaid expansion did not show significant changes in this percentage (Himmelstein et al., 2009).

3. Data & Measurement of Variables:
This data comes from IPUMS USA which provides data from decennial censuses from 1790 to 2010 and American Community Surveys (ACS) from 2000 to the present. Out-Of-Pocket Medical Expenses data only goes from 2009 - 2019, which has about 31,000,000 observations and for the purpose of this analysis we’ll be focusing on this subset.

I’ll be estimating migration (whether a household migrated within or out of state) based on Medical Expenses (Medical_Share). Medical_Share is simply out-of-pocket medical expenses (MOOP) divided by Household Income - Yearly Rent. Medical_Share = (MOOP / (HHINCOME - RENT*12)). Migration is made from a built-in variable in the dataset called MIGRATE1D which tracks whether a household migrated in-state, out-of-state, out of the country, and whether they chose to not migrate at all. Migration is simply 0 if the household didn’t migrate and 1 if they did migrate.

Then I'll be estimating migration in states with/without medicaid (Medicaid_Expansion), which is 1 for states that have expanded medicaid and 0 for those that have not, and
using an instrumental variable (Post Expansion) which is 1 for years 2014-2019. This will help establish a causal relationship between medicaid expansion assisting as a protection against migration due to medical expenses.

To analyze the relationship between medical expenses and household migration, we employ a regression model known as Ordinary Least Squares (OLS). The OLS model allows us to estimate the coefficients that quantify the effect of medical expenses on the probability of migration. I’ll be using OLS for 3 Models, and each model will have fixed effects, one fixed effect for county (PUMA) and another for a year. I’ll be adding in and taking away fixed effects so I can test the robustness of each model.
Low expenses are qualified as <=4% of income, moderate is <10% and >4%, and high >= 10%. As we can see from these bar charts, those in the lower-socioeconomic group are most affected by high medical shocks.

4. Results:

**Regression 1:** Migration = β0 + β1 * Medical_Share + ε

<table>
<thead>
<tr>
<th></th>
<th>OLS 1</th>
<th>OLS 2</th>
<th>OLS 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>MedicalShare</td>
<td>0.061***</td>
<td>0.062***</td>
<td>0.062***</td>
</tr>
<tr>
<td>(Intercept)</td>
<td>(0.007)</td>
<td>(0.003)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>Num.Obs.</td>
<td>31459658</td>
<td>31459658</td>
<td>31459658</td>
</tr>
<tr>
<td>R2</td>
<td>0.004</td>
<td>0.004</td>
<td>0.000</td>
</tr>
<tr>
<td>R2 Adj.</td>
<td>0.004</td>
<td>0.004</td>
<td>0.000</td>
</tr>
<tr>
<td>FE: YEAR</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FE: PUMA</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

The regression analysis indicates a positive relationship between the share of income spent on medical expenses and household migration. Specifically, we find that for each additional increase in a household's allocation of income towards medical expenses, the
probability of migration increases. These results suggest that higher medical expenditures are associated with a greater likelihood of households choosing to migrate. This finding underscores the significance of healthcare costs as a contributing factor in migration decision-making. We also see that regardless of fixed effects for PUMA and YEAR the coefficient of Medical Share remains roughly the same, showing this model is robust.

**Model 2:** Migration = β0 + β1(Medicaid_Expansion) + β2(Post_Expansion) + β3(Medicaid_Expansion*Post_Expansion) + ε

<table>
<thead>
<tr>
<th></th>
<th>OLS 1</th>
<th>OLS 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicaid_Expansion</td>
<td>-0.010***</td>
<td>-0.009***</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Post_Expansion</td>
<td>0.000</td>
<td>0.002***</td>
</tr>
<tr>
<td></td>
<td>(0.001)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Medicaid_Expansion ×</td>
<td>-0.002*</td>
<td>-0.002***</td>
</tr>
<tr>
<td>Post_Expansion</td>
<td>(0.001)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>(Intercept)</td>
<td></td>
<td>0.115***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.000)</td>
</tr>
<tr>
<td>Num.Obs.</td>
<td>31459658</td>
<td>31459658</td>
</tr>
<tr>
<td>R2</td>
<td>0.004</td>
<td>0.000</td>
</tr>
<tr>
<td>R2 Adj.</td>
<td>0.004</td>
<td>0.000</td>
</tr>
<tr>
<td>FE: PUMA</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

States that have expanded medicaid have a lower rate of migration than those that did not, as we can see from the interaction term between Medicaid_Expansion and Post_Expansion. This negative relationship holds up even with county fixed effects.
taken away. Showing the model’s robustness. YEAR isn’t a fixed effect here since it causes a multi-collinearity error with post expansion.

**Model 3:** Medical\_Share = \beta_0 + \beta_1(Medicaid\_Expansion) + \beta_2(Post\_Expansion) + \beta_3(Medicaid\_Expansion*Post\_Expansion) + \epsilon

<table>
<thead>
<tr>
<th></th>
<th>OLS 1</th>
<th>OLS 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicaid_Expansion</td>
<td>-0.000408*</td>
<td>-0.001***</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Post_Expansion</td>
<td>-0.001***</td>
<td>-0.001***</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Medicaid_Expansion \times Post_Expansion</td>
<td>-0.0004**</td>
<td>-0.0003***</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>(Intercept)</td>
<td></td>
<td>0.022***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.000)</td>
</tr>
<tr>
<td>Num.Obs.</td>
<td>31459658</td>
<td>31459658</td>
</tr>
<tr>
<td>R2</td>
<td>0.003</td>
<td>0.000</td>
</tr>
<tr>
<td>FE: PUMA</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

States which expanded medicaid have lower medical expenses than those that have not as evidenced by the interaction term between Medicaid\_Expansion & Post\_Expansion. This suggests states expanding medicaid have some impact on relieving medical burdens on Households in those states.
**Conclusion:** My findings suggest that sudden medical shocks make households - specifically low income households with no health insurance - more likely to migrate. And based on these findings State level Medicaid Expansion makes low and middle income households much more resistant to sudden medical shocks. Medicaid Expansion seems to have made the biggest difference in helping low and middle income households gain access to insurance. These findings suggest that Medicaid expansion plays a crucial role in alleviating the financial burden of medical costs for individuals and families in the expanded states.

To further reinforce the causality between medical expenses and migration, I recommend the utilization of a Census panel dataset. This would enable a more comprehensive exploration of the relationship between households grappling with high medical expenses and their subsequent migration patterns. By incorporating panel data, we can gain valuable insights into the nuanced factors driving migration decisions, such as eviction, job prospects, or other significant determinants that prompt individuals and families to relocate.

While this study acknowledges the limitations of the dataset used, particularly the absence of panel data and a lack of specific reasons cited for migration, its findings remain robust and offer crucial insights into the complex interplay between medical expenses and migration. By advocating for further research employing more comprehensive datasets, we can deepen our understanding of the intricate mechanisms at play, enabling policymakers to devise more targeted interventions that address the needs of households facing medical challenges and create environments conducive to both health and socioeconomic stability.
In summary, my research underscores the transformative power of Medicaid expansion in safeguarding low and middle-income households from the financial strain imposed by medical expenses. By empowering individuals and families with access to vital health insurance coverage, Medicaid expansion serves as a linchpin in promoting resilience and reducing the likelihood of migration prompted by medical shocks. These findings hold immense implications for policymakers and healthcare advocates, urging them to recognize and harness the potential of Medicaid expansion in fostering individual and community well-being.
Citations:


