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Identifying health insurance predictors and the main reported reasons for being uninsured among US immigrants by legal authorization status

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SUMMARY

This study identifies differences in health insurance predictors and investigates the main reported reasons for lacking health insurance coverage between short-stayed (< 10 years) and long-stayed (> 10 years) US immigrant adults to parse the possible consequences of the Affordable Care Act among immigrants by length of stay and documentation status. Foreign-born adults (18–64 years of age) from the 2009 California Health Interview Survey are the study population. Health insurance coverage predictors and the main reasons for being uninsured are compared across cohorts and by documentation status. A logistic-regression two-part multivariate model is used to adjust for confounding factors. The analyses determine that legal status is a strong health insurance predictor, particularly among long-stayed undocumented immigrants. Immigration status is the main reported reason for lacking health insurance. Although long-stayed documented immigrants are likely to benefit from the Affordable Care Act implementation, undocumented immigrants and short-stayed documented immigrants may encounter difficulties getting health insurance coverage.

Keywords

health insurance coverage; emigrants and immigrants; health care reform; undocumented immigrants

INTRODUCTION

Under the Patient Protection and Affordable Care Act (ACA), US-born individuals and documented immigrants have similar entitlements. Short-stayed documented immigrants in the country are subject to the health insurance mandate and remain ineligible for Medicaid; however, they are eligible for the subsidies of the State Health Insurance Exchanges. By contrast, undocumented immigrants are excluded from all its provisions (CBO, 2007; Zuckerman *et al.*, 2011). The role of legal status on health insurance coverage is likely to have important implications for the ACA implementation across different types of US foreign-born residents.

Health insurance predictors are likely to differ across different immigrant cohorts, particularly between documented and undocumented immigrants. When foreign-born residents first arrive in the US, they observe lower health insurance coverage rates compared with immigrants who have been in the country more years (Thamer *et al.*, 1997). Short-stayed foreign-born residents are more likely to hold jobs that do not offer health insurance coverage and are ineligible for subsidized health insurance coverage through Medicaid (Passel, 2006; Pitkin Derose *et al.*, 2009). Return migration, however, is likely to change the characteristics of US immigrants. Reliable statistics on return migration are unavailable, but anecdotal sources suggest that not all short-stayed foreign-born residents settle in the country (Chiswick *et al.*, 2008). A share of foreign-born residents accumulates capital and skills while they work or study temporarily in the US, but they eventually return to their home countries.

Immigrant assimilation and acculturation are also likely to change the characteristics of immigrants across cohorts and the role that legal status plays as a predictor of health insurance coverage. Long-stayed immigrant cohorts would be more likely to report health insurance coverage because this cohort may include a higher share of individuals who were able to secure health insurance coverage through their employers or Medicaid. The role of legal status as a predictor of health insurance coverage is also likely to change over time. For instance, many of the short-stayed undocumented immigrants become documented through different policy and political mechanisms.

A full assessment of the implications of the ACA for immigrants requires a better understanding of the predictors of health insurance coverage among these subjects and about the role of documentation status on health insurance coverage from the perspective of US immigrants. Previous studies show that citizenship, employment status, employment type, income and English proficiency are major predictors associated with health insurance coverage among immigrants (Thamer *et al.*, 1997; Hadley, 2003; Hargraves and Hadley, 2003; Lillie-Blanton and Hoffman, 2005; Alegria *et al.*, 2006; Ku, 2009; Vargas Bustamante and Chen, 2012). Studies also explore the role of documentation status on health insurance coverage (Goldman *et al.*, 2005; Zuckerman *et al.*, 2011). Most of this research, however, does not investigate how these predictors differ between short-stayed and long-stayed immigrants and by documentation status.

This study provides a cross-cohort analysis of how immigrant documentation status affects the odds of having health insurance among the US foreign-born population. In addition, it is the first to identify the main reported reasons for lacking health insurance coverage from the reporting of foreign-born US residents. It compares health insurance coverage between short-stayed (≤ 10 years in the country) and long-stayed (> 10 years) US immigrant residents. The study implements logistic regression analyses using a two-part multivariate model to adjust for confounding factors and to determine the main reported reasons for lacking health insurance among uninsured immigrants.

METHODS

Data

We use data from the 2009 California Health Interview Survey (CHIS). CHIS is a random digit telephone population-based study conducted every other year since 2001. Households are drawn from each county in California and stratified to produce sufficient sample sizes for stable estimates in many smaller counties. The 2009 survey also includes a random sample of 3047 cell phone owners who live in households without a landline. The final sample includes 47 614 adult respondents who are representative of the noninstitutionalized household population in California. CHIS data are collected in English, Spanish and several Asian languages. The overall adult response rate of completed extended interviews is 56.2%. This response rate is consistent with those of general telephone surveys and similar to other recent major telephone health surveys in California (Keeter, 2006; CHIS, 2009). The translation, cultural adaptation process and data collection methods are described in previous studies (Ponce *et al.*, 2004; California Health Interview Survey, 2008). It is relevant to mention that an earlier national survey showed that 94% of undocumented immigrants had a landline telephone or cell phone, and this rate is marginally lower than the overall rate in California (The Legalized Population Survey, 2007).

Dependent variables

The likelihood of health insurance coverage and the main reasons for being uninsured are the main dependent variables. To estimate the likelihood of health insurance coverage, a dichotomous outcome variable identifies individuals according to health insurance coverage status. The second outcome measures are constructed from the main reported reasons for remaining uninsured among those who lack any health insurance coverage. This measure records 'the main reason' why uninsured individuals lack health insurance coverage. Only one reason can be selected. The categories recorded in the survey are the following: cannot afford it, not eligible due to work or health status, not eligible due to immigration status, does not believe in insurance coverage, can get health care for free and other. The last three reasons were merged into 'other' due to small sample responses. By using this information, a series of binary variables were constructed indicating whether each of the above reasons were responsible for the subject lacking health insurance.

Explanatory variables

We restrict the study sample to the foreign-born population of California. Among the foreign-born, we differentiate between short-stayed (≤ 10 years in the US) and long-stayed

residents (> 10 years) as well as between documented and undocumented individuals. We construct four mutually exclusive dichotomous measures of citizenship and immigration status using citizenship/nativity, time of US residence and documentation status. To construct the documentation variable, naturalized US citizens and immigrants with permanent residence status (i.e., having a green card) were first classified as documented immigrants following the criteria used in the previous literature (Jasso *et al.*, 2000; Goldman *et al.*, 2005; Ortega *et al.*, 2007; Vargas Bustamante *et al.*, 2012).

An adaptation of the ‘residual estimation methodology’ used by researchers of the Pew Hispanic Center and the Urban Institute to identify the undocumented in the Current Population Survey was implemented in CHIS (Passel, 1986; Warren and Passel, 1987; Passel, 2006; Zuckerman *et al.*, 2011). This methodology identifies undocumented residents among the residual of the foreign-born population that is estimated using models to single out political refugees and student/workers on temporary visas in California using statistics from the Department of Homeland Security (Data on Nonimmigrant Admissions, 2010). Individuals not identified as undocumented using this method were classified as documented immigrants together with naturalized citizens or immigrants with permanent residence status.

Thus, our four mutually exclusive dichotomous measures are: (1) foreign-born, documented and short-stayed (< 10 years) residents ($N=906$); (2) foreign-born, documented and long-stayed (> 10years) residents ($N=6,588$); (3) foreign-born, undocumented and short-stayed (< 10 years) residents ($N=639$) and (4) foreign-born, undocumented and long-stayed (>10years) residents ($N=807$).

In addition to these four population categories, the analysis includes a number of explanatory variables that the literature has identified as main predictors of health insurance coverage (Fronstin *et al.*, 1997; Monheit and Vistnes, 2000; Hargraves and Hadley, 2003; Ku, 2009). These include socioeconomic and demographic variables (i.e., age, sex/gender, education, race/ethnicity, marital status, family size, poverty status to proxy for income, employment status and types of employment), self-reported health status, place of residence and language of interview to proxy for native language. We include fixed effects for county to adjust for unobserved regional differences across California.

Statistical analyses

We implement a logistic-regression analysis using a two-part model specification (34, 35). The first part of this model estimates the likelihood of health insurance coverage from the total sampled population (Table 2). The second part of the model estimates a number of logistic regression models for subjects who remain uninsured (Table 3). This second specification investigates the odds of reporting affordability, employment eligibility, immigration status or ‘other’ as the main reason for lacking health insurance coverage. The regressions in the two-part model distinguish among foreign-born residents by documentation status (i.e., documented vs. undocumented) and time of US residence (< 10 years or > 10 years) to compare outcomes between short and long-stayed immigrants. The short-stayed documented population (< 10 years) serves as the reference group. We use

Stata 10.0 (StataCorp LP, College Station, TX, USA) and perform-svy-commands to conduct all statistical analyses.

RESULTS

Table 1 details the distribution of individual characteristics and health insurance coverage among foreign-born residents of California by documentation status and length of US residence (short-stayed ≤ 10 years or long-stayed > 10 years). Overall, long-stayed immigrants are more likely to be insured, to be Latino or Asian, to be older, female, married, with more years of schooling, higher incomes, to have smaller families, participate in the workforce, report excellent and very good health, live in urban and suburban areas and responded to the survey in English compared with the remaining categories. These raw differences would suggest documented immigrant positive selection across cohorts and overall improvement in socioeconomic status as reflected by income, education, self-reported health and place of residence measures.

Undocumented immigrants, by contrast, are more likely to be uninsured, to be overwhelmingly Latino, young, have fewer years of schooling, lower incomes, to be out of the workforce, report good health, live in either urban or rural areas and to respond the survey in Spanish and Asian languages compared with the two categories of documented immigrants. Among undocumented residents, differences are not as marked between the short-stayed and long-stayed as in the case of documented immigrants. The number of Asian undocumented immigrants, however, drops from 20% to 3% between the short-stayed and long-stayed undocumented categories. Similarly, the share of college graduates for the short-stayed undocumented sample drops from 33% to 14% for the long-stayed undocumented sample.

Table 2 presents our logistic regression multivariate analyses that estimate the probability of reporting lack of health insurance coverage after controlling for other covariates. On an average, long-stayed documented immigrants (odds ratios [OR]: 0.74, <0.09) are less likely to be uninsured compared to short-stayed documented immigrants (reference category). By contrast, long-stayed undocumented immigrants are more likely to be uninsured (OR: 1.67) compared to the reference group. Differences between short-stayed documented and undocumented immigrants are nonstatistically significant. Although self-employed immigrants and those who responded the survey in Spanish and Asian languages are more likely to be uninsured, female foreign-born residents, those above the 200% poverty level, with smaller families and employment in the private sector or the government are more likely to have health insurance coverage.

Table 3 estimates a logistic regression condition on lacking health insurance coverage to compare the main reported reasons for being uninsured among foreign-born residents by documentation status and time of US residence. These regression models control for the same explanatory factors reported in Table 2, but the full set of model results are not shown in the interest of brevity. According to Table 3, undocumented residents are more likely to report immigration status as the main reason for lacking health insurance coverage (for short-stayed [OR: 6.05, <0.01] and [OR: 7.66, <0.01] for long-stayed) compared to the

reference group. By contrast, long-stayed documented residents (OR: 0.07, 0.01) are less likely to report immigration status as the main reported reason for being uninsured. Short-stayed undocumented residents are also less likely to report affordability (OR: 0.48, 0.04) as the main reason. Employment eligibility and other reasons are not statistically significant across categories.

DISCUSSION

We investigated the role of legal status as a predictor of health insurance coverage and compared the main reported reasons for lacking health insurance among US foreign-born residents to determine the effects of the ACA exclusion of undocumented immigrants and Medicaid limited eligibility for short-stayed documented immigrants. The results of our logistic-regression analyses suggest that documentation status is an important predictor of having health insurance coverage among immigrants. In addition, our findings demonstrate that based on immigrant's reports, immigration status still remains the main predictor for lacking insurance coverage, particularly among the undocumented.

As suggested by prior studies, a selection process occurs across immigrant cohorts. Those who settle in the US stay for a myriad of reasons including entering the job market and marriage (Belot and Hatton, 2008; Chiswick *et al.*, 2008). The outcomes of our analyses, however, also suggest that immigrants self-select and those who settle and begin the assimilation process to the US are different compared to short-stayed foreign residents. In the case of documented immigrants, our study provides evidence of positive selection and assimilation observed through increased health insurance coverage, higher incomes, more education achievement, relatively good health status, a higher share of suburban residence and more fluency in English. Relatively stable shares of documented and undocumented immigrants who report fair, good, very good and excellent health status between the short and long-stayed samples suggest that healthy immigrants may be more likely to stay.

This progression is much less pronounced in the case of the undocumented. Evidence of immigrant selection among the undocumented, however, can be observed in the considerable decline of Asian and college-educated immigrants among the long-stayed sample. Differences between documented and undocumented immigrants across cohorts can be explained by three factors. First, return migration might be more prevalent among undocumented immigrants, particularly considering that this cohort is much more likely to be subject of deportation actions. Second, for those who stay in the US, their legal statuses may prevent them from getting jobs that would provide health insurance coverage or Medicaid benefits that would enable them to access subsidized coverage. Third, a share of short-stayed undocumented immigrants may become documented over time, thus they would shift from the short-stayed undocumented category to the long-stayed documented category.

This study is the first to identify the main reported reason for lacking health insurance capturing immigrants' reports on this issue. The study's findings suggest that immigration status is singled out as the main reason for lacking health insurance coverage compared to other possible reasons that can explain uninsured status among US-born individuals such as

affordability or job eligibility. Immigration status, however, is interlinked with these two factors. Because health insurance coverage is closely attached to type of employment, job self-selection may be strongly associated with health insurance coverage together with legal status. Future research should try to disentangle the specific role of employment self-selection and legal status of US foreign-born residents to better measure the consequences of legal status on health insurance coverage.

The ACA, immigration reform and the undocumented

The potential exclusion of approximately 12 million undocumented individuals from the ACA and of 7 million short-stayed documented immigrants from Medicaid expansion coverage calls into question whether not offering affordable health insurance coverage to these groups is socially desirable or cost-effective considering the long-term consequences of not providing timely quality care. The implications of the study findings for the success of the ACA in the particular case of undocumented immigrants would depend on the outcomes of immigration reform.

Immigration reform is currently being drafted in the US Congress. It is likely that this policy will include a citizenship path for undocumented immigrants. Prospective regularization programs that have been considered would include renewable visas for young, employed and married undocumented immigrants and a regularization process that could take more than 10 years of US residence before they are eligible to become permanent residents (The White House, 2013). Whether undocumented immigrants who begin the path for citizenship could potentially get health insurance coverage in this transition period from their employers, the State Health Insurance Exchanges or Medicaid could have a direct impact on health care equity and in the overall success of the ACA health insurance expansion.

Among short-stayed undocumented immigrants, the effect of legal status on health insurance coverage would be weaker compared to long-stayed immigrants because a considerable share of foreign-born residents who may lack insurance coverage will not settle in the US permanently (Chiswick *et al.*, 2008). If present trends continue, this dynamic is unlikely to be considerably altered by the ACA implementation or even by immigration reform because the flow of undocumented workers to the US has been linked to different economic variables (Hanson and Spilimbergo, 1999).

Our study findings point out to the needs of the undocumented immigrant population who have lived in the US for more than 10 years. According to our analyses, this population group is more likely to be uninsured once other factors are taken into consideration. This cohort would remain particularly vulnerable to the negative consequences of being uninsured such as restricted access to care, underutilization of preventive services and treatment of health conditions in advanced stages, unless their transitory legal status (before they can apply for permanent residence) allows them to get health insurance coverage in terms similar to those of documented immigrants and US citizens.

If immigration reform upholds the exclusion of undocumented immigrants under the ACA, even for those who begin the regularization process, our study findings would portend that identified inequities between short and long-stayed documented and undocumented

immigrants would remain or increase until the authorization of undocumented residents is resolved. The vulnerability status of undocumented immigrants, however, would remain or worsen because their exclusion from the new programs that would offer affordable coverage to currently uninsured documented immigrants and US citizens would put them at a disadvantage.

The ACA does not overrule the 1984 Indigent Healthcare Law that banned patient dumping, Emergency Medical Treatment and Active Labor Act of 1986 that requires hospitals to provide urgent care to all patients regardless of ability to pay, and other laws and policies that prevent denial of medical care on the basis of race/ethnicity, origin, age, citizenship and handicap. This legislation would continue to protect those undocumented immigrants who could potentially seek urgent care. The ACA, however, considers gradual cuts to safety net funding under the assumption that newly insured population will offset cuts to safety net funding (Kaiser Commission on Medicaid and the Uninsured, 2010b; Kaiser Commission on Medicaid and the Uninsured, 2010a).

The uncertainty on the number of uninsured individuals, the uneven distribution of undocumented populations and their rapid mobility because of changes in the job market could potentially burden the finances of healthcare providers that currently cater to the undocumented. Although some providers may be able to offset cuts in safety net funds with increasing revenues from newly insured patients who would get subsidized health insurance coverage from Medicaid and the health exchanges, other providers may face important challenges from delivering health care to an increasing number of undocumented immigrants coupled with decrease availability to safety net funding.

The results of this study are particularly relevant for California. It is one of the main immigrant gateways into the country, and a considerable number of foreign-born residents settle in the state, particularly the undocumented. For instance, one out of every four foreign-born residents in the US live in California; a third of the state's residents are foreign-born; a language other than English is spoken in 39% of California's households and an estimated 40% of all undocumented immigrants in the US live in California (Public Policy Institute of California, 2002). Consequently, the exclusion of the undocumented and recent documented immigrants from the ACA is likely to affect California disproportionately compared to other states with fewer foreign-born residents.

Study Limitations

This study has some limitations. First, we use cross-sectional data, limiting the ability to draw causal inferences from the study results. Second, self-reported data might be subject to measurement error. Third, although we use a set of socioeconomic and demographic measures employed in the previous literature to identify the undocumented in large surveys (Zuckerman *et al.*, 2011), it is still possible that the legal status of a few respondents is not precisely identified in CHIS. Although the cross-sectional analyses used in this study address the issues of return migration and immigrant selection, the analyses assume static cohort effects between short-stayed and long-stayed immigrants.

CONCLUSIONS

The ACA is likely to benefit primarily long-stayed documented immigrants because they have similar entitlements to those of US citizens. Our findings, however, show that long-stayed documented immigrants are currently more likely to have health insurance coverage. Two immigrant populations that are currently more likely to be uninsured will remain vulnerable after its implementation. The first would be short-stayed documented immigrants who are not eligible for Medicaid subsidies and the undocumented who are excluded from this legislation altogether. Immigration reform has the potential to reduce prospective inequities among immigrants under the ACA if programs to regularize undocumented immigrants would allow them to have similar entitlements to those of uninsured documented immigrants or US citizens.

Our study also demonstrates what immigrants agree on the main barriers for them to get health insurance coverage. From their reports, immigration status is indeed the main barrier to get health coverage on top of affordability, job eligibility or other reasons. Health insurance coverage is linked to the labor market as health benefits are often attached to type of employment and other socioeconomic factors (Card, 2001; Borjas, 2003; Ottaviano and Peri, 2005). Immigration status, however, prevents a considerable share of the US immigrant population from getting the jobs or access to the public programs that would allow them to get adequate coverage.

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References

- Alegria M, Cao Z, McGuire TG, et al. Health insurance coverage for vulnerable populations: contrasting Asian Americans and Latinos in the United States. *Inquiry*. 2006; 43(3):231–254. [PubMed: 17176967]
- Belot, M.; Hatton, TJ., editors. *Immigrant Selection in the OECD*. Paris: Organization for Economic Cooperation and Development; 2008.
- Borjas GJ. The labor demand curve is downward sloping: reexamining the impact of immigration on the labor market. *Q J Econ*. 2003; 118(4):1335–1374.
- California Health Interview Survey. [Accessed October 2009] Survey methodology. 2008. <http://www.chis.ucla.edu/methods.html>
- Card D. Immigrant inflows, native outflows, and the local labor market impacts of higher immigration. *J Labor Econ*. 2001; 19(1):22–64.
- CBO. *The Impact of Unauthorized Immigrants on the Budgets of State and Local Governments*. Congressional Budget Office; 2007.
- Chiswick BR, Lee YL, Miller FW. Immigrant Selection Systems and Immigrant Health. *Contemp Econ Policy*. 2008; 26(4):555–578.
- CHIS. *Methodology Series*. Los Angeles: UCLA Center for Health Policy Research; 2009.
- Data on nonimmigrant admissions. 2010. <http://www.dhs.gov/files/statistics/immigration.shtm>
- Fronstin P, Goldberg LG, Robins PK. Differences in private health insurance coverage for working male Hispanics. *Inquiry*. 1997; 34(2):171–180. [PubMed: 9256821]

- Goldman DP, Smith JP, Sood N. Legal status and health insurance among immigrants. *Health Aff (Millwood)*. 2005; 24(6):1640–1653. [PubMed: 16284039]
- Hadley J. Sicker and poorer- the consequences of being uninsured: a review of the research on the relationship between health insurance, medical care use, health, work, and income. *Med Care Res Rev*. 2003; 60(2):3S–75S. discussion 76S–112S. [PubMed: 12800687]
- Hanson GH, Spilimbergo A. Illegal immigration, border enforcement, and relative wages: Evidence from apprehensions at the US-Mexico border. *Amer Econ Rev*. 1999; 89(5):1337–1357.
- Hargraves JL, Hadley J. The contribution of insurance coverage and community resources to reducing racial/ethnic disparities in access to care. *Health Serv Res*. 2003; 38(3):809–829. [PubMed: 12822914]
- Jasso G, Massey DS, Rosenzweig MR, Smith JP. The New Immigrant Survey Pilot (NIS-P): overview and new findings about US legal immigrants at admission. *Demography*. 2000; 37(1):127–138. [PubMed: 10748994]
- Kaiser Commission on Medicaid and the Uninsured. Summary of New Health Reform Law: Kaiser Family Foundation. 2010a.
- Kaiser Commission on Medicaid and the Uninsured. Community health centers: opportunities and challenges of health reform. Washington D.C: 2010b.
- Keeter S. The impact of cell phone noncoverage bias on polling in the 2004 presidential election. *Public Opin Quart*. 2006; 70(1):88–98.
- Ku L. Health insurance coverage and medical expenditures of immigrants and native-born citizens in the United States. *Am J Public Health*. 2009; 99(7):1322–1328. [PubMed: 19443829]
- Lillie-Blanton M, Hoffman C. The role of health insurance coverage in reducing racial/ethnic disparities in health care. *Health Aff (Millwood)*. 2005; 24(2):398–408. [PubMed: 15757923]
- Monheit AC, Vistnes JP. Race/ethnicity and health insurance status: 1987 and 1996. *Med Care Res Rev*. 2000; 57(1):11–35. [PubMed: 11092156]
- Ortega AN, Fang H, Perez VH, et al. Health care access, use of services, and experiences among undocumented Mexicans and other Latinos. *Arch Intern Med*. 2007; 167(21):2354–2360. [PubMed: 18039995]
- Ottaviano, G.; Peri, G. Social Science Research Network: CEPR Discussion Paper. 2005. Rethinking the gains from immigration: theory and evidence from the US.
- Passel JS. Undocumented Immigration. *Ann Am Acad Polit Ss*. 1986; 487:181–200.
- Passel, JS. Size and Characteristics of the Unauthorized Migrant Population in the US. Washington DC: PEW Hispanic Center; 2006.
- Pitkin Derosé K, Bahney BW, Lurie N, Escarce JJ. Review: immigrants and health care access, quality, and cost. *Med Care Res Rev*. 2009; 66(4):355–408. [PubMed: 19179539]
- Ponce NA, Lavarreda SA, Yen W, Brown ER, DiSogra C, Satter DE. The California Health Interview Survey 2001: translation of a major survey for California's multiethnic population. *Public Health Rep*. 2004; 119(4):388–395. [PubMed: 15219795]
- Public Policy Institute of California. Just the facts: immigrants in California. San Francisco CA: 2002.
- Thamer M, Richard C, Casebeer AW, Ray NF. Health insurance coverage among foreign-born US residents: the impact of race, ethnicity, and length of residence. *Am J Public Health*. 1997; 87(1):96–102. [PubMed: 9065235]
- The Legalized Population Survey. [Accessed October 2009] Mexican Migration Project. 2007. <http://mmp.opr.princeton.edu/LPS/LPSpage.htm>
- The White House. Creating an immigration system for the 21st century. 2013.
- Vargas Bustamante A, Chen J. Health expenditure dynamics and years of U.S. residence: analyzing spending disparities among Latinos by citizenship/nativity status. *Health Serv Res*. 2012; 47(2):794–818. [PubMed: 21644969]
- Vargas Bustamante A, Fang H, Garza J, et al. Variations in healthcare access and utilization among Mexican immigrants: the role of documentation status. *J Immigr Minor Health*. 2012; 14(1):146–155. [PubMed: 20972853]
- Warren R, Passel JS. A count of the uncountable estimates of undocumented aliens counted in the 1980 United-States census. *Demography*. 1987; 24(3):375–393. [PubMed: 3678540]

Zuckerman S, Waidimann TA, Lawton E. Undocumented immigrants, left out of health reform, likely to continue to grow as share of the uninsured. *Health Aff (Millwood)*. 2011; 30(10):1997–2004. [PubMed: 21976345]

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Table 1

Summary statistics

	Foreign-born residents					
	Documented			Undocumented		
	10 years mean	SD	> 10 years mean	10 years mean	SD	> 10 years mean
Dependent variables						
Uninsured	0.24	0.43	0.16	0.37	0.39	0.43
Independent variables						
Race/ethnicity						
Latino/Hispanic	0.28	0.45	0.40	0.49	0.74	0.95
White	0.17	0.38	0.20	0.40	0.06	0.02
African-American	0.03	0.17	0.02	0.12	0.00	0.00
Asian	0.51	0.50	0.37	0.48	0.20	0.03
Other race/ethnicity	0.01	0.08	0.01	0.10	0.00	0.00
Age						
18–24 years	0.18	0.38	0.03	0.18	0.18	0.06
25–34 years	0.25	0.44	0.09	0.28	0.46	0.31
35–44 years	0.30	0.46	0.26	0.44	0.25	0.45
45–54 years	0.20	0.39	0.33	0.47	0.10	0.14
55–64 years	0.07	0.25	0.29	0.45	0.01	0.05
Average age	36.81	11.37	47.29	10.58	32.57	37.81
Female	0.62	0.49	0.58	0.49	0.64	0.61
Married	0.67	0.47	0.68	0.47	0.52	0.51
Schooling						
<High school	0.16	0.37	0.23	0.42	0.44	0.58
High school	0.27	0.44	0.18	0.38	0.22	0.28
College	0.56	0.50	0.59	0.49	0.34	0.14
Family income						
0–99%	0.31	0.46	0.18	0.38	0.55	0.60
100%–199%	0.26	0.44	0.22	0.42	0.22	0.29
200%–299%	0.12	0.32	0.14	0.34	0.07	0.07

	Foreign-born residents							
	Documented			Undocumented				
	10 years	Std	> 10 years	Std	10 years	> 10 years		
300%–above	0.31	0.46	0.46	0.50	0.16	0.36	0.04	0.19
Family size	2.88	1.43	2.65	1.38	3.07	1.56	3.51	1.61
Type of employment								
Private sector job	0.40	0.49	0.40	0.49	0.34	0.48	0.43	0.50
Government job	0.06	0.24	0.11	0.32	0.00	0.00	0.00	0.00
Self-employed	0.06	0.23	0.11	0.31	0.07	0.26	0.10	0.30
Family business	0.00	0.07	0.01	0.08	0.01	0.08	0.01	0.09
Out of work w/job	0.01	0.10	0.02	0.13	0.01	0.10	0.01	0.11
No job	0.47	0.50	0.35	0.48	0.57	0.50	0.45	0.50
Health status								
Excellent	0.17	0.38	0.17	0.37	0.12	0.33	0.10	0.30
Very good	0.24	0.43	0.25	0.43	0.17	0.38	0.10	0.30
Good	0.35	0.48	0.31	0.46	0.47	0.50	0.40	0.49
Fair	0.20	0.40	0.21	0.41	0.22	0.42	0.36	0.48
Poor	0.04	0.20	0.06	0.24	0.01	0.12	0.04	0.19
Residence								
Urban	0.80	0.40	0.73	0.44	0.73	0.44	0.77	0.42
Suburban	0.14	0.35	0.17	0.38	0.14	0.35	0.10	0.30
Rural	0.06	0.24	0.09	0.29	0.13	0.34	0.13	0.33
Language of interview								
English	0.46	0.50	0.59	0.49	0.17	0.37	0.10	0.30
Spanish	0.24	0.43	0.28	0.45	0.72	0.45	0.89	0.31
Asian languages	0.29	0.46	0.14	0.34	0.11	0.32	0.01	0.11
N=	887		6582		658		813	

Std, standard deviation.

Data source: California Health Interview Survey (CHIS, 2009).

Table 2

Logistic model: uninsured status (part I of two-part model)

	Coefficient	<i>p</i> -value
Documented* 10 years	REF	
Documented* > 10 years	0.74	0.09
Undocumented* 10 years	1.08	0.76
Undocumented* > 10 years	1.67	0.02
White	REF	
Latino/Hispanic	1.47	0.32
African-American	0.71	0.47
Asian	0.87	0.63
Other race/ethnicity	1.66	0.57
Age 18–24 years	REF	
25–34 years	1.08	0.70
35–44 years	1.13	0.56
45–54 years	1.14	0.51
55–64 years	0.96	0.84
Female	0.70	0.01
Married	1.00	0.99
Schooling		
>High school	REF	
High school	1.15	0.36
College	0.76	0.14
Poverty Status		
>100%	REF	
100%–199%	0.97	0.88
200%–299%	0.40	0.00
300%–above	0.25	0.00
Family size	0.78	0.00
Type of employment		
No job	REF	
Out of work w/job	0.38	0.01
Private sector	0.63	0.00
Government	0.36	0.00
Self-employed	1.82	0.00
Family business	1.16	0.76
Health status		
Poor	REF	
Fair	0.85	0.62
Good	0.82	0.52
Very Good	0.73	0.42
Excellent	0.83	0.62

	Coefficient	<i>p</i> -value
Residence		
Rural	REF	
Suburban	1.01	0.96
Urban	1.02	0.91
Language of interview		
English	REF	
Spanish	1.31	0.20
Asian languages	1.71	0.05

Data source: California Health Interview Survey (CHIS, 2009).

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Table 3

Logistic model: reasons to lack health insurance among the uninsured (part II of two-part model)

Reason 1: Affordability	Coefficient	<i>p</i> -value
Documented* 10 years	REF	
Documented* >10 years	0.87	0.63
Undocumented* 10 years	0.48	0.04
Undocumented* > 10 years	0.94	0.87
Reason 2: Job eligibility	Coefficient	<i>p</i> -value
Documented* 10 years	REF	
Documented* >10 years	2.42	0.14
Undocumented* 10 years	0.40	0.15
Undocumented* > 10 years	0.65	0.43
Reason 3: Immigration status	Coefficient	<i>p</i> -value
Documented* 10 years	REF	
Documented* >10 years	0.07	0.00
Undocumented* 10 years	6.05	0.00
Undocumented* > 10 years	7.66	0.00
Reason 4: Other reason	Coefficient	<i>p</i> -value
Documented* 10 years	REF	
Documented* > 10 years	0.99	0.99
Undocumented* 10 years	1.60	0.25
Undocumented* > 10 years	0.77	0.54

Data source: California Health Interview Survey (CHIS, 2009).

Notes: All explanatory variables in each model are excluded for brevity, but are available from the authors. All models include county fixed effects.